



وزارة التعليم العالي والبحث العلمي

دليل الدراسة لكليات العلوم الصحية بالجامعات الليبية



2022





قرار وزير التعليم العالي والبحث العلمي
رقم (1466) لسنة 2022 م
بشأن اعتماد دليل الدراسة لكليات العلوم الصحية
بالجامعات الليبية

وزير التعليم العالي والبحث العلمي .

- بعد الاطلاع على الإعلان الدستوري المؤقت وتعديلاته .
- وعلى الاتفاق السياسي الليبي الموقع في (17 ديسمبر 2015 ميلادي) .
- وعلى القانون رقم (12) لسنة (2010 م) بشأن إصدار قانون علاقات العمل ولائحته التنفيذية.
- وعلى القانون رقم (18) لسنة 2010 م بشأن التعليم .
- وعلى قرار مجلس النواب رقم (1) لسنة 2021 م بشأن منح الثقة لحكومة الوحدة الوطنية .
- وعلى قرار مجلس وزراء حكومة الوحدة الوطنية رقم (39) لسنة 2021 م بشأن اعتماد الهيكل التنظيمي وتحديد اختصاصات وزارة التعليم العالي والبحث العلمي وتنظيم جهازها الإداري .
- وعلى قرار اللجنة الشعبية العامة سابقاً رقم (501) لسنة 2010 م بشأن إصدار لائحة تنظيم التعليم العالي وتعديلاته .
- وعلى قرارنا رقم (630) لسنة 2021 م بشأن تشكيل لجنة وتحديد مهامها .
- وعلى قرار اللجنة الشعبية العامة رقم (22) لسنة 2008 م بشأن الهيكل التنظيمي للجامعات ومؤسسات التعليم العالي وتعديلاته .
- على كتاب السيد / رئيس اللجنة الرئيسية العليا للكليات الطبية والطبية المساعدة .

ق ر ر
مادة (1)

يتم بموجب أحكام هذا القرار اعتماد دليل الدراسة لكليات العلوم الصحية بالجامعات الليبية
وفق المرفق بهذا القرار .

مادة (2)

- يُعمل بهذا القرار من تاريخ صدوره وعلى الجهات المعنية التقيد به وتنفيذه .

عمران محمد القيب
وزير التعليم العالي والبحث العلمي



صدر في طرابلس
يوم
بتاريخ 10/2/2022 م
ش.ق.ر.

توطئة

إن الدول الحريضة على التعليم واكتساب المعرفة والخبرة اللازمة تعتبر من أهم استثماراتها وثرواتها تنمية وتطوير عقول أبنائها، لهذا اقتضت المنهجية العلمية أن تطرح النتيجة التي جاءت بها والفكرة التي اهتمت إليها ومن ثم يتبعها التطبيق الكاشف عن دقائقها الموضح لجزئياتها. لهذا تم وضع هذا الدليل بشأن اللوائح التنظيمية لكليات العلوم الصحية بالجامعات الليبية والخطة الدراسية المعتمدة وفق توصيف المقررات الدراسية.

من هنا ينبغي العمل بهذا الدليل للرفع من النتاج العلمي بحثاً وتدریساً لشتى تخصصات العلوم الصحية. ولأنها توطئة سنأخذها ونسعى إلى تطبيقها للوصول إلى الجميع بمضمون الدليل بألية متبعة من أجل الهدف وتحقيق الفكرة.

ونحن إذ نقدم هذه الجهود فإننا نأمل أن نكون قد قدمنا شيئاً يساعدنا على فتح الأبواب أمام أهل العلم والمعرفة خدمة لوطننا الحبيب ليبيا ومما يلبي احتياجات بلدنا لمؤهلين في مجال تخصصات العلوم الصحية كافة لتمكنهم من إحداث التطوير والتنمية في عالم يتسابق فيه الجميع نحو البناء ولا مكان فيه لغير العلماء والمتعلمين والمبدعين.

أ.د. عمران محمد القيب

وزير التعليم العالي والبحث العلمي



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لائحة الدراسة والامتحانات لكليات العلوم الصحية
بالجامعات الليبية
2022م



الفصل الأول: أحكام تمهيدية

مادة ((1)) تعريفات

مجلس الكلية: يشكل المجلس العلمي للكلية من عميد الكلية رئيساً وعضوية وكيل الشئون العلمية ورؤساء الأقسام العلمية بالكلية، ويكون مدير مكتب شؤون مجلس الكلية مقرراً للمجلس، وبحضور مدير مكتب الدراسة والامتحانات ومسجل الكلية ومدير مكتب الجودة بالكلية، ولا يحق لهم التصويت على قرارات الكلية.

عميد الكلية: هو الشخص الذي يتولى الإشراف المباشر على سير العمل بالكلية وتصريف أمورها العلمية والإدارية في حدود السياسات التي ترسمها الجامعة.

وكيل الكلية: هو الشخص الذي يتولى الإشراف على البرامج العلمية و التعليمية وذلك بالتنسيق مع رؤساء الأقسام العلمية بالكلية.

رئيس القسم العلمي: هو عضو هيئة تدريس يرأس المجلس العلمي للقسم. **المجلس العلمي للقسم:** يتشكل المجلس العلمي للقسم من رئيس القسم وعضوية جميع أعضاء هيئة التدريس القارين به، ويتم اختيار مقررا من بينهم، ويجوز حضور أي من الأساتذة المتعاونين وذلك عند مناقشة الجانب الذي يخصه فقط ولا يحق له التصويت على قرارات المجلس.

عضو هيئة التدريس: هو كل من يحمل مؤهلاً علمياً عالياً (الماجستير أو الدكتوراه) أو ما يعادلها من الشهادات التي تعترف بها الجهة المختصة بذلك؛ و الذي يؤهله للتدريس بإحدى مؤسسات التعليم العالي في إحدى التخصصات المعتمدة في الكلية ويقوم بعملية التدريس بها.

الطالب: هو الشخص الذي يدرس في هذه الكلية ابتداءً من تاريخ تسجيله في الدراسة حتى زوال هذه الصفة عنه مهما كانت الأسباب.

رقم القيد: رقم تسلسلي يمنح للطالب عند تسجيله في الكلية، يدل على الكلية والعام الجامعي والسنة الدراسية التي بدأ فيها الطالب.

الساعة الدراسية: هي انتظام الطالب في الدراسة لمدة ساعة أسبوعياً.

السنة الميلادية: هي السنة الشمسية وتتألف من اثني عشر شهراً وبالأيام (365) يوماً للسنة البسيطة و(366) يوماً للسنة الكبيسة.

المقرر الدراسي: هو مادة دراسية متخصصة يدرسها الطالب، ويكون لكل مقرر اسم ورمز وتوصيف مفصل لمفرداته يميزه من حيث المحتوى عما سواه من مقررات.

الممتلكات: هي جميع ما تمتلكه الكلية من أصول مادية منقولة وغير منقولة.

مرحلة (التدريب): هي المرحلة الأخيرة من الدراسة ومدتها (ثلاثة أشهر) وهي مرحلة إلزامية حيث يسمح لخريج كليات العلوم الصحية فيها بمزاولة المهنة ويتلقى فيها الطالب التدريب السريري بالعيادات التابعة للكلية أو أحد المستشفيات التعليمية والمراكز الصحية المعتمدة لدى الجامعة ولا تدخل في المعدل التراكمي للطالب عند تخرجه.

طالب متدرب: هو الطالب الذي أنهى الدراسة بالكلية بنجاح ويتلقى التدريب السريري بالعيادات التعليمية والمراكز الصحية المعتمدة.

الكليات المناظرة: هي أي كلية من كليات العلوم الصحية والكليات الطبية الأخرى في أي جامعة ليبية أو غير ليبية معترف بها من قبل وزارة التعليم العالي والبحث العلمي.



الوحدة الدراسية المعتمدة: هي مقدار من العمل ممثل في نتائج التعلم المقصود ويتم التحقق منه من خلال دليل على تحصيل الطلاب وهو معادلة راسخة مؤسسياً لا تقل عن ساعة واحدة من التدريس في الفصل الدراسي أو تعليم أعضاء هيئة التدريس المباشر، وما لا يقل عن ساعتين عملي كل أسبوع.

مادة ((2)) تصنيف المقررات الدراسية

1) تتبع الكلية نظام احتساب الوحدات الدراسية أو نقاط الاعتماد لعدد الساعات المطلوبة في كل سنة دراسية. حيث يبلغ الحد الأقصى- للوحدات الدراسية لجميع السنوات (145) وحدة ، بحيث تعادل كل ساعة تدريس نظري وحدة واحدة (1) بينما تعادل كل ساعتين تدريب عملي أو سريري وحدة واحدة (1).

2) تصنف المقررات الدراسية التي تدرس لنيل درجة البكالوريوس في كليات العلوم الصحية وفق الآتي:

• علوم صحية عامة:

يدرس الطالب في مرحلة القسم العام مقررات العلوم التمهيديّة والتي تشمل العلوم العامة ومقررات العلوم الأساسية خلال السنة الأولى لكل أقسام كليات العلوم الصحية وهي مدرجة في مقررات الأقسام.

• علوم صحية تخصصية:

يدرس الطالب مقررات العلوم التخصصية المعتمدة بكل قسم من أقسام كليات العلوم الصحية وهي مدرجة بكل قسم من الأقسام المعتمدة.

مادة ((3)) متطلبات الحصول على درجة البكالوريوس

درجة البكالوريوس في العلوم الصحية تتطلب دراسة 125- 145 وحدة دراسية معتمدة للحصول على درجة البكالوريوس ويتطلب ذلك دراسة لمدة 4 سنوات استناداً علي نظام السنة الدراسية ويجوز للكليات تعديل الدراسة الي النظام الفصلي حسب لائحة تنظيم التعليم العالي والبحث العلمي رقم (501) لسنة 2010م، بما يتفق مع الوحدات المطلوبة للتخرج، بالإضافة الي ثلاثة أشهر تدريب والذي يعتمد على مسار الدراسة السابق، والنموذج الذي سيتم به تنفيذ الدراسة بكليات العلوم الصحية بصفة نظامية ولا يجوز فيها الإنتساب.

مادة ((4)) التفصيل العام للوحدات الدراسية

يدرس الطالب في القسم المنسب إليه ما بين 125- 145 وحدة دراسية معتمدة من المقررات الدراسية العامة للجامعة والكلية، ويترك تقسيم الوحدات لكل قسم، ويتم تنفيذ ذلك بعد الاعتماد من الجامعة التابع لها الكلية.



مادة ((5)) لغة التدريس

اللغة الانجليزية هي لغة التدريس بكليات العلوم الصحية ويجوز تدريس بعض المقررات الدراسية باللغة العربية إذا دعت الحاجة، وذلك بعد موافقة كل من القسم العلمي المختص ومجلس الكلية.

الفصل الثاني: الأقسام العلمية بالكلية

مادة ((6)) الأقسام العلمية

1- تتكون كليات العلوم الصحية من الأقسام العلمية التالية:

القسم العلمي (البرنامج)	Department (Program)
1. قسم التخدير و العناية الفائقة	1 Department of Anesthesia & Intensive Care
2. قسم المختبرات الطبية	2 Department of Medical Laboratory
3. قسم التغذية العلاجية	3 Department of Therapeutical Nutrition
4. قسم الأشعة التشخيصية والعلاجية	4 Department of Dignostic and Therapeutic Radiology
5. قسم العلاج الطبيعي	5 Department of Physical Therapy
6. قسم الصحة العامة	6 Department of Public Health
7. قسم معامل الأسنان	7 Department of Dental Laboratories
8. قسم الإدارة الصحية	8 Department of Health Administration
9. قسم الوراثة الطبية	9 Department of Medical Genetics

2- يجوز لمجلس الكلية العلمي إلغاء أو دمج أو استحداث أقسام أخرى كلما دعت الحاجة إلى ذلك بعد اعتماده من مجلس الجامعة وفقاً للتشريعات النافذة.

الفصل الثالث: القبول والتسجيل والانتقال

مادة ((7)) قبول الطلبة

يشترط لقبول الطالب بالكلية ما يأتي:

1. أن يكون الطالب حاصلاً الشهادة الثانوية العامة القسم العلمي، وبنسبة لا تقل عن (65%)، ويجوز لمجلس الكلية عند تراحم الطلاب بما يفوق القدرة الاستيعابية للكلية أن يضع نسباً للقبول، تزيد عن النسبة المنصوص عليها في الفقرة السابقة، كما يجوز له أن يرتب أولويات القبول.
2. أن يكون المتقدم للدراسة لائقاً صحياً وخالياً من الأمراض المعدية، وقادراً على متابعة الدروس النظرية والعملية.



3. أن يكون حسن السيرة والسلوك.
4. أن يقوم بدفع الرسوم المقررة.
5. ألا يكون قد تم فصله من أي كلية من الكليات المناظرة أو أي جامعة من الجامعات الليبية أو خارجها لأسباب علمية أو تأديبية.
6. أن يجتاز امتحان القبول بنجاح، في حالة اقتراح مجلس الكلية إجراء امتحان قبول.
7. ألا يكون قد مضى على حصوله على الشهادة الثانوية العامة أكثر من ثلاث سنوات.
8. إذا كان الطالب المتقدم للدراسة من غير الليبيين فيشترط فيه أن يكون مقيماً في دولة ليبيا إقامة رسمية (قانونية) طيلة مدة دراسته، وأن يؤدي الرسوم الدراسية وفق اللوائح والنظم المعمول بها في الجامعات الليبية، دون الإخلال بقواعد المعاملة بالممثل المنصوص عليها في الاتفاقيات الدولية المبرمة بهذا الشأن على ألا تزيد نسبتهم عن 4% من مجموع الطلاب المقبولين وفق شروط القبول.
9. أن يتقدم الطالب بطلب الدراسة خلال الفترة المعلن عنها للقبول والمحددة بتاريخ بدء القبول وانتهائه، ويفتح باب القبول بالكلية في بداية كل عام جامعي، وفي حدود القدرة الاستيعابية للكلية المحددة من مجلس الكلية أو من يمثله، ويقبل الطلاب بالكلية ويقيدون وفق الفئات التالية:
 - أ. طلاب نظاميون: تشمل هذه الفئة جميع الطلاب المتفرغين للدراسة.
 - ب. طلاب وافدون: وهم الطلاب غير الليبيين الذين يتم منحهم مقاعد دراسية، وتنظم أوضاعهم وقبولهم بقرار من إدارة الجامعة أو وزارة التعليم العالي والبحث العلمي.
10. يشترط للدراسة بكلية العلوم الصحية للطلبة الذين اجتازوا المرحلة التمهيدية حصولهم على معدل لا يقل عن 65% ويتم اختيار القسم المناسب له الطالبة حسب الرغبة والقدرة الإستيعابية للأقسام.

مادة ((8)) التسجيل وتجديد القيد وإيقافه

- تُشكل لجنة التسجيل وتجديد القيد في بداية كل عام دراسي، وتختص هذه اللجنة بكل ما يتعلق بسير عملية قبول الطلبة الجدد وتجديد القيد وتنظيمه على الوجه التالي:
1. تنظيم عملية قبول ملفات الطلبة الجدد وصرف أرقام القيود الجديدة لهم حسب التواريخ المعلن عنها في الخطة الدراسية، ووفقاً لشروط القبول المنصوص عليها بالمادة (7) من هذه اللائحة ويكون تجديد القيد برسم يحدد من الجهة المختصة ولا يجوز استرداده.
 2. يتم تنظيم عملية التسجيل وإيقاف القيد حسب التواريخ المعلنة في الخطة الدراسية بالكلية ووفقاً للضوابط المنصوص عليها بهذه اللائحة.
 3. تبدأ إجراءات تجديد القيد مع بداية العام الدراسي وفقاً للخطة الدراسية المعتمدة من مجلس الكلية والنموذج الخاص بذلك، خلال فترة لا تتجاوز أسبوعين، ويعد الطالب منقطعاً بعد هذه المدة ما لم يقدم مبرراً مقبولاً لغيابه في مدة لا تتجاوز الأسبوع السادس من بدء الدراسة.
 4. يجوز للطلاب إيقاف قيده خلال شهر من بداية العام الدراسي، وذلك طيلة فترة دراسته، وينتهي إيقاف القيد تلقائياً بمجرد انتهاء العام الدراسي، وعلى الطالب الشروع في تجديد قيده حال بدء العام الدراسي اللاحق، ولا تحسب فترة إيقاف القيد ضمن فترة الدراسة للطلاب، ويجوز لمجلس الجامعة قبول وقف قيد الطالب بصورة استثنائية لعام دراسي آخر إذا تطلبت ظروفه ذلك ويجوز للطلاب إيقاف قيده بصورة استثنائية أخرى شرط موافقة مجلس الجامعة على ذلك.



مادة ((9)) دليل الطالب

يُعد دليل للطالب بالصورة التي تضمن إمامه بنظام الدراسة والامتحانات ونظام الانتقال من سنة إلى أخرى والأحكام الأساسية للوائح المعمول بها وبصورة خاصة بنظام (الإندار والفصل وإجراءات التحقيق والتأديب) وتعلن الكلية عنه ويوضع في مكان ظاهر معلوم.

مادة ((10)) الانتقال من الكليات المناظرة

يجوز قبول الطلبة المنتقلين من الكليات المناظرة شريطة أن يتقدم بطلب الى عميد الكلية يحيله بعدها العميد الى لجنة المعادلة بالكلية ويتم قرار القبول من عدمه مع قسم التسجيل بالجامعة وفقاً للشروط التالية:

1. أن تتوافر في الطالب شروط القبول المنصوص عليها في المادة (7) من هذه اللائحة.
2. لا يسمح بالانتقال للكلية إلا من كليات العلوم الصحية والكليات الطبية المناظرة فقط لا غير.
3. أن يلتزم الطالب الراغب في الانتقال بتقديم المستندات المطلوبة معتمدة من جهات الاختصاص، على أن تحتوي على المقررات التي درسها، ومفردات هذه المقررات، وما يفيد بأنه قد اجتاز المقررات المطلوب معادلتها.
4. يخضع الطالب المقبول وفقاً لهذه المادة لإجراء معادلة من قبل اللجنة العلمية المختصة بمعادلة المقررات بالكلية، ويجوز للجنة المعادلة أن تطلب مقابلة الطالب، أو أن تجرى له امتحاناً شفهياً أو تحريرياً، ويمكن اتخاذ هذه الإجراءات منفردة أو مجتمعة، ولا يجوز للطالب أن يقوم بالتسجيل في الكلية إلا بعد إتمام إجراءات المعادلة له، وفي جميع الأحوال لا تجوز معادلة أي مقرر دراسي يقل فيه تقدير الطالب المنتقل عن نسبة 60% بالنسبة للكليات المناظرة، وعلى الطالب إعادة دراسة المقرر الدراسي في حالة لم تتم معادلته.
5. يمكن معادلة المقرر الدراسي إذا تطابقت مفرداته مع مفردات مقرر الكلية بنسبة لا تقل عن 75%، شريطة ألا يقل عنه في عدد الساعات الدراسية، مع الأخذ في الاعتبار الجانب العملي من المقرر الدراسي.
6. أن يكون ناجحاً للسنة المنقول إليها.
7. أن يلتزم بقضاء نصف المدة الدراسية على الأقل بالكلية قبل تخرجه.
8. تستبعد كل المقررات التي أنجزها الطالب بتقدير يقل عن (60%).
9. تتم معادلة المقررات الدراسية التي أنجزها الطالب بتقدير لا يقل عن (60%) مع مراعاة أن يكون قد تم معادلة اسبقياتها من المقررات من قبل لجنة المعادلة وبشرط تطابق ما لا يقل عن "75%" من المحتوى العلمي للمقررات المعادلة.
10. أن يدرس الطالب المنتقل المقررات التي لم يسبق له دراستها أو التي لم تتم معادلتها له وذلك وفقاً للبرنامج المطلوب للحصول على الشهادة.

مادة ((11)) لجنة معادلة المقررات الدراسية

يصدر عن عميد الكلية قرار بتشكيل لجنة لمعادلة المقررات الدراسية للطلاب المنتقلين إليها من كليات العلوم الصحية المناظرة، بناءً على عرض من مسجل الكلية بعد التشاور مع الأقسام العلمية وقسم الدراسة والامتحانات، ويجرى البث في طلبات المتقدمين للنقل خلال مدة لا تتجاوز (30) يوماً من تاريخ التقديم، ولا تعتبر نتيجة المعادلة نافذة إلا بعد اعتمادها من قبل عميد الكلية وفي



حال وجدت هذه اللجنة أن طالب الانتقال قد درس وفقاً لأنظمة تعليمية مغايرة لما هو معمول به في الجامعات الليبية توجب عليها إحالة الأمر إلى اللجنة المختصة بمعادلة المؤهلات العلمية بمكتب ضمان الجودة ، ويجوز إلحاق الطالب بالدراسة وفق معادلة أولية وذلك الى حين استكمال إجراءات المعادلة النهائية ، ولا يعد الطالب منتقلاً فعلياً إلا بعد استيفاء كافة الإجراءات المطلوبة.

الفصل الرابع: نظام الدراسة والامتحانات

مادة ((12)) نظام الدراسة

تعتمد كليات العلوم الصحية على نظام العام الدراسي أو الفصل الدراسي، حيث يدرس الطالب خلال كل عام دراسي مجموعة من المقررات الدراسية وفقاً لنظام الساعات المكتسبة، والمدة الزمنية المخصصة لكل عام دراسي لإلقاء المحاضرات تتراوح بين 28 و 34 ساعة أسبوعاً، على حسب الخطة الدراسية للعام الدراسي المعتمدة من مجلس الكلية، ولا تدخل من ضمنها مدة التسجيل ومدة الامتحانات النهائية، وتكون الدراسة بالكلية وفقاً لنظام السنة الدراسية الكاملة على النحو التالي:

1. تحدد بداية ونهاية الدراسة بقرار من وزارة التعليم العالي و البحث العلمي كما يحدد القرار عطلة نصف السنة والامتحانات مع مراعاة الأوضاع الخاصة بالكليات التي تتطلب الدراسة فيها التدريب العملي.
2. يبدأ العام الدراسي عادة في الأول (1) من شهر سبتمبر وينتهي في (31) من شهر يوليو إلا إذا ورد ما يخالف ذلك من وزارة التعليم العالي والبحث العلمي ويشترط لذلك الاتي:
 - أ. تحدد موعد الامتحانات الجزئية من قبل مجلس الكلية خلال العام الدراسي بحيث لا تزيد مدتها عن (3) ثلاثة أسابيع متصلة، وتجاوز اجازة أي طريقة علمية للتقييم في تلك الامتحانات.
 - ب. تبدأ امتحانات الدور الأول بمنتصف شهر مايو وتنتهي في النصف الثاني من شهر يونيو.
 - ت. تبدأ امتحانات الدور الثاني في بداية شهر يوليو وتنتهي بنهايته.
 - ث. يجوز تغيير مواعيد بداية ونهاية العام الدراسي وكذلك الامتحانات بناء على مقترح من الكلية وموافقة مجلس الجامعة بما يتماشى مع اللوائح والقوانين المعمول بها على ان لا تتجاوز مدة الامتحانات مجتمعة عن (8) أسابيع بالسنة الدراسية الواحدة.

مادة ((13)) مدة الدراسة

مدة الدراسة بالكلية لنيل درجة البكالوريوس في كليات العلوم الصحية اربع سنوات دراسية تليها ثلاثة شهور تدريب وتقسم مدة الدراسة على النحو التالي:
المرحلة الأولى (التمهيدية) ومدتها سنة واحدة (يدرس فيها الطالب مواد عامة)
المرحلة الثانية (التخصصية) ومدتها ثلاث سنوات دراسية وتشمل السنة الثانية و الثالثة و الرابعة.
المرحلة التدريبية: وهي مرحلة تدريبية إلزامية و مدتها ثلاثة أشهر كاملة في أحد العيادات أو المستشفيات التعليمية او المراكز الصحية.



مادة ((14)) الشهادات الممنوحة

الشهادة الممنوحة لخريجي الكليات العلوم الصحية هي الدرجة الجامعية "بكالوريوس علوم صحية إختصاصية" حسب التخصص الذي تم دراسته بالكلية.

مادة ((15)) الغياب

على الطالب في كافة مراحل الدراسة الإلتزام بمتابعة المحاضرات النظرية والعملية وأن يقوم عضو هيئة التدريس او من يعاونه من المعيدين برصد الحضور والغياب في كل محاضرة أو معمل أو تدريب سريري وإحالة الكشوفات لقسم الدراسة والإمتحانات بالكلية، وإذا وصلت نسبة تغيب الطالب عن الدراسة (25%) يحرم من دخول الإمتحان النهائي للمقرر المتغيب فيه.

مادة ((16)) ضوابط التسجيل في المقررات الدراسية

1. لا يسمح للطالب بنقل أي مادة بين السنوات الدراسية غير المتتالية.
2. يجوز للطالب نقل مادتين على الأكثر بين السنوات الدراسية المتتالية.
3. يجوز للطالب الدخول للدور الثاني مهما كان عدد المواد التي لم ينجح فيها، وفي حالة نجاحه تحسب له الدرجة المتحصل عليها في الدور الثاني كاملة.
4. يحاسب الطالب في المواد التي يتقدم بها للدور الثاني على المجموع الكلي للمادة بعد احتساب أعمال السنة.
5. يحاسب الطالب في المواد التي يتقدم بها للدور الثاني في جميع المقررات لتلك المواد " نظري وشفهي وعملي أو سريري" حسب الجدول المرفق لتوزيع الدرجات.

مادة ((17)) الساعات الدراسية والوحدات الدراسية المعتمدة

الجداول التالية توضح عدد الساعات الدراسية النظرية والعملية أو السريرية وكذلك عدد الوحدات لكل مقرر دراسي بحسب كل مرحلة وبحسب كل قسم علمي بكليات العلوم الصحية على النحو التالي:
المرحلة الأولى: ويكون دراسته إلزاميا لجميع الأقسام العلمية بكليات العلوم الصحية.

المرحلة الأولى (التمهيدية):

مدتها سنة دراسية جامعية كاملة (فصلين دراسيين) وتحدد المقررات وساعات تدريسها وعدد الوحدات وفقا لدليل توحيد المرحلة التمهيدية للكليات العلمية بالجامعات الليبية المعتمد من قبل السيد معالي وزير التعليم العالي والبحث العلمي بالقرار رقم (893) لسنة 2022م، وهو كالتالي:

فصل الخريف:

رمز المقرر	أسماء المقررات الدراسية		عدد الساعات الأسبوعية	مجموع الوحدات
	باللغة العربية	باللغة الإنجليزية		
				نظام الفصل



	مجموع الساعات بالأسبوع	عملي	نظري				
2	2	-	2	Arabic languages	اللغة العربية 1	AR021	1
2	2	-	2	English languages	اللغة الإنجليزية 1	EL021	2
3	4	2	2	Computer sciences	علم الحاسوب	CS021	3
3	4	2	2	General Botony	علم النبات العام	BO021	4
3	4	2	2	General Physices	الفيزياء العامة	PH021	5
4	4	-	4	Chemistry	الكيمياء	CH021	6
17	20	6	14	المجموع			

فصل الربيع:

مجموع الوحدات	عدد الساعات		أسماء المقررات الدراسية		رمز المقرر		
	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية	باللغة الإنجليزية	باللغة العربية			
نظام الفصل		عملي	نظري				
2	2	-	2	Arabic languages 2	اللغة العربية 2	AR022	1
2	2	-	2	English languages 2	اللغة الإنجليزية 2	EL022	2
3	3	-	3	Biostatistic	الإحصاء الحيوي	BS022	3
3	4	2	2	General Zoology	علم الحيوان العام	ZO022	4
3	4	2	2	Medical Physices	الفيزياء الطبية	PH022	5
3	4	-	4	University skills	مهارات جامعية	US022	6
16	19	4	15	المجموع			

المرحلة الثانية (التخصصية):

مدتها (3) سنوات دراسية جامعية كاملة، يدرس الطالب خلالها المقررات الدراسية الموضحة حسب كل قسم من اقسام كليات العلوم الصحية بالجدول التالية:

1. قسم التخدير والعناية الفائقة:

السنة الثانية:

مجموع الوحدات	عدد الساعات		أسماء المقررات الدراسية		رمز المقرر			
	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية	باللغة الإنجليزية	باللغة العربية				
نظام السنة	نظام الفصل	عملي	نظري					
4	2	2	-	2	Biochemistry	الكيمياء الحيوية	AN200	1
4	2	2	-	2	Physiology	علم وظائف الأعضاء	AN201	2
6	3	4	2	2	Essential General Microbiology	أساسيات الأحياء الدقيقة العامة	AN202	3
6	3	4	2	2	Anatomy	علم التشريح	AN203	4
6	3	4	2	2	Histology	علم الأنسجة	AN204	5
4	2	2	-	2	Pharmacology	علم الأدوية	AN205	6
4	2	2	-	2	Safety	السلامة المهنية	AN206	7
4	2	2	-	2	Medical Terminology	مصطلحات طبية	AN207	8
4	2	2	-	2	Organic Chemistry	الكيمياء العضوية	AN208	9



42	21	24	6	18	المجموع			
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السنة الثالثة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	internal Medicine	الباطنة	AN300	1
6	3	4	2	2	Intensive Care 1	العناية الفائقة 1	AN301	2
6	3	4	2	2	Medical Instruments	المعدات الطبية	AN302	3
4	2	2	-	2	Professional Ethics	اخلاقيات المهنة	AN303	4
4	2	2	-	2	Pathology	علم الامراض	AN304	5
4	2	2	-	2	General Surgery	الجراحة العامة	AN305	6
4	2	2	-	2	Hospital infection	عدوى المستشفيات	AN306	7
4	2	2	-	2	Research Methodology	طرق البحث	AN307	8
36	18	20	4	16	المجموع			

السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Clinical Anaesthesia	التخدير السريري	AN400	1
6	3	4	2	2	Intensive Care2	العناية الفائقة 2	AN401	2
4	2	2	-	2	Obstetrics & Gynaecology	نساء و ولادة	AN402	3
4	2	2	-	2	Paediatric	أطفال	AN403	4
4	2	2	-	2	Project Graduation	بحث تخرج	AN406	5
24	12	14	4	10	المجموع			

2. قسم المختبرات الطبية:

السنة الثانية:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Organic chemistry	كيمياء عضوية	ML200	1
4	2	2	-	2	Biochemistry	الكيمياء الحيوية	ML201	2
6	3	4	2	2	General Microbiology	أحياء دقيقة عامة	ML202	3
4	2	2	-	2	Anatomy & Physiology	علم التشريح ووظائف الأعضاء	ML203	4
4	2	2	-	2	Histology	علم الانسجة	ML204	5
4	2	2	-	2	Analytical Chemistry	الكيمياء التحليلية	ML205	6
4	2	2	-	2	Medical Ethics	الاخلاقيات الطبية	ML206	7
4	2	2	-	2	Laboratories Safety, Medical instruments	السلامة المخبرية والمعدات الطبية	ML207	8
34	17	18	2	16	المجموع			



السنة الثالثة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Clinical Chemistry	الكيمياء الطبية	ML300	1
6	3	4	2	2	Medical Bacteriology	البكتريا الطبية	ML301	2
6	3	4	2	2	Medical Parasitology	الطفيليات الطبية	ML302	3
4	2	2	-	2	Medical virology	الفيروسات الطبية	ML303	4
6	3	4	2	2	Clinical Haematology and Blood Bank	علم ابحاث ومصرف الدم	ML304	5
4	2	2	-	2	Immunology	علم المناعة والامصال	ML305	6
4	2	2	-	2	Molecular biology	الأحياء الجزيئية	ML306	7
4	2	2	-	2	Research Methodology	طرق بحث	ML307	8
4	2	2	-	2	Pathology	علم الامراض	ML308	9
44	22	26	8	18	المجموع			

السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Diagnostic Microbiology	احياء دقيقة تشخيصية	ML400	1
6	3	4	2	2	Medical Mycology	الفطريات الطبية	ML401	2
6	3	4	2	2	Techniques of diseased cells & tissue	تقنيات الخلايا والانسجة المريضة	ML402	3
2	1	2	1	1	Body fluids	سوائل جسم	ML403	4
4	2	4	4	-	Clinical Training	التدريب العملي	ML404	5
4	2	2	-	2	Project Graduation	بحث تخرج	ML405	6
28	14	20	11	9	المجموع			

3. قسم التغذية العلاجية

السنة الثانية:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Basics of Nutrition	أساسيات التغذية	TN200	1
6	3	4	2	2	General Microbiology	الأحياء الدقيقة العامة	TN201	2
4	2	2	-	2	Nutritional Biochemistry	الكيمياء الحيوية التغذوية	TN202	3
4	2	2	-	2	Anatomy and Physiology	علم التشريح ووظائف الاعضاء	TN203	4
6	3	4	2	2	Environmental Pollution and Food Toxicology	التلوث البيئي وسموم الاغذية	TN204	5
4	2	2	-	2	General Pathology	علم الأمراض العام	TN205	6
4	2	2	-	2	Medical Ethics & Communication Skills	مهارات التواصل والأخلاقيات الطبية	TN206	7
4	2	2	-	2	Nutrition Throughout the life Cycle	التغذية خلال مراحل العمر	TN207	8

4	2	2	-	2	Dietary Requirements	الاحتياجات الغذائية	TN208	9
40	20	22	4	18	المجموع			

السنة الثالثة

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Nutrition Assessment & Surveillance	التقييم والمسح التغذوي	TN300	1
6	3	4	2	2	Clinical Nutrition	التغذية السريرية	TN301	2
4	2	2	-	2	Nutrition Education & Counseling	تغذية المجتمع والإرشاد التغذوي	TN302	3
4	2	2	-	2	Nutritional Immunity & Epidemiology	التغذية المناعية والوبائيات	TN303	4
4	2	2	-	2	Nutrition Pharmacology	علم الدواء التغذوي	TN304	5
4	2	2	-	2	Malnutrition Diseases	أمراض سوء التغذية	TN305	6
4	2	2	-	2	Research Methods	طرق البحث	TN306	7
30	15	16	2	14	المجموع			

السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Nutritional Economic	اقتصاديات التغذية	TN400	1
4	2	2	-	2	Sports & Fitness Nutrition	تغذية الرياضة واللياقة	TN401	2
4	2	4	4	-	Clinical Placement in Nutrition	التقييم السريري في التغذية	TN402	3
6	3	4	2	2	Food quality control in Hospitals	ضبط جودة الغذاء في المستشفيات	TN403	4
4	2	2	-	2	Enteral and Parenteral Nutrition	التغذية الوريدية والأنبوبية	TN404	5
4	2	2	-	2	International Health & Nutrition	التغذية والصحة الدولية	TN405	6
4	2	2	-	2	Metabolic Disorders and Nutritional genomic	الاضطرابات الأيضية والتغذية الجينومية	TN406	7
4	2	2	-	2	Project Graduation	بحث تخرج	TN407	8
34	17	20	6	14	المجموع			

4. قسم الأشعة التشخيصية والعلاجية:

السنة الثانية:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Radiological physics	فيزياء الاشعاع	RAD200	1
4	2	2	-	2	Protection Radiation	الوقاية من الاشعاع	RAD201	2
6	3	4	2	2	Radiological Anatomy	التشريح الاشعاعي	RAD202	3



4	2	2	-	2	Radiological pathology	علم الأمراض الإشعاعي	RAD203	4
6	3	4	2	2	Radiological imaging tech 1	تكنولوجيا الفحوصات بالأشعة 1	RAD204	5
4	2	2	-	2	Medical Equipment 1	أجهزة طبية 1	RAD205	6
4	2	2	-	2	Patient care	رعاية المريض	RAD206	7
4	2	2	-	2	Terminology Medical	مصطلحات طبية	RAD207	8
36	18	20	4	16				

السنة الثالثة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Sectional anatomy	التشريح المقطعي	RAD300	1
4	2	2	-	2	Physics of nuclear medicine	فيزياء الطب النووي	RAD301	2
4	2	2	-	2	Research methodology	طرق بحث	RAD302	3
4	2	2	-	2	Medical Equipment2	أجهزة طبية 2	RAD303	4
6	3	4	2	2	Radiological imaging tech 2	تكنولوجيا الفحوصات بالأشعة 2	RAD304	5
6	3	4	2	2	Basic radiological therapy	أساسيات العلاج بالأشعة	RAD305	6
4	2	4	4	-	hospital training	تدريب ميداني بالمستشفى	RAD308	7
34	17	22	10	12	المجموع			

السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	عدد الساعات الأسبوعية	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Radiological imaging tech 3	تكنولوجيا الفحوصات بالأشعة 3	RAD400	1
4	2	2	-	2	Radiological therapy Planning	تخطيط المريض للعلاج بالأشعة	RAD401	2
4	2	2	-	2	Management of radiological departments	إدارة أقسام الأشعة	RAD402	3
6	3	4	2	2	Clinical radiology of emergency	تصوير حالات الطوارئ	RAD403	4
6	3	4	2	2	MRI	التصوير باستخدام الرنين المغناطيسي	RAD404	5
6	3	4	2	2	CT	التصوير المقطعي بالكمبيوتر	RAD405	6
4	2	4	4	-	Hospital training	تدريب ميداني بالمستشفى	RAD406	7
4	2	2	-	2	Graduation Project	مشروع التخرج	RAD407	8
40	20	26	12	14	المجموع			



5. قسم العلاج الطبيعي:
السنة الثانية:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Electrotherapy & therapeutic Massage	العلاج الكهربائي والتدليك العلاجي	PT200	1
4	2	2	-	2	Pharmacology	علم الادوية	PT201	2
4	2	2	-	2	Pathology	علم الامراض	PT202	3
6	3	4	2	2	Therapeutic exercise	التمارين العلاجية	PT203	4
6	3	4	2	2	Anatomy & physiology	علم التشريح ووظائف الأعضاء	PT204	5
6	3	4	2	2	Therapeutic testing & measurement	الاختبارات والقياسات العلاجية	PT205	6
32	16	20	8	12	المجموع			

السنة الثالثة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Physiotherapy for Gynecology & Obstetric	العلاج الطبيعي لأمراض النساء والولادة	PT300	1
6	3	4	2	2	Physiotherapy for plastic surgery & burns	العلاج الطبيعي لمرضى الجراحات التجميلية والحروق	PT301	2
6	3	4	2	2	Cardio-Respiratory & physiotherapy management	العلاج الطبيعي للقلب والجهاز التنفسي	PT302	3
4	2	2	-	2	Research Methodology	طرق البحث	PT303	4
6	3	4	2	2	Physiotherapy for Orthopedic	العلاج الطبيعي لأمراض العظام	PT304	5
6	3	4	2	2	Physiotherapy for Internal medicine	العلاج الطبيعي لأمراض الباطنة	PT305	6
4	2	4	4	-	Hospital Placement & Training 1	تدريب عملي بالمستشفى 1	PT306	7
38	19	26	14	12	المجموع			

السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	عدد الساعات الأسبوعية	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Pain Management	علاج الألم	PT400	1
6	3	4	2	2	Pediatric Pathologies, Surgery & Physiotherapy managements	العلاج الطبيعي لأمراض وجراحة الاطفال	PT401	2
4	2	2	-	2	General Rehabilitation	إعادة التأهيل	PT402	3



6	3	4	2	2	Neurology, Neurosurgery & Physiotherapy managements	العلاج الطبيعى لأمراض وجراحة الأعصاب	PT403	4
4	2	4	4	-	Graduation Project	مشروع التخرج	PT404	5
4	2	4	4	-	Hospital Placement & Training 2	تدريب عملي بالمستشفى 2	PT405	6
30	15	22	14	8	المجموع			

6. قسم الصحة العامة:

السنة الثانية:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			نظري	عملي				
6	3	4	2	2	Microbiology & parasitology	أحياء دقيقة وطفيليات	PH200	1
4	2	2	-	2	Introduction to Public Health	مدخل في علم الصحة العامة	PH201	2
6	3	4	2	2	Anatomy and Physiology	علم التشريح ووظائف الأعضاء	PH202	3
6	3	4	2	2	Histology	علم الأنسجة	PH203	4
4	2	2	-	2	Epidemiology	علم الوبائيات	PH204	5
4	2	2	-	2	Pharmacology & Toxicology	علم الأدوية والسموم	PH205	6
4	2	2	-	2	Immunology	علم المناعة	PH206	7
4	2	2	-	2	Health Legislation and Ethics	تشريعات صحية وأخلاقيات	PH207	8
38	19	22	6	16	المجموع			

السنة الثالثة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			نظري	نظري				
6	3	4	2	2	Medical Microbiology	أحياء دقيقة طبية	PH300	1
4	2	2	-	2	Psychological and social Support	الصحة النفسية والدعم النفسي والاجتماعي	PH301	2
4	2	2	-	2	School Health & Education Health	الصحة المدرسية & التوعية الصحية	PH302	3
4	2	2	-	2	Research & Data Analysis	طرق البحث وتحليل البيانات	PH303	4
4	2	2	-	2	Healthy Food Inspection & Quality control	التفتيش الصحي ومراقبة جودة الغذاء	PH304	5
4	2	2	-	2	Basics of Healthy Nutrition	أساسيات التغذية الصحية	PH305	6
4	2	2	-	2	Chronic Diseases Control	مكافحة الأمراض المزمنة	PH306	7
4	2	2	-	2	Infectious disease	الأمراض المعدية	PH307	8
4	2	2	-	2	Environmental Health	الصحة البيئية	PH308	9
38	19	20	2	18	المجموع			



السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Health Engineering	هندسة صحية	PH400	1
4	2	2	-	2	Therapeutic Nutrition	تغذية علاجية	PH401	2
4	2	2	-	2	Health management	الإدارة والبيانات الصحية	PH402	3
4	2	2	-	2	Management of Health Crises & Occupational Safety	إدارة الأزمات والكوارث الصحية والسلامة المهنية	PH403	4
4	2	2	-	2	Mother and Child Health Care	الرعاية الصحية للأم والطفل	PH404	5
4	2	2	-	2	Public Health Pests Control & Zoonotic Diseases	مكافحة آفات الصحة العامة والأمراض المشتركة	PH405	6
4	2	2	-	2	Hospital Infection Control	مكافحة عدوى المستشفيات	PH406	7
4	2	2	-	2	Health Economics	اقتصاديات صحية	PH407	8
4	2	2	-	2	Graduation Research Project	مشروع التخرج	PH408	9
36	18	18	=	18	المجموع			

7. قسم معامل الأسنان:

السنة الثانية:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Biochemistry	الكيمياء الحيوية	DL200	1
6	3	4	2	2	dental anatomy	علم تشريح الأسنان	DL201	2
4	2	2	-	2	Physiology	علم وظائف الأعضاء	DL202	3
6	3	4	2	2	general microbiology	الأحياء الدقيقة العامة	DL203	4
4	2	2	-	2	Properties of dental materials I	خواص مواد الأسنان I	DL204	5
6	3	4	2	2	Dental Prosthodontics	استعاضة الأسنان الاصطناعية	DL205	6
4	2	2	-	2	organic chemistry	كيمياء عضوية	DL206	7
34	17	20	6	14	المجموع			

السنة الثالثة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Fixed Prosthesis I	تقنية التركيبات الثابتة I	DL300	1
6	3	4	2	2	Orthodontic I	تقنية تقويم الأسنان I	DL301	2
6	3	4	2	2	Complete Denture removable I	استعاضة الأطقم الكاملة I	DL302	3



6	3	4	2	2	Partial Removable Prosthodontics I	استعاضة الأطقم الجزئية I	DL303	4
4	2	2	-	2	Properties of dental materials II	خواص مواد الأسنان II	DL304	5
4	2	2	-	2	Occupational safety and professional ethics	السلامة المهنية وأخلاقيات المهنة	DL305	6
4	2	2	-	2	Research Methodology	طرق البحث	DL306	7
36	18	22	8	14	المجموع			

السنة الرابعة:

مجموع الوحدات	عدد الساعات				أسماء المقررات الدراسية		رمز المقرر		
	نظام السنة	الفصل	عدد الساعات	عدد الساعات الأسبوعية		باللغة الإنجليزية			باللغة العربية
				عملي	نظري				
6	3	4	2	2	Fixed Prosthodontics II	تقنية التركيبات الثابتة 2	DL400	1	
6	3	4	2	2	Orthodontic Technique II	تقنية تقويم الأسنان II	DL401	2	
6	3	4	2	2	Complete Denture removable II	استعاضة الاطقم الكاملة 2	DL402	3	
6	3	4	2	2	Partial Removable Prosth. II	استعاضة الاطقم الجزئية 2	DL403	4	
4	2	2	-	2	Oral Pathology	أمراض الفم	DL404	5	
4	2	4	4	-	Practical Training course	التدريب العملي	DL405	6	
4	2	2	-	2	Graduation research	بحث التخرج	DL406	7	
36	18	24	12	12	المجموع				

8. قسم الادارة الصحية:

السنة الثانية:

مجموع الوحدات	عدد الساعات				أسماء المقررات الدراسية		رمز المقرر		
	نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية			باللغة العربية
				عملي	نظري				
4	2	2	-	2	Anatomy & Physiology	علم التشريح ووظائف الأعضاء	HA201	1	
4	2	2	-	2	Administration Principles	مبادئ الإدارة	HA202	2	
4	2	2	-	2	Principles of Public Health	مدخل للصحة العامة	HA203	3	
4	2	2	-	2	Economics Principles	مبادئ الاقتصاد	HA204	4	
4	2	2	-	2	Accounting Principles	مبادئ المحاسبة	HA205	5	
4	2	2	-	2	Microbiology and Epidemiology	علم الاحياء الدقيقة والأوبئة	HA206		
4	2	2	-	2	Pathology	علم الامراض	HA207	7	
4	2	2	-	2	Management Information Systems	نظم المعلومات الإدارية	HA209	8	
32	16	16	-	16	المجموع				

السنة الثالثة:

مجموع الوحدات	عدد الساعات	أسماء المقررات الدراسية	رمز المقرر
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نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Hospital & Health Services Department	إدارة المستشفيات والخدمات الصحية	HA301	1
4	2	2	-	2	Strategic management	الإدارة الاستراتيجية	HA302	2
4	2	2	-	2	Health Economy	الاقتصاد الصحي	HA303	3
4	2	2	-	2	Financial management	الإدارة المالية	HA304	4
4	2	2	-	2	Organizational Behavior	السلوك التنظيمي	HA305	5
6	3	2	-	2	health systems and Policies	الأنظمة و السياسات الصحية	HA306	6
4	2	2	-	2	Health Marketing	التسويق الصحي	HA307	7
4	2	2	-	2	Methods research	طرق البحث	HA308	8
4	2	2	-	2	Health planning & evaluation	التخطيط و التقييم الصحي	HA309	9
38	19	18	-	18	المجموع			

السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Health Risk Management	إدارة الازمات الصحية	HA401	1
6	3	4	2	2	Health information & Records	نظم المعلومات والسجلات صحية	HA402	2
4	2	2	-	2	Health management Advanced	الإدارة الصحية المتقدمة	HA403	3
4	2	2	-	2	Quality of health care	إدارة جودة الرعاية الصحية	HA404	4
4	2	2	-	2	Health legislation	الفوانين والتشريعات الصحية	HA405	5
4	2	2	-	2	Human Resource Management	إدارة الموارد البشرية	HA406	6
4	2	2	-	2	Health control and Inspection	الرقابة والتفتيش الصحي	HA407	7
4	2	2	-	2	Medical Ethics & Communication Skills	مهارات التواصل والأخلاقيات الطبية	HA408	8
4	2	2	-	2	Graduation Project	مشروع التخرج	HA409	9
38	19	20	2	18	المجموع			

9. قسم الوراثة الطبية:

السنة الثانية:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Organic chemistry	الكيمياء العضوية	MG200	1
6	3	4	2	2	Biochemistry	الكيمياء الحيوية	MG201	2
6	3	4	2	2	General Microbiology	الأحياء الدقيقة العامة	MG202	3
4	2	2	-	2	Anatomy and Physiology	علم التشريح ووظائف الأعضاء	MG203	4
4	2	2	-	2	Histology	علم الأنسجة	MG204	5
4	2	2	-	2	Analytical Chemistry	الكيمياء التحليلية	MG205	6
4	2	2	-	2	Medical Ethics & communication skills	الأخلاقيات الطبية ومهارات التواصل	MG206	7
4	2	2	-	2	Laboratories Safety and Medical instruments	السلامة المخبرية والمعدات الطبية	MG207	8
4	2	2	-	2	Molecular Biology	الأحياء الجزيئية	MG208	9
40	20	22	4	18	المجموع			

السنة الثالثة :

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
6	3	4	2	2	Genetics Diagnosis	التشخيص الوراثي	MG300	1
4	2	2	-	2	Human Genetics	علم الوراثة البشري	MG301	2
4	2	2	-	2	Microscopy	المجهر	MG302	3
4	2	2	-	2	Human Reproduction and Embryology	علم التكاثر والأجنة	MG303	4
6	3	4	2	2	Cells and Tissues Culture	زراعة الأنسجة والخلايا	MG304	5
4	2	2	-	2	Immunology	علم المناعة	MG305	6
4	2	2	-	2	Bioinformatics	المعلومات الحيوية	MG306	7
4	2	2	-	2	Research Methodology	طرق البحث	MG307	8
36	18	20	4	16	المجموع			

السنة الرابعة:

مجموع الوحدات		عدد الساعات			أسماء المقررات الدراسية		رمز المقرر	
نظام السنة	نظام الفصل	مجموع الساعات بالأسبوع	عدد الساعات الأسبوعية		باللغة الإنجليزية	باللغة العربية		
			عملي	نظري				
4	2	2	-	2	Biomedical Genetics	علم الوراثة الكيميوحيوية	MG400	1
6	3	4	2	2	Human Cytogenetics	علم الوراثة الخلوية البشري	MG401	2
4	2	2	-	2	Nutrigenetics & Pharmacogenetics	علم الوراثة الغذائي والدوائي	MG402	3
6	3	4	2	2	Assisted Reproduction Technology	تقنيات الإخصاب المساعد	MG403	4
4	2	2	-	2	Medical biotechnology	التقنيات الحيوية الطبية	MG404	5
4	2	2	-	2	Immunogenic and Tumorigenic	علم الوراثة المناعي والسرطاني	MG405	6
4	2	2	-	2	Project Graduation	بحث التخرج	MG406	7
32	16	18	4	14	المجموع			

مادة ((18)) الامتحانات النصفية (أعمال السنة)

1. يتعين على أستاذ المقرر أن يُعلم الطلبة مع البداية الفعلية للمحاضرات بنظام التقييم الذي سيعتمد عليه توزيع درجات أعمال السنة بحيث يتعرف الطالب على نوع الامتحانات المطلوبة منه.
2. تبدأ الامتحانات النصفية بعد ثلاثة أشهر من بداية الدراسة لمدة ثلاثة أسابيع متواصلة "خلال الدراسة" وبعد ستة أسابيع في النظام الفصلي.
3. يجري امتحان نصف واحد في كل سنة دراسية أو فصل دراسي.
4. يجوز بحسب ما يقرره مجلس القسم العلمي استبدال هذا النظام كلياً أو جزئياً بنظام التقييم المستمر عن طريق البحوث أو أوراق العمل أو التدريب العملي بعد عرضه على مجلس الكلية واعتماد مجلس الجامعة لذلك.



مادة ((19)) الامتحانات النهائية

لا يجوز عقد الامتحانات النهائية الا مرة واحدة في السنة الدراسية الواحدة أو الفصل الدراسي وكذلك امتحانات الدور الثاني مهما كانت الظروف.

مادة ((20)) توزيع الدرجات

- يقوم كل قسم بتوزيع الدرجات المخصصة لكل مادة على الامتحانات النصفية (أعمال السنة والامتحانات النهائية) التحريرية و الشفوية والعملية أو السريرية على النحو التالي:
1. تخصص نسبة (40%) من مجموع الدرجات لكل مقرر "أعمال السنة"، وتخصص نسبة (60%) الباقية لإمتحانات نهاية العام موزعة حسب الجدول المبين.
 2. الامتحانات التحريرية النهائية لا تزيد مدتها عن ثلاث ساعات في كل مقرر من المقررات السابق ذكرها بالإضافة إلى الامتحانات الشفهية والعملية.
 3. إذا رسب الطالب في الامتحان النهائي "الدور الاول" يؤدي امتحان "دور ثان" في المواد التي رسب فيها وتحسب له درجات أعمال السنة .
 4. إذا رسب الطالب في امتحان الدور الثاني يعيد دراسة المقرر للمادة التي رسب فيها كاملاً (أعمال سنة ونظري وعملي وشفوي) ولا يسمح له بالاحتفاظ بأعمال السنة من العام الذي رسب فيه.
 5. يشترط النجاح في المرحلة ما قبل التخصص على أن تحسب درجة النجاح من 50% في كل المواد العامة.
 6. يشترط النجاح في المرحلة التخصصية على أن تحسب درجة النجاح من 60% في كل مواد التخصص.

مادة ((21)) الرسوب والنجاح

- أولاً: يعتبر الطالب راسباً في أي مادة من مقررات المرحلة التخصصية في الحالات الآتية:
1. إذا تحصل على أقل من ستين بالمائة (60%) من مجموع الدرجات المقررة في المادة الواحدة.
 2. إذا تحصل على أقل من خمسة وثلاثين بالمائة (35%) من مجموع درجات الامتحان التحريري مهما كان مجموع درجاته في تلك المادة.
- ثانياً: تحديد التقديرات للمقررات الدراسية والتقدير العام:
1. بالنسبة لمقررات السنة الأولى والثانية والثالثة والرابعة تكون التقديرات حسب النسبة المئوية كالتالي:

ت	النسبة المئوية	التقدير
1	من ((85%)) إلى ((100%))	ممتاز
2	من ((75%)) إلى أقل من ((85%))	جيد جداً
3	من ((65%)) إلى أقل من ((75%))	جيد
4	من ((60%)) إلى أقل من ((65%))	مقبول



ضعيف	من ((35%)) إلى أقل من ((60%))	5
ضعيف جداً	من ((00%)) إلى أقل من ((35%))	6

مادة ((22)) لجنة الامتحانات والمراقبة

يُكلف رئيس لجنة الامتحانات والمراقبة بقرار من مجلس الكلية، مع بداية كل عام دراسي، على أن يقوم رئيس اللجنة بإحالة كشف بأسماء رؤساء وأعضاء اللجان الفرعية والملاحظين لاعتمادها من عميد الكلية.

كما تختص لجنة الامتحانات والمراقبة بكل ما يتعلق بسير الامتحانات وتنظيمها والتي تعقد بنهاية كل عام دراسي وتقوم بالمهام الآتية:

1. مراجعة قوائم الطلبة المسموح لهم بدخول الامتحانات النهائية، وكذلك مراجعة جدول الامتحانات النهائية وإعلانه للطلبة، وإبلاغ أعضاء هيئة التدريس بصورة رسمية به، وذلك بعد اعتماده من عميد الكلية (المشرف العام).
2. تجهيز القاعات الدراسية بما يتماشى مع ضبط الامتحانات النهائية، وتوزيع الطلبة على هذه القاعات في شكل مجموعات لأكثر من مقرر في القاعة الواحدة.
3. الإعلان عن التعليمات التي تراها مناسبة لضبط الامتحانات؛ لتكون معلومة مسبقاً لدى الطلبة.
4. استلام أسئلة الامتحانات النهائية من أعضاء هيئة التدريس بعدد الطلبة قبل موعد الامتحان بوقت كافٍ يقدره رئيس اللجنة.
5. تشكيل لجان الإشراف والمراقبة ووضع برنامج زمني للإشراف متضمناً أسماء أعضاء هيئة التدريس، كما يجوز للجنة الاستعانة بالمعيدين، وكذلك الموظفين من داخل الكلية، وذلك بعد موافقة عميد الكلية.
6. استلام كشف حضور الامتحانات النهائية بأسماء الطلبة في كل مقرر من الدراسة والامتحانات.
7. القيام بإجراءات ضبط حالات الغش والإخلال بسير نظام الامتحانات و المراقبة، وإحالتها إلى عميد الكلية لاتخاذ الإجراء القانوني حيالها.
8. تسليم كراسات الإجابة وكشف حضور الامتحان للطلبة بصورة رسمية إلى كل عضو هيئة تدريس مكلف بتدريس مقرر دراسي، ويقوم بتصحيح كراسات الإجابة بالإضافة إلى نموذج تعبئة النتيجة.
9. استلام أوراق الإجابة المصححة من عضو هيئة التدريس المكلف بتدريس المقرر الدراسي، بالإضافة إلى نموذج تعبئة النتيجة، والذي يحال إلى القسم العلمي المختص وعميد الكلية لاعتماده.
10. إدخال النتائج النهائية للطلبة بمنظومة الدراسة والامتحانات من واقع نماذج النتائج النهائية المعتمدة، ومراجعتها تحت إشراف رئيس قسم الدراسة والامتحانات بالكلية.
11. إعلان النتائج النهائية للعام الدراسي للكلية دفعة واحدة، وفي شكل قوائم تتضمن رقم قيد الطالب، واسمه، ونتائج المقررات التي قام بدراستها خلال العام الدراسي، بعد اعتمادها من عميد الكلية.
12. الإعلان عن موعد ومكان تقديم طلبات مراجعة إجابات الطلاب.
13. إحالة النتائج النهائية (الأصل وصورة ورقية وأخرى إلكترونية) إلى رئيس قسم الدراسة والامتحانات للاحتفاظ بها.

مادة ((23)) المحظورات في الامتحانات

يُحظر على الطالب المتقدم للامتحان ما يلي:



1. اصطحاب أي كتاب أو ورقة ولو كانت خالية من الكتابة، أو اصطحاب أية أدوات عليها كتابة لها علاقة بمادة الامتحان، أو أية وسيلة أخرى يمكن أن تستخدم لنقل المعلومات في الامتحان.
2. الكلام أثناء الامتحانات، أو القيام بأي عمل من شأنه الإخلال بنظام الامتحان وفق التعليمات التي تصدرها لجنة الامتحانات والمراقبة.
3. اصطحاب الهاتف المحمول والساعات الذكية أو غيرها من الأجهزة التي يمكن استخدامها للغش في الامتحان.
4. الحضور بدون بطاقة التعريف الممنوحة من مكتب مسجل الكلية.
5. يُمنع الطالب من دخول قاعة الامتحان بعد مضي نصف ساعة من بداية الامتحان، كما لا يسمح له بالخروج من قاعة الامتحان قبل مضي نصف الزمن المحدد للامتحان عدا الحالات التي تسمح بها لجنة الامتحانات والمراقبة.

مادة ((24)) الغياب عن الامتحانات

- الامتحانات الجزئية : إذا تغيب الطالب عن أداء الامتحانات النصفية (الجزئية) في أي مقرر ترصد له درجة "صفر" في ذلك الامتحان مالم يتقدم بأحد المبررات خلال " أسبوع" من نهاية الامتحان الذي تغيب عنه شرط موافقة قسم الدراسة والامتحانات بالتنسيق مع رئيس القسم المعني ويسمح بإعادة الامتحان النصفية مرة واحدة فقط، والمبررات هي:
- أ. إذا كان الطالب المعني نزيلًا بالمستشفى مع إحضار ما يفيد ذلك مصدقاً ممن يراه مجلس الكلية مناسباً.
 - ب. في حالة وفاة أحد أقارب الطالب من الدرجة الأولى فقط على أن يثبت ذلك بموجب شهادة وفاة رسمية أو صورة منها.
- الامتحانات النهائية : لايجوز إعادة الامتحان النهائي النظري مهما كانت الظروف وفي حالة تم تقديم مبرر عذر الطالب المتغيب وفق الشروط السابقة فيحتفظ بأعمال السنة فقط ويحتسب الدور الثاني للطالب كدور أول مع فقدان فرصة الدور الثاني.

مادة ((25)) مراجعة نتائج الامتحانات النهائية

يحق للطالب الراسب تقديم طلب المراجعة فيما لا يزيد عن مقررین دراسيين في الشق النظري فقط خلال بحر "3" أيام ، و تشكل لجان المراجعة في نهاية كل سنة دراسية تختص بمراجعة إجابات الطلاب المتقدمين بالتظلم على نتائجهم للتأكد من دقة عملية التقييم، وتتكون كل لجنة من ثلاثة أعضاء هيئة تدريس لهم اختصاص في مجال المقرر المقيد للمراجعة وبحضور الطالب المعني، فإذا ثبت صحة ادعاء الطالب يتم تعديل نتيجة المقرر الدراسي مع تقرير حول سبب التعديل، وإذا لم يثبت صحة ادعائه تبقى النتيجة المطعون فيها على حالها، ولا تعتبر نتيجة المراجعة نافذة إلا بعد اعتمادها من القسم العلمي المختص، واعتمادها من عميد الكلية ويجب أن يتم النظر في الطعن والبس فيه على وجه السرعة.

مادة ((26)) إفادة التخرج وكشف الدرجات

يتم اعتماد نتيجة الامتحانات النهائية من قبل لجنة الامتحانات والمراقبة وعميد الكلية، مرفقة بتقرير يوضح نسب نجاح الطلبة ورسوبهم إلى مجلس الكلية، وتعتمد النتائج النهائية للتخرج من قبل رئيس الجامعة.

مادة ((27)) إثبات المستوى العلمي

يحق للطالب المقيد بالكلية الحصول على إفاضة بوضعه الدراسي (إثبات مستوى)، معتمدة من مسجل الكلية، كما يحق له الحصول على كشف بدرجات المقررات المعتمدة التي درسها، من قسم الدراسة والامتحانات وعميد الكلية.

مادة ((28)) الإفاضة وكشف الدرجات

يُمنح الخريج إفاضة وكشف درجات تفيد بتخرجه باللغة العربية، تشمل اسمه وتقديره العام وسنة حصوله على إفاضة البكالوريوس، بحيث يعتمد كشف الدرجات من مسجل الكلية وعميد الكلية، وكذلك إفاضة التخرج تعتمد من المسجل وعميد الكلية.

مادة ((29)) مرتبة الشرف

تمنح مرتبة الشرف للطالب الذي لا يقل تقديره العام عن ممتاز ولا يقل تقديره في أي سنة من السنوات الدراسية عن جيد جداً ويشترط لمنح مرتبة الشرف أيضاً ألا يكون الطالب قد رسب في أي امتحان تقدم له أو صدر ضده قرار تأديبي طيلة مدة دراسته الجامعية.

مادة ((30)) الشهادة الجدارية

يمنح الخريج شهادة جدارية معتمدة من قبل مسجل عام الجامعة وعميد الكلية ورئيس الجامعة.

الفصل الخامس: مرحلة التدريب

مادة ((31)) مدة التدريب

هذه المرحلة مدتها "3" ثلاثة أشهر كاملة وهي مرحلة إلزامية حتي يسمح لخريج كليات العلوم الصحية بمزاولة المهنة ويتلقى فيها الطالب التدريب السريري بالعيادات التابعة للكلية أو أحد المستشفيات التعليمية او المراكز الصحية الحكومية.

مادة ((32)) التدريب

التدريب إلزامي وهو جزء لا يتجزأ من منهج التعليم الطبي المساعد لكليات العلوم الصحية لجميع الطلبة الذين أنهوا السنة النهائية ويشترط له نجاح الطالب في جميع المقررات التي درسها بجميع المراحل ولايسمح له بمزاولة المهنة إلا بعد إنهاء هذه المرحلة.



مادة ((33)) أماكن التدريب

يتم التدريب التكميلي في العيادة التعليمية بالكلية ويجوز للجامعة تحديد غيرها من المؤسسات العلاجية والتشخيصية للقيام بمهمة التدريب بناء علي اقتراح من المجلس العلمي بالكلية إذا توفرت فيها الشروط التي يضعها المجلس العلمي بالكلية.

مادة ((34)) ضوابط التدريب التكميلي

مدة التدريب التكميلي ثلاثة أشهر كاملة ويجوز تمديدها وفق الضوابط الآتية:

- أ. تمدد من قبل القسم المختص بالتدريب إذا تجاوز غياب الطالب المتدرب (20%) من مدة التدريب المقررة بالقسم ويكون التمديد لمدة تساوي مدة الغياب إذا كان سبب الغياب مشروعاً وبضعف المدة إذا كان الغياب غير مشروع .
- ب. تمدد من قبل المجلس العلمي للكلية وذلك بإعادة مدة التدريب إذا تحصل الطالب علي تقدير ضعيف في أي مرحلة من مراحل التدريب علي أن يعيد تدريب ذلك المقرر بنفس المدة.

مادة ((35)) مستوى التدريب

يراعي الابتعاد في توجيه الطلبة للتخصصات الدقيقة والتي تتعدى إمكانية الطالب، وكذلك يجب التأكيد على ضرورة أن يتخلل البرنامج التدريبي للطالب تدريس العلوم الحديثة وأساسيات طرق البحث وعلم الإحصاء الطبي والحاسوب وشبكة المعلومات الدولية من أجل تطوير قدراتهم المهنية والعلمية والوصول الي الاهداف المحددة لهذه المرحلة.

مادة ((36)) تقارير الكفاءة

1. يخضع الطالب المتدرب لنظام تقارير الكفاءة والملاحظة.
2. يتضمن التقرير بيان معلومات عن الطالب من جميع النواحي التي تتصل بقيامه بالمهام المكلف بها من حيث المواظبة والسلوك والعمل الريادي والبحوث. وفقاً للبطاقة المعدة من قبل القسم العلمي المختص.
3. يُعد تقرير عن كل طالب بمعرفة المشرفين ويعبأ في بطاقة الطالب بعد اعتمادها من رؤساء الاقسام العلمية.

مادة ((37)) واجبات الطالب المتدرب

يمارس الطالب المتدرب مهام عمله التدريبي تحت إشراف أعضاء هيئة التدريس بكليات العلوم الصحية أو من يقوم مقامهم ويتولي بوجه خاص:

1. الأعمال المهنية التي يري القسم تكليفه بها.
2. يلزم الطالب أو مجموعة من الطلاب بعمل بحث تحت إشراف أحد أعضاء هيئة التدريس
3. الزيارات الميدانية للمؤسسات العامة كالمراكز الصحية والمدارس وغيرها، لتقديم خدمة للمجتمع وللتوعية في مجالات الصحة العامة.



مادة ((38)) آلية تقييم مدة التدريب

يتولى رئيس القسم وضع آلية للتقييم عن مدة التدريب على أن يشمل ذلك الحضور والالتزام بالعمل داخل الأقسام واستيفاء المتطلبات التي تقررها الأقسام.

مادة ((39)) بطاقات الكفاءة

يتولى منسق التدريب خلال فترات التدريب تدوين الملاحظات عن كل طالب وترصد تقديرات درجة الكفاءة على البطاقات المعدة لذلك في نهاية كل مرحلة تدريبية وتحال البطاقات الي رئيس القسم ومن ثم إلي مسجل الكلية ومنه الي عميد الكلية لاعتمادها.

مادة ((40)) تقدير درجة الكفاءة

تقدر درجة الكفاءة طبقاً لتقديرات النجاح المنصوص عليها في اللائحة الداخلية للكلية وترصد بالبطاقة المعدة لذلك نهاية كل مرحلة من مراحل التدريب.

مادة ((41)) المحظورات على الطالب المتدرب

1. لايجوز للمشرف المسؤول ترك الطالب دون متابعة وتوجيهه في أدائه لعمله أو تكليفه بالتوقيع على الوثائق الطبية بمفرده أو القيام بأي عمل من شأنه أن تترتب عليه أية مسؤولية جنائية.
2. لايجوز للطالب المتدرب القيام بالمحظورات التالية:
 - أ- أن يشترك في دورات بالخارج قبل إتمام فترة التدريب المقررة.
 - ب- أن يجمع بين التدريب ومزاولة أية مهنة أخرى ولو كانت طبية.
 - ت- أن يخالف التعليمات والتوجيهات الصادرة من منسق برنامج التدريب.

مادة ((42)) ساعات التدريب الاسبوعية

يكلف الطالب المتدرب بالعمل طيلة فترة التدريب المقررة مدة "36" ساعة أسبوعياً.

مادة ((43)) الإجازات الطارئة والمرضية للطالب المتدرب

يمنح الطالب المتدرب الإجازة الطارئة لسبب قهري والإجازة المرضية علي أن تعوض مدة الإجازة وفقاً للفقرة (أ) من المادة رقم (34) من هذه اللائحة.

مادة ((44)) مهام منسق برنامج التدريب

1. توزيع الطلبة على الأقسام العلمية المختلفة.
2. الاجتماع بطلبة مرحلة التدريب قبل التحاقهم بالبرنامج لشرح وتوضيح أهمية هذه الفترة التدريبية وكيفية الاستفادة القصوي من البرنامج، كذلك تعريفهم باللائحة التنظيمية لهذه المرحلة وذلك من خلال إصدار دليل مرحلة التدريب.



3. عقد الاجتماعات الدورية بالمنسقين ورؤساء الأقسام لتفعيل دورهم وتعريفهم بمسؤوليتهم تجاه العملية التعليمية من أجل تحقيق أهداف البرنامج التدريبي.
4. استلام التقارير من المشرفين علي التدريب بشكل منتظم.
5. متابعة دورية ودقيقة لعملية التدريب بالاقسام المختلفة عن طريق المشرفين.
6. استلام تقارير الكفاءة بالنماذج المعدة لذلك من المشرفين في الأقسام ورصد الدرجات المتحصل عليها، ثم تحديد التقرير العام لمدة التدريب في الشهادة النهائية، كما يتم رصد التقدير العام في الشهادة العامة دون أن يحتسب ضمن المجموع الكلي لتحديد التقدير العام لدرجة البكالوريوس.
7. تجميع البيانات عن طريق توزيع استبانات دورية على الطلبة المتدربين للتعرف علي أوجه القصور والمشاكل والعراقيل التي تواجههم.
8. استقبال الشكاوى والمشاكل وكذلك الطلبات الخاصة من قبل الطلاب المتدربين والعمل على إيجاد الحلول المناسبة والرد عليها.
9. تنظيم بعض الأنشطة العلمية والاجتماعية للطلبة المتدربين في يوم علمي وكذلك الإشراف علي إصدار نشرة علمية لطلاب هذه المرحلة إن أمكن ذلك.
10. تشجيع الطلبة علي اقتحام تجربة العلوم الصحية من خلال برامج معدة لذلك.

مادة ((45)) مهام المنسقين داخل الأقسام

1. التنسيق مع رؤساء الاقسام العلمية في متابعة التدريب.
2. متابعة وتقييم العملية التدريبية بالاقسام.
3. الاشراف علي كافة الانشطة العلمية والاجتماعية للطلاب المتدربين داخل الاقسام العلمية.
4. تسلم تقارير الكفاءة وتسليمها الي منسق برنامج التدريب.

الفصل السادس: إعادة التنسيب والفصل من الدراسة

مادة ((46)) إعادة التنسيب

- يعاد تنسيب الطالب الي كلية أخرى في الحالات الآتية :
1. إذا تحصل علي تقدير ضعيف جداً في نهاية أي من السنتين الدراسيتين الأوليين.
 2. إذا رسب الطالب سنتين متتاليتين أيأ كان متوسط تقديره العام .
 3. يجوز للطلاب المتعثرين في المراحل النهائية من الدراسة الاستمرار في الدراسة بالكلية نفسها مقابل القيام بدفع الرسوم الدراسية الكاملة وتحدد هذه الرسوم بقرار من الجهات المختصة.

مادة ((47)) الفصل من الدراسة

- يفصل الطالب وينتهي حقه في الدراسة بالكلية في الحالات التالية :
1. إذا انقطع عن الدراسة بدون سبب مشروع مدة سنة دراسية كاملة.
 2. إذا أعيد تنسيبه وتحصل على تقدير عام ضعيف جداً في نهاية السنة الأولى أو الثانية.
 3. إذا أعيد تنسيبه ورسب سنتين دراستين متتاليتين أيأ كان متوسط تقديره العام.



4. إذا قضى- ضعف المدة المقررة بالنسبة للطلاب الذي اختار الاستمرار في الدراسة عن طريق دفع الرسوم الدراسية.

الفصل السابع : المخالفات التأديبية

مادة ((48)) الحفاظ على سمعة الكلية

على الطالب الإلتزام بأداء واجباته العلمية على أحسن وجه، والحفاظ على سمعة الجامعة والكلية، بأن يسلك في تصرفاته مسلكاً يتفق مع وضعه باعتباره طالباً جامعياً، وأن تتفق تصرفاته مع القوانين واللوائح والنظم المعمول بها في مؤسسات التعليم العالي، والأصول والتقاليد الجامعية المستقرة.

مادة ((49)) التأديب

1. يخضع الطالب للتأديب إذا ارتكب فعلاً يشكل مخالفة للقوانين واللوائح والأنظمة المعمول بها بالكلية، سواء تم الفعل داخلها أو في أي مكان من ملحقاتها، وتقع المخالفة بارتكاب فعل محظور قانوناً، ويظل الطالب خاضعاً لأحكام التأديب من تاريخ تسجيله بالدراسة في الكلية إلى زوال هذه الصفة بتخرجه أو إلغاء تسجيله.
2. تُنفذ أحكام التأديب على الطالب سواء أقدم على ارتكاب المخالفة بصفته فاعلاً أو كان شريكاً.

مادة ((50)) ارتكاب المخالفات

لا يجوز للطلاب ارتكاب المخالفات التالية:

1. الاعتداء على أعضاء هيئة التدريس أو المعيدين أو العاملين أو على أحد زملائه الطلاب داخل الكلية أو خارجها.
2. الاعتداء على أموال الكلية أو المرافق التابعة لها.
3. الإخلال بنظام الدراسة والامتحانات بالكلية.
4. ارتكاب أي سلوك منافٍ للأخلاق أو يمس النظام العام والآداب العامة.

مادة ((51)) درجة المخالفات ونوعها

يُعد من المخالفات الاعتداء على أعضاء هيئة التدريس أو العاملين أو الطلاب كأعمال الشجار أو الضرب أو الإيذاء أو السب أو القذف أو التهديد، ويتحقق الاعتداء إذا تم بصورة علنية وبحضور المعتدى عليه سواء ارتكب الفعل شفاهاً أو كتابة أو بالإشارة.

مادة ((52)) المحافظة على المعدات والأدوات

يُعد من مخالفات الاعتداء على أموال الكلية الاستيلاء على المعدات والأدوات التابعة لها أو إتلافها، أو على إحدى المرافق التابعة لها، سواء بجعلها غير صالحة للاستعمال كلياً أو جزئياً، ونفع المخالفة سواء تمت بصورة عمدية أو غير عمدية.



مادة ((53)) أنواع المخالفات بنظام الدراسة والامتحانات

يُعد من مخالفات الإخلال بنظام الدراسة والامتحانات ما يلي:

1. تزوير المحررات الرسمية مثل الشهادات والإفادات والوثائق الرسمية، سواء كانت صادرة عن الكلية أو خارجها، إذا كانت ذات صلة بإجراءات الدراسة.
2. انتحال الشخصية سواءً لتحقيق مصلحة للفاعل أو لغيره، ويعد انتحالاً للشخصية دخول الطالب بدل طالب آخر لأداء الامتحان وتسري العقوبة على الطالبين، وكل من كان شريكاً فيها من الطلاب.
3. إثارة الفوضى أو الشغب وعرقلة سير الدراسة أو الامتحانات بأي صورة كانت.
4. التأثير على الأساتذة والعاملين فيما يخص سير الامتحانات أو التقييم أو النتائج أو غيرها مما يتعلق بشؤون الدراسة والامتحانات.
5. ممارسة أعمال الغش في الامتحانات أو الشروع فيها بأي صورة من الصور، ويعد من قبيل الشروع في الغش إدخال الطالب إلى قاعة الامتحانات أي أوراق أو أدوات أو أجهزة ذات علاقة بالمنهج الدراسي موضوع الامتحان ما لم يكن مرخصاً بإدخالها من قبل لجنة الامتحانات.
6. الامتناع عن الإدلاء بالشهادة أمام لجان التحقيق أو مجالس التأديب المشككة وفقاً لهذه اللائحة.
7. أي مخالفة للقوانين واللوائح والنظم المتعلقة بالتعليم العالي.

مادة ((54)) النظام العام للآداب

يُعد سلوكاً منافياً للأخلاق والنظام العام والآداب العامة الأفعال الآتية:

1. الاعتداء على العرض ولو تم برضى الطرف الآخر، وفي حالة الرضى يُعد الطرف الآخر شريكاً في الفعل.
 2. خدش الحياء العام.
 3. تعاطي أو تناول المخدرات أو المسكرات أو التعامل فيها بأي صورة من الصور.
 4. تداول الأشياء الفاضحة أو توزيعها أو عرضها بأي صورة.
 5. الظهور بمظهر غير لائق داخل الكلية أو إحدى ملحقاتها، أو ارتداء الأزياء المنافية للحشمة أو المبالغة في الزينة، ويشترط في الطلبة والطالبات أن يكون اللباس محتشماً ومتوافقاً مع مبادئ وقيم الدين الإسلامي الحنيف.
 6. كل ما من شأنه الإخلال بالشرف، أو المساس بالآداب العامة والأخلاق وفقاً للتشريعات النافذة.
- وفي جميع الأحوال إذا شكل السلوك جريمة جنائية يتوجب على الكلية إبلاغ الجهات المختصة.

الفصل الثامن: العقوبات التأديبية

مادة ((55)) العقوبات

يعاقب الطالب بالإيقاف عن الدراسة لمدة لا تقل عن سنتين دراسيتين إذا ارتكب أحد الأفعال المنصوص عليها في المادة ((50)) من هذه اللائحة، ويُفصل الطالب من الكلية إذا كان عائداً.



مادة ((56)) الإيقاف عن الدراسة

يعاقب الطالب بالإيقاف عن الدراسة لمدة لا تقل عن سنة دراسية إذا ارتكب أحد الأفعال المنصوص عليها في المادة ((52)) من هذه اللائحة ، وتضاعف العقوبة عند العود، وفي جميع الأحوال لا يجوز عودة الطالب لمواصلة الدراسة إلا إذا دفع قيمة الأضرار التي أحدثها بأموال الجامعة وملحقاتها.

مادة ((57)) العبث بالمعدات والأدوات

يعاقب الطالب عند ارتكابه إحدى المخالفات المنصوص عليها في المادة ((53)) من هذه اللائحة بالعقوبات التالية:

1. الوقف عن الدراسة لمدة لا تقل عن سنة دراسية (فصلين دراسيين) ولا تزيد على سنتين دراستين (أربعة فصول دراسية) كل من ارتكب المخالفات الواردة في الفقرتين ((1،2)) من المادة المذكورة، ويفصل الطالب من الدراسة فصلاً نهائياً عند العود.
2. الحرمان من دخول الامتحانات كلياً أو جزئياً إذا ارتكب المخالفات المحددة في الفقرتين ((3،4)) من المادة المذكورة ، وفي جميع الأحوال يعتبر امتحانه ملغياً في المادة التي ارتكب فيها المخالفة.
3. إلغاء نتيجة امتحان الطالب في دور واحد (فصل دراسي واحد) على الأقل إذا ارتكب المخالفة الوارد بيانها في الفقرة ((5)) من المادة المذكورة، ويجوز لمجلس التأديب إلغاء امتحانه لسنة كاملة (فصلين دراسيين) ويفصل الطالب فصلاً نهائياً عند العود.
4. الحرمان من حقوق الطالب النظامي أو الإيقاف عن الدراسة مدة لا تزيد على سنة دراسية واحدة إذا ارتكب إحدى المخالفات المنصوص عليها في الفقرتين ((6،7)) من المادة المذكورة.

مادة ((58)) صلاحيات لجنة المراقبة

يجوز للجنة المراقبة أو المشرفين على قاعة الامتحان تفتيش الطالب إذا وجدت قرائن تدعو للاشتباه بأن في حيازته أوراقاً أو أدوات أو أجهزة لها علاقة بالمقرر موضوع الامتحان، كما يجوز لهم إخراج الطالب من قاعة الامتحان إذا خالف تعليمات لجنة الامتحان أو بدأ في ارتكاب أعمال الغش، وفي جميع الأحوال يعتبر امتحانه ملغياً.

مادة ((59)) عقوبة الإخلال بالآداب العامة

يعاقب بالوقف عن الدراسة لمدة لا تقل عن سنة دراسية ولا تزيد على سنتين دراستين كل طالب ارتكب أحد الأفعال المنصوص عليها في المادة ((54)) من هذه اللائحة ، ويفصل الطالب نهائياً عند العود، ويتوجب على عميد الكلية عند ارتكاب المخالفة المنصوص عليها في الفقرة ((5)) من المادة المذكورة، استدعاء ولي أمر الطالب ولفت نظره إلى سلوكه وتحذيره من مغبة هذا السلوك، فإذا أصر الطالب على مسلكه توجب الاستمرار في إجراءات التأديب.



مادة ((60)) الحرمان من الامتحانات

يترتب على الإيقاف عن الدراسة حرمان الطالب من التّقدّم إلى الامتحانات طيلة مدة الوقف، ولا يجوز للطالب الانتقال إلى كلية أخرى أثناء مدة سريان العقوبة.

الفصل التاسع: إجراءات التّأديب

مادة ((61)) الإبلاغ عن المخالفات

على كل من علم بوقوع مخالفة للقوانين واللوائح والأنظمة المعمول بها في الكلية أو الجامعة أن يقدم بلاغاً عن هذه المخالفة، يتضمن تقريراً مكتوباً عن الواقعة إلى مجلس إدارة الكلية أو الجامعة.

مادة ((62)) لجان التحقيق

يتعين على عميد الكلية فور إبلاغه عن ارتكاب إحدى المخالفات تكليف لجنة للتحقيق من ثلاثة أعضاء من هيئة التدريس يكون أحدهم مقررًا للجنة.

مادة ((63)) موعد التحقيق

يتم إعلام الطالب بالتحقيق معه قبل موعده بيوم كامل على الأقل، ولا يحتسب اليوم الذي تم فيه إعلامه ويجوز أن يتم التحقيق فوراً في حالات الضرورة والاستعجال.

مادة ((64)) تقرير التحقيق

يقدم المكلف بالتحقيق تقريره بعد الانتهاء من التحقيق، أو عدم حضور الطالب للتحقيق بالرغم من إعلامه به إلى عميد الكلية وإذا ما انتهت لجنة التحقيق إلى الرأي بمعاينة الطالب تأديبياً.

مادة ((65)) مجلس التأديب

يتم تشكيل مجلس للتأديب بقرار من عميد الكلية، ويتكون من ثلاثة أعضاء من هيئة التدريس من ذوي الخبرة والدراية وعضو عن المكتب القانوني بالجامعة ومندوب عن اتحاد الطلبة (الرابطة الطلابية) ويرأس المجلس أقدم أعضاء هيئة التدريس. ويتم إعلام من تقرر إحالته على المجلس المذكور بالموعد الذي ينبغي فيه المثول أمامه وذلك خلال مدة لا تقل عن ثلاثة أيام، ولا يحتسب اليوم الذي تم فيه الإعلان من بينها، وفي حال عدم الحضور يصدر المجلس قراره غيابياً، ويتم إعلام الطالب عن طريق لوحة الإعلانات بالكلية، ولا يجوز لمن اشترك في لجنة التحقيق أن يكون عضواً بمجلس التأديب.



مادة ((66)) قرار مجلس التأديب

يصدر مجلس التأديب قراره بعد سماع أقوال الطالب، ويجوز للمجلس استدعاء الشهود كما يجوز له استدعاء من قام بالتحقيق.

مادة ((67)) لجنة التحقيق

يتولى رئيس الجامعة تشكيل لجان التحقيق أو مجالس التأديب فيما يتعلق بالقضايا التي تخص أكثر من كلية في إطار الجامعة.

مادة ((68)) الإعلان على موعد التحقيق

يتم الإعلان عن موعد التحقيق أو التأديب بلوحة الإعلانات في الكلية المسجل بها الطالب، ويعتبر ذلك قرينة على العلم به.

مادة ((69)) قرار مجلس التأديب

يصدر مجلس التأديب قراراته بأغلبية أصوات الأعضاء، ولا تُعد نافذة إلا بعد اعتمادها من مجلس إدارة الكلية، أما القرارات الصادرة عن المجلس بالفصل فلا تعد نافذة إلا بعد اعتمادها من مجلس إدارة الجامعة، وتبلغ كافة الجامعات والمعاهد العليا داخل ليبيا بالقرار وذلك للحيلولة دون تسجيل الطالب المفصول في أي منها.

مادة ((70)) إعلان قرار مجلس التأديب

يُعلن قرار مجلس التأديب بلوحة الإعلانات في الكلية المسجل بها الطالب، وتودع نسخة ثانية بالملف الشخصي للطالب.

مادة ((71)) انقضاء الدعوى التأديبية

تنقضي الدعوى التأديبية بوفاة الطالب أو انسحابه من الكلية ولا يؤثر انقضاء الدعوى التأديبية أو الحكم فيها على الدعوى الجنائية أو المدنية الناشئة عن الواقعة.

مادة ((72)) الطعن في قرارات المجالس التأديبية

تعتبر قرارات المجالس التأديبية التي تصدر طبقاً لأحكام هذه اللائحة نهائية بعد اعتمادها ولا يجوز الاعتراض عليها إلا بالطعن فيها أمام المحكمة المختصة.



الفصل العاشر: أحكام عامة وختامية

مادة ((73)) تعديل أحكام اللائحة

يجوز تعديل الأحكام الواردة في هذه اللائحة بالإضافة أو الإلغاء وفقاً للتشريعات النافذة.

مادة ((74)) سريان أحكام اللائحة

تسري أحكام هذه اللائحة اعتباراً من تاريخ اعتمادها، وتسري أحكام لائحة تنظيم التعليم العالي الصادرة بقرار اللجنة الشعبية العامة "سابقاً" رقم ((501)) لسنة 2010م على كل ما لم يرد بشأنه نص في هذه اللائحة، ولا يسري أي حكم يخالفها.

يعتمد/

تاريخ الاعتماد:/...../2022 م



الأقسام العلمية بكليات العلوم الصحية

القسم العلمي (البرنامج)	Department (Program)
1. قسم التخدير و العناية الفائقة	1 Department of Anesthesia & Intensive Care
2. قسم المختبرات الطبية	2 Department of Medical Laboratory
3. قسم التغذية العلاجية	3 Department of Therapeutical Nutrition
4. قسم الأشعة التشخيصية والعلاجية	4 Department of Diagnostic and Therapeutic Radiology
5. قسم العلاج الطبيعي	5 Department of Physical Therapy
6. قسم الصحة العامة	6 Department of Public Health
7. قسم معامل الأسنان	7 Department of Dental Laboratories
8. قسم الإدارة الصحية	8 Department of Health Administration
9. قسم الوراثة الطبية	9 Department of Medical Genetics



1. قسم التخذير و العناية الفائقة



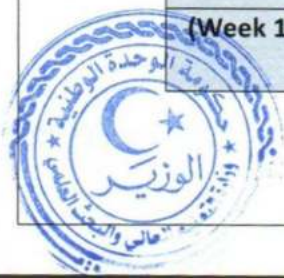
Biochemistry

1	Course name	Biochemistry
2	Course Code	AN200
3	Course type: general/specialty/optional	specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Biology & General chemestary
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	<p>This course will provide students with a fundamental concept in chemistry, such as equilibrium, acid/base chemistry, and thermodynamics into an exploration of biology. The content includes:</p> <p>Applying equilibrium processes to study biochemical reactions as well as cell structure. Studying the structure and function of amino acids and proteins. Analyzing the kinetic parameters of enzymes including different mechanisms of how drugs are used to inhibit enzymes. Understanding and making connections in metabolism.</p>
Textbooks required for this Course:	<p>Complete Steroid Handbook 2004 Edition.</p> <p>Color.Atlas. of Biochemistry,,2nd.Ed.(J..Koolman,,K H..Roehm) (Thieme,2005).</p>
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1 .Identify the basic biomolecules within human body: Carbohydrates, proteins, and lipids. .2 Understand the basic concepts of biochemistry of Carbohydrates, proteins, and lipids: digestion, absorption and metabolism . 3 .Recognize the process of energy conservation and consumption, and the integration of metabolic processes within the body . 4. Recognize the fact that biochemical processes in the human body are adapted to need
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10% • Final Exam: 60%



	<p>A 60 % is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
(Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to Enzymes: Overview classification, nomenclature, coenzymes, intracellular enzymes enzyme specificity, catalytic site,
(Week 2)	<p>Topics to be covered in the session (week)</p> <p>effect of substrate concentration, temperature, pH, on enzyme kinetics,</p> <p>Assignment 2 handed out</p>
(Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • effect of substrate concentration, temperature, pH, on enzyme kinetics, use of enzymes in clinical medicine
(Week 4)	<p>Topics to be covered in the session (week) Biological oxidation:</p> <ul style="list-style-type: none"> • Respiratory chain & ATP production • Cytochrome system
(Week 5)	<p>Topics to be covered in the session (week)</p> <p>Metabolism of carbohydrates:</p> <ul style="list-style-type: none"> • Digestion & absorption of carbohydrates,
(Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • metabolism of fructose, gluconeogenesis
(Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • disorders of carbohydrate metabolism, special reference to diabetes mellitus.
(Week 8)	Midterm Exam
(Weeks 9& 10)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Citric acid cycle, (TCA cycle) • reaction of oxidation of pyruvate, condensation with oxaloacetic acid • formation of citrate, isocitrate & intermediate of TCA cycle.
(Week 11)	<p>Fat metabolism:</p> <ul style="list-style-type: none"> • Metabolism of fatty acids, B-oxidation
(Week 12)	<ul style="list-style-type: none"> • synthesis of fatty acids, phospholipids biosynthesis, sphingo-myelin biosynthesis, TAG (Triacyl glycerol synthesis), lipolysis
(Week 13)	<ul style="list-style-type: none"> • ketone bodies formation
(Week 14)	<ul style="list-style-type: none"> • metabolism, transportation of lipids in human body by lipoproteins & atherosclerosis



(Week 15)	Protein and amino-acid metabolism: •protein digestion and absorption, transamination, deamination
(Week 16)	•urea formation, phenylketonuria, alkaptonuria, albinism, Kwashiorkor and marasmus etc.
(Week 17)	•Porphyrin & haem biosynthesis, bilirubin formation & jaundice
(Week 19)	•Creatinine, histamine, serotonin
(Week 20)	Nucleic acid metabolism: •Cellular distribution of DNA & RNA and their role in protein synthesis
(Week 21)	•Purine and pyrimidine metabolism •uric acid biosynthesis & gout, B alanine excretion
(Week 22)	Hormones: •The endocrine system & types of hormones
(Week 23)	Action of salivary amylase on starch digestion. Free & total acidity of gastric juice sample. Tests for special amino acids in egg & milk.
(Week 24)	Quantitative detection of abnormal constituents presents in urine e.g. sugar/glucose, protein, ketone bodies, bile salts & blood.
(W 25)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Histology

1	Course name	Histology
2	Course Code	AN204
3	Course type: /general/specialty/optional	specialty



4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Biology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the nature of tissues and their structure histology is the microscopic study of tissues and cells used in understanding the pathogenesis and diagnosis of various diseases.
Textbooks required for this Course:		Book Title & ISBN: Basic Histology: Text and Atlas, Sixteenth Edition Additional Resources: BRS Cell Biology and Histology (Board Review Series) 8th Edition Lippincott's Pocket Histology
Course Duration		28 week 28 weeks, 2hours per class
Delivery		Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play. Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Acquire a basic background in histology and to understand the properties of cells and their interactions with one another as components of tissues and organs. • Understand how structure and function correlate at the microscopic level. • Describe the normal structure and function of various cell types, tissues and organs and to differentiate their histological structures from each other through examination. • Acquire basic background on embryology and to understand the first weeks of development. • Describe the growth of the foetus and the maturation of the organ system.
Course Assessments		<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10% • Final Exam: 60% A 60 % is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the



	course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topics Coverage
(Week 1)	Topics to be covered in the session (week) • Nerve Tissue: Development of nerve tissue Neuron
(Week 2)	Topics to be covered in the session (week) • Perikaryon, Dendrites • Nerve Fibers Nerves
(Week 3)	Topics to be covered in the session (week) Autonomic Nervous system Gray matter and white matter
(Week 4)	Muscle Tissue: Skeletal muscle
Session 5 (Week 5)	Topics to be covered in the session (week) Cardiac muscle
(Week 6)	Topics to be covered in the session (week) • Smooth muscle
(Week 7)	Topics to be covered in the session (week) The circulatory system
8 (Week 8)	Midterm Exam
(Week 9 & 10)	Topics to be covered in the session (week) General structure of blood vessels
(Week 11)	Specific structure of blood vessels
(Week 12)	Immune system
(Week 13)	Thymus
(Week 14)	Lymph nodes
(Week 15)	Spleen Tonsils
(Week 16)	General structure of the Digestive tract
(Week 17)	The oral Cavity Tongue, Pharynx, Teeth
(Week 19)	Oesophagus Stomach
(Week 20)	Small intestine Large Intestine
(Week 21)	Appendix



(Week 22)	Gland associated with the Digestive tract : Salivary glands
(Week 23)	Pancreas Liver Structure and functions Gall Bladder
(Week 24)	Respiratory system Nasal cavity Nasopharynx Larynx
(Week 25)	Trachea and Bronchial Tree Pulmonary blood Vessels Epidermis Dermis Hairs
(Week 26 & 27)	Urinary System Kidneys Structure Histophysiology Bladder
(Week 28)	The Neuroendocrine Hypothalamo- Hypophysial system (NHS) Component of the NHS Adrenals, Islets of Langerhans, thyroid, Parathyroids and Pinal Gland.
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised



Organic chemistry

1	Course name	Organic chemistry
2	Course Code	AN208
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	None
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Introduction to organic chemistry: bases of bonding in organic compounds, polar compounds, structural formulas, isomeric phenomena, forms of organic compounds; aliphatic compounds: alkanes, alkenes, alkynes; aromatic compounds; Functional groups: alcohols, ethers, alkyl halides, aldehydes, ketones, carboxylic acids, esters, amides, anhydrides, amines; A complete study in terms of nomenclature, structure, physical properties, methods of preparation and famous reactions.
Textbooks required for this Course:	<ul style="list-style-type: none"> Maitland Jones and Steven A. Fleming, "Organic Chemistry", Fifth Edition, ISBN 0393931498 Maitland Jones, Jr., Henry L. Gingrich, Steven A. Fleming, "Study Guide/Solutions Manual to Accompany Organic Chemistry", Fifth Edition, ISBN 978-0-393-93659-
Course Duration	28 week
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>The students who succeeded in this course will be able to:</p> <ul style="list-style-type: none"> Classify and list the probable problems at medical laboratories Define problems. List and analyze the causes of problems Identify ways to solve the problems Analyze management procedures of organization and coordination. <p>So students will be able to:</p> <ul style="list-style-type: none"> Define chemical bonding. Describe the structure and representation of organic molecules. Describe nomenclature Demonstrate bonding, intermolecular forces, and functional groups Describe nomenclature for alkyl halides, alcohols, alkenes, and



	alkynes <ul style="list-style-type: none"> • Know properties and synthesis • Identify addition reactions • Recognize nucleophilic substitution of alkyl halides. • Demonstrate stereochemistry. • Know free radical reactions • Define aromatic compounds (arenes) • Define reactions of aromatic compounds • Know nmr, mass spectrometry, and infrared (ir) spectroscopy • Describe synthesis and reactions of alcohols • Know ethers and epoxides • Describe enols and enolates • Describe conjugated unsaturated systems. • Recognize synthesis and reactions of β-bicyclic compounds • Know amines • Describe phenols and aryl halides Identify carbohydrates
Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% A 60 % is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to Carbon Compounds and Chemical Bonds • The structural Theory of Organic Chemistry
Session 2 (Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Chemical Bonds: The Octet Rule • Writing Lewis Structure • Hybridization sp^3, sp^2, sp Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Alkanes: Nomenclature • Introduction to Alkanes and cycloalkanes
Session 4 (Week 4)	Topics to be covered in the session (week) •Shapes of Alkanes
Session 5 (Week 5)	Topics to be covered in the session (week) •IUPAC Nomenclature of Alkanes
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Nomenclature of Cycloalkanes
Session 7 (Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Physical Properties of Alkanes and Cycloalkanes



	<ul style="list-style-type: none"> •Chemical Reactions of Alkanes •Synthesis of Alkanes and Cycloalkanes
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Alkenes and Alkynes I: Properties and Synthesis.
Session 10 (Week 10)	<ul style="list-style-type: none"> •The (E)—(Z) System for Designating Alkene Diastereomers •Cycloalkenes
Session 11 (Week 11)	<ul style="list-style-type: none"> •Synthesis of Alkenes via Elimination Reactions
Session 12 (Week 12)	<ul style="list-style-type: none"> •Synthesis of Alkynes by Elimination Reactions •The Acidity of Terminal Alkynes
Session 13 (Week 13)	Alkenes and Alkynes II: Addition Reactions <ul style="list-style-type: none"> •Introduction: Additions to Alkenes
Session 14 (Week 14)	Addition of Hydrogen Halides to Alkenes: Markovnikov's Rule
Session 15 (Week 15)	<ul style="list-style-type: none"> •Stereochemistry of the Ionic Addition to an Alkene
Session 16 (Week 16)	<ul style="list-style-type: none"> •Addition of Sulfuric Acid to Alkenes
Session 17 (Week 17)	Addition of Water to Alkenes: Acid-Catalyzed Hydration
Session 19 (Week 19)	<ul style="list-style-type: none"> •Alcohols from Alkenes Through Oxymercuration-Demercuration: Markovnikov Addition
Session 20 (Week 20)	<ul style="list-style-type: none"> •Alcohols from Alkenes through Hydroboration-Oxidation:
Session 21 (Week 21)	<ul style="list-style-type: none"> •Anti-Markovnikov Syn Hydration •Addition of Bromine and Chlorine to Alkenes•Halohydrin Formation
Session 22 (Week 22)	<ul style="list-style-type: none"> •Addition of Bromine and Chlorine to Alkynes •Addition of Hydrogen Halides to Alkynes •Oxidative Cleavage of Alkynes
Session 23(Week 23)	Alcohols and Ethers <ul style="list-style-type: none"> •Structure and Nomenclature •Physical Properties of Alcohols and Ethers •Synthesis of Alcohols
Session 24 (Week 24)	Aromatic Compounds <ul style="list-style-type: none"> •Nomenclature of Benzene Derivatives •Reactions of Benzene •Halogenation of Benzene •Nitration of Benzene •Sulfonation of Benzene •Friedel-Crafts Alkylation •Friedel-Crafts Acylation



	<ul style="list-style-type: none"> •Limitations of Friedel-Crafts Reactions
Session 25 (Week 25)	<p>Aldehydes and Ketones</p> <ul style="list-style-type: none"> •Nomenclature of Aldehydes and Ketones •Physical Properties •Synthesis of Aldehydes •Synthesis of Ketones •The Addition of Organometallic Reagents: The Reformatsky Reaction •Oxidation of Aldehydes and Ketones •Chemical Analysis of Aldehydes and Ketones
Session 26 (Week 26)	<p>Carboxylic Acids and Their Derivatives.</p> <ul style="list-style-type: none"> •Nomenclature and Physical Properties •Preparation of Carboxylic Acids •Acid Chlorides •Carboxylic Acid Anhydrides •Esters •Amides
Session 27 (Week 27)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

INTENSIVE CARE UNIT 1

1	Course name	INTENSIVE CARE UNIT 1
2	Course Code	AN 301
3	Course type: /general/specialty/optional	specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Physiology



7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:	This course will provide students with a fundamental understanding of the nature of intensive care represents the highest level of patient care and treatment designated for critically ill patients with potentially recoverable life-threatening	
Textbooks required for this Course:	Jean-Louis Vincent, Frederick Moore, Rinaldo Bellomo, John Marini, Textbook of Critical Care, 8 ^{ed} , Elsevier 2022	
Course Duration	28weeks, 4hours per day.	
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.	
Course Objectives:	<p>The students who succeeded in this course will be able to:</p> <ul style="list-style-type: none"> • Describe nursing needs for a patient deteriorating in vital functions • Explain the relationship between nursing needs, nursing care, medical care and treatment. • Analyses and argue for commonly occurring nursing needs and nursing care within intensive care and post-operative care. 	
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>A 60 % is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>	
Content Breakdown	Topics Coverage	
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to ICU 	
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <p>Ventilatory support</p> <p>Shock</p> <ul style="list-style-type: none"> • Assignment 2 handed out 	
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Cardiac arrest 	
Session 4 (Week 4)	<p>Topics to be covered in the session (week) Tracheal intubation "indications" & contraindications</p> <ul style="list-style-type: none"> • Coma • Fluid & electrolytes imbalance 	
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Monitoring in ICU • Basics of ECG 	



Session 6 (Week 6)	Topics to be covered in the session (week) • Cardiopulmonary resuscitation
Session 7 (Week 7)	Topics to be covered in the session (week) • Oxygen therapy • Piped supply of gases & vacuum
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topics to be covered in the session (week) Monitoring in I.C.U. Documentation in I.C.U
Session 15(Week 15)	Sphygmomanometry
Session 16(Week 16)	Recording of vital parameters
Session 17(Week 17)	Intravenous fluids
Session 18(Week 18)	Cannulation (venous)
Session 19(Week 19)	Management of shock
Session 20(Week 20) Session 21(Week 25)	Respiratory Critical Care Management of hematemesis & melena Respiratory Critical Care Management of hematemesis & melena
Session 26(Week 26)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

INTENSIVE CARE UNIT 2

1	Course name	INTENSIVE CARE UNIT 2
2	Course Code	AN401
3	Course type: /general/specialty/optional	specialty
4	Accredited units	6



5	Educational hours	6
6	Pre-requisite requirements	INTENSIVE CARE UNIT 1
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course will provide students with a fundamental understanding of the nature of intensive care represents the highest level of patient care and treatment designated for critically ill patients with potentially recoverable life-threatening
Textbooks required for this Course:	Jean-Louis Vincent, Frederick Moore, Rinaldo Bellomo, John Marini, Textbook of Critical Care, 8 ed, Elsevier 2022
Course Duration	28 weeks.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:	The students who succeeded in this course will be able to: <ul style="list-style-type: none"> • Describe function and safe application of medical devices in the area. • Explain the significance of the impact of intensive care environments' external and internal factors on patients'/family's well-being based on the central concepts: person, health, nursing and environment.
Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% A 60 % is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to ...ICU2 Introduction, type of patients
Session 2 (Week 2)	Topics to be covered in the session (week) <p>Monitoring in ICU</p> Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Monitoring in ICU
Session 4 (Week 4)	Topics to be covered in the session (week) Tracheal intubation "indications" <ul style="list-style-type: none"> • Ventilatory Support
Session 5 (Week 5)	Topics to be covered in the session (week) <p>Shock including cardiac arrest</p>



Session 6 (Week 6)	Topics to be covered in the session (week) • Trauma care
Session 7 (Week 7)	Topics to be covered in the session (week) • Trauma care
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week)
Session 14 (Week 14)	Head injury
Session 15(Week 15)	Head injury
Session 16(Week 16) Session 17(Week 17)	Coma
Session 18(Week 18)	Poisoning- General
Session 19(Week 19)	Poisoning - Specific
Session 20(Week 20)	Near drowning
Session 21(Week 21)	Resuscitation of Burnt patients
Session 22(Week 22)	Chest trauma
Session 23(Week 23)	A R D S Infection Control
Session 24(Week 24)	Hemetemesis / Malena Fluid / Electrolyte imbalance Acid base
Session 26(Week 26)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medicine

1	Course name	Medicine
2	Course Code	AN 300



3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Physiology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description		The course teaches students the importance of medical problems in contexts of health priorities.
Textbooks required for this Course:		The Oxford Textbook of Medicine, John Firth, Christopher Conlon, and Timothy Cox, 5 ed Published: May 2010
Course Duration		28weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<p>At the end of the MD course in Medicine, the student should be able to:</p> <ul style="list-style-type: none"> • Recognize the key importance of medical problems in the context of the health priority of the country; • Practice the specialty of medicine in keeping with the principles of professional ethics; • Identify social, economic, environmental, biological and emotional determinants of adult medicine and know the therapeutic, rehabilitative, preventive and promotion measures to provide holistic care to all patients; • Take detailed history, perform full physical examination and make a clinical diagnosis; • Perform and interpret relevant investigations (Imaging and Laboratory); • Perform and interpret important diagnostic procedures; • Diagnose medical illnesses in adults based on the analysis of history, physical examination and investigative work up; • Plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
Course Assessments		<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>A 60 % is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown		Topics Coverage
Session 1 (Week 1)		<p>Topics to be covered in the session (week)</p> <p>Introduction to Body systems and organs</p>



	Types of diseases Management of diseases
Session 2 (Week 2)	Topics to be covered in the session (week) History taking Physical examination Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) The vital signs Arterial pulse Respiratory rate. Temperature.
Session 4 (Week 4)	Topics to be covered in the session (week) Investigations, normal values commonly encountered
Session 5 (Week 5)	Topics to be covered in the session (week) Cardio-vascular system disorders: Introduction related to anatomy & physiology & function.
Session 6 (Week 6)	Topics to be covered in the session (week) Common symptoms related. The investigations used to detect the related disorder. The specific diseases which include: Ischemic heart disease which includes: Angina pectoris
Session 7 (Week 7)	Topics to be covered in the session (week) Myocardial infarction Cardiogenic shock. Congestive cardiac failure
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week)
Session 14 (Week 14)	• Hypertension:- - Classification - Risk factors
Session 15(Week 15)	Nursing management Drugs in common use
Session 16(Week 16)	Respiratory disorder: Introduction related to anatomy & physiology & function. Common symptoms related. The investigations used to detect the related disorder. The specific diseases related: Pneumonia Tuberculosis. Asthma& COPD
Session 17(Week 17)	• Disorders related to endocrine – (Pancrease) Diabetes mellitus: type, causes, diagnosis, management, complication
Session 18(Week 18)	• Disorders related to haemopoetic system: Introduction related to blood formation & function of the cellular compartment. Common symptoms related to anaemia. The investigations used to detect the types of anaemia. Classification.



	Management.
Session 19(Week 19)	. Disorders related to gastrointestinal system: Introduction related to anatomy & physiology & function. Common symptoms of related disorders.
Session 20(Week 20)	• The investigations used to detect the related disorders. Specific disorders Peptic ulcer & its complications. Diarrhea – acute & chronic
Session 21(Week 21)	Disorders related to urinary tract: Introduction related to anatomy & physiology & function of urinary system. Common symptoms of related disorders.
Session 23(Week 23)	The investigations used to detect the related disorder. Specific disorders: a- Acute & chronic renal failure b- UTI.
Session 24(Week 24)	Disorders of CNS: Introduction related to anatomy & physiology & function of urinary system. Common symptoms of related disorders. The investigations used to detect the related disorder
Session 25(Week 25)	Specific disorders Cerebrovascular accident. Epilepsy.
Session 26(Week 26)	Physical examination including mainly general examination
Session 27(Week 27)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

OBSTETRIC & GYNECOLOGY

1	Course name	OBSTETRIC & GYNECOLOGY
2	Course Code	AN402
3	Course type: /general/specialty/optional	specialty



4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	PHYSIOLOGY
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English-Arabic
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the nature of the science of Obstetric and Gynecology
Textbooks required for this Course:		Book Title & ISBN: Ten Teacher of obstetric and Gynecology Additional Resources: handouts, and web links may be used in this course at the discretion of your instructor. Additional textbooks, Berek & Novak's Gynecology. 15th edition. by Jonathan S. Berek; Emil Novak . rClinical Gynecologic Oncology by Philip J. DiSaia; William T. Creasman; Robert S. Mannell; D. Scott McMeekin
Course Duration		28 weeks, 4 hours per day
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand ...the science of obstetric and gynecology. • Identify different between normal and abnormal cases • Recognize the Emergencies • Identify representations, terms, conditions, and ...treatments • Recognize different between normal and abnormal cases • Write reports about patient to recognize risk factors and be able to counsel patients on risk reduction. • Develop a differential diagnosis and management plan for common gynaecologic problems (dysmenorrhea, dysfunctional uterine bleeding, contraception, infertility, pelvic mass, menopausal symptoms, post menopausal bleeding, pelvic relaxation and urinary incontinence).
Course Assessments		<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown		Topical Coverage



Session 1 (Week 1)	Topics to be covered in the session (week) • Introduction to GYNECOLOGY
Session 2 (Week 2)	Topics to be covered in the session (week) Menstrual cycle Amenorrhea Menorrhagia. Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) Abortion. • Ectopic pregnancy
Session 4 (Week 4)	Topics to be covered in the session (week) • Hydatidiform mole.
Session 5 (Week 5)	Topics to be covered in the session (week) • Carcinoma of the ovary • Carcinoma of the uterus
Session 6 (Week 6)	Topics to be covered in the session (week) - Carcinoma of the cervix - Benign diseases of the vagina
Session 7 (Week 7)	Topics to be covered in the session (week) • Malignant diseases of the vagina
Session 8 (Week 8)	• Benign diseases of the vulva
Session 9 (Week 9)	Topics to be covered in the session (week) • Benign diseases of the ovary
Session 14 (Week 14)	• Benign and malignant diseases of the uterine tubes
Session 15 (Wee 15)	Midterm Exam
Session 16 (Wee 16)	Endometriosis.
Session 17 (Wee17)	Prolapse
Session 18 (Wee18) Session 19(Wee 19)	Sexually transmitted diseases
Session 20 (Week20)	Urinary incontinence and urodynamic
Session 21 (Week 21)	Intersexuality.
Session 25 (Week 25) Session 26 (Week 26)	Dysmenorrhea.
Session 28(W 28)	Final exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Pathology

1	Course name	Pathology
2	Course Code	AN304
3	Course type: /general/specialty/optional	General
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Physiology & histology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course will provide students with a fundamental understanding of the basic principles of Pathogenesis of disease process and the effect that the disease produces on the various organ systems in the body. Inculcate in the young minds the logical approach to diagnosis and interpretation of laboratory investigations and introduce newly discovered genes and molecules that have a profound impact on the pathogenesis of disease.
Textbooks required for this Course:	Book Title & ISBN: Robbins basic pathology 9 th edition Additional Resources: handouts, and web links may be used in this course at the discretion of your instructor Additional textbooks, Textbook of Pathology, 6th Edition
Course Duration	28weeks.



Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • understanding of human disease. diseases discussed in lecture • Identify cellular injury, infection, inflammation and repair, genetic disorders, immune response, circulatory disorders • the student will be able to explain the basic nature of disease processes from the standpoint of causation, epidemiology, natural history, and the structural and functional abnormalities that result. • Identify representations, terms, conditions, and • Recognize clinically different manifest and histopathologically • Construct a good pathological analysis • Develop and utilize the nomenclature used to describe inflammation in the various tissues and organs. • Implement population health, epidemiology principles and the scientific basis of research methods relevant to healthcare
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to Pathology • Types of stains, machines, reagent • Elements of the pathogenesis of diseases,
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • cell injury and adaptation • causes and mechanism • morphology of cell injury
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Lysosome Autophagy and heterophagy • Causes and mechanism
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Intracellular accumulation • Lipid and other intra cellular accumulation
Session 5 (Week 5)	Topics to be covered in the session (week)



	<ul style="list-style-type: none"> cellular adaption of growth and differentiation pathological calcification
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Acute inflammation Vascular changes and cellular events, chemical mediators
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> chronic inflammation cells granulomatous inflammation
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	<p>Topics to be covered in the session (week)</p> <p>Repair:</p>
Session 14 (Week 14)	<ul style="list-style-type: none"> Cell growth Regeneration Wound healing.
Session 15(Week 15)	<p>Disorders of vascular flow & shock</p> <ul style="list-style-type: none"> Oedema Hyperemia or congestion
Session 16(Week 16)	Genetic defects
Session 17(Week 17)	<p>Disorders of immune system :</p> <ul style="list-style-type: none"> Cell of immune system histocompatibility genes (antigens
Session 18(Week 18)	<p>Environmental diseases</p> <ul style="list-style-type: none"> Environmental pollution Injury by chemical agents Injury by physical agents Nutritional diseases
Session 19(Week 19)	<p>The response to infection:</p> <p>Categories of infectious agents</p>
Session 20(Week 20) Session 21(Week 21)	Host barriers to infection & how they break down
Session 23(Week 23) Session 24(Week 24)	How infectious agents cause disease
Session 25(Week 25)	Inflammatory response to infectious agents
Session 26(Week 26)	Final exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<p>The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and</p>



	numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Pediatric

1	Course name	Pediatric
2	Course Code	AN403
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	None
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description: Pediatrics differs from adult medicine in many respects. Treating a child is not like treating a miniature adult. The obvious body size differences are paralleled by maturational changes. The smaller body of an infant or neonate is substantially different physiologically from that of an adult. Congenital defects, genetic variance, and developmental issues are of greater concern to pediatricians than they often are to adult physicians.

Textbooks required for this Course: 1. The Johns Hopkins Hospital, Hughes, H. K., & Kahl, L. K. (Eds.). (2018). The Harriet Lane Handbook (21st ed.). Philadelphia, PA: Elsevier. 2. Kliegman, R. M., St. Geme, J. W., Blum, N. J., Shah, S. S., Tasker, R. C. & Wilson, K. M. (Eds.). (2020). Nelson textbook of pediatrics (21st ed.). Philadelphia, PA: Elsevier. 3. American Academy of Pediatrics & Baker, C. J. (Eds.). (2016). Red book atlas of pediatric infectious diseases (3rd ed.). Elk Grove Village, IL: American Academy of Pediatrics.

Course Duration 28 weeks.

Delivery Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.

Course Objectives: By the end of the course the student will be able to:

- Explain and assess symptoms and treatment of different somatic and psychiatric diseases among children and youths.



	<ul style="list-style-type: none"> • Explain fluid balance and nutrition and their importance for illness in children and adolescents. • Describe pharmacological principles in drug treatment of children and youths - identify possible integrative care suitable for children and youths. • Explain pain physiology at children of different ages; evaluate pain and different methods for pain.
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Vital statistics • Mortality rates in developed and developing countries
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Classification and examination of newborn
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <p>Growth and development</p> <ul style="list-style-type: none"> •Definition •Genetics •Factors affecting •Growth centiles
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Primary health care •child health clinics •school health
Session 5 (Week 5)	<p>Topic 3- Hospital nursing care health care</p> <ul style="list-style-type: none"> •The reaction to the hospitalization •The responsibility of the nurses to be covered in the session (week)
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Vital statistics: •Child population •Child mortality
Session 7 (Week 7)	<p>Topics to be covered in the session :</p> <ul style="list-style-type: none"> • New born nursing •Delivery room nursing •Nutrition •Prematurity nursing



	<ul style="list-style-type: none"> •Congenital malformation • Neonatal jaundice
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session :
Session 10 (Week 10)	<ul style="list-style-type: none"> • G.I.T diseases and nursing •Acute diarrhea nursing care •Failure to thrive nursing care •Constipation nursing care •Procedures of the digestive system
Session 11 (Week 11)	Respiratory diseases nursing <ol style="list-style-type: none"> 1. Acute respiratory infection nursing care 2. VRTI nursing 3. LRTI nursing 4. wheezing child nursing
Session 12 (Week 12)	Cardiac diseases nursing <ul style="list-style-type: none"> •Congenital heart disease nursing care •Rheumatic heart disease nursing care •Heart failure nursing
Session 13 (Week 13)	Infections disease nursing care <ul style="list-style-type: none"> •HIV infections and nursing precautions •Hepatitis nursing care •Vaccinations schedule
Session 14(Week 14)	Accident and poisoning nursing management
Session 15 (Week 15)	The diabetic child nursing
Session 16 (Week 16)	Hematological diseases care <ul style="list-style-type: none"> •The anemic child nursing care •Leukemia nursing
Session 17 (Week 17)	<ul style="list-style-type: none"> •Bleeding diathesis nursing care •Blood transfusion precautions
Session 18 (Week 18)	Renal diseases nursing
Session 19 (Week 19)	The C.N.S nursing
Session 20 (Week 20)	Nursing procedures • Mentally retarded child nursing
Session 21 (Week21)	<ul style="list-style-type: none"> •Infections of nervous system •Epilepsy and its nursing care
Session 26 (Week26)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.



Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

PHARMACOLOGY

1	Course name	Pharmacology
2	Course Code	AN205
3	Course type: /general/specialty/optional	specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	biochemistry & Physiology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the nature of drugs including their origins, history, uses, and properties Pharmacology is the science of how drugs act on biological systems and how the body
Textbooks required for this Course:		Book Title & ISBN: Goodman & Gilman's The Pharmacological Basis of Therapeutics Laurence Brunton 12th Additional Resources: Rang & Dales Pharmacology H P Rang 6 th Additional textbooks, . Golan, D., et. al., eds. Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy. Philadelphia, PA: Lippincott Williams and Wilkins, 2004 Principles of Clinical Pharmacology.
Course Duration		28 week
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.



Course Objectives:	<p>Upon completion of this course, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the general principles of pharmacotherapeutics, pharmacokinetics, pharmacodynamics, and pharmacogenetics/genomics in wellness promotion and illness prevention and treatment. 2. Describe principles of safe administration of medications. 3. Contrast the principles of pharmacotherapeutics across the lifespan including the effects of race, gender and, ethnicity. 4. Investigate technologies and systems used for medication administration. 5. Discuss legal and ethical parameters of medication administration.
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session :</p> <ul style="list-style-type: none"> • Definitions of relevant terms • Sources of drugs • Routs of drug administration • Pharmacokinetics of drugs • Pharmacodynamics of drugs (mechanisms..drug actions..receptors)
Session 2 (Week 2)	<p>Topics to be covered in the session :</p> <ul style="list-style-type: none"> • Autonomic nervous system • Cholinergic system and related drugs • Drugs acting on adrenergic system <p>Neurohumoral transmission in the C.N.S.special emphasis on importance of various neurotransmitters like with GABA, Glutamate, Glycine, serotonin, dopamine.</p>
Session 3 (Week 3)	<p>Topics to be covered in the session :</p> <p>Cardiovascular drugs and diuretics: Drugs used in congestive heart failure</p>
Session 4 (Week 4)	<ul style="list-style-type: none"> • Antianginal drugs • Antihypertensive drugs • Diuretics • Anticoagulants
Session 5 (Week 5)	<p>Topics to be covered in the session :</p> <p>Autacoids and nsaids: •Histamine and histamine antagonists</p>



	<ul style="list-style-type: none"> • Prostaglandins • Analgesics ,antipyretics ,anti-inflammatory drugs
Session 6 (Week 6)	<p>Topics to be covered in the session :</p> <ul style="list-style-type: none"> • Drugs acting on CNS: • Opioid analgesics
Session 7 (Week 7)	<p>Topics to be covered in the session :</p> <p>General and local anesthesia</p> <p>Drugs acting on respiratory system</p>
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Drugs used in bronchial asthma
.....	Drugs acting on GIT.
Session 10 (Week 10)	Drugs used in peptic ulcer.
Session 11 (Week 11)	<p>Drugs acting on endocrine system:</p> <ul style="list-style-type: none"> • Adrenocorticosteroid • Insulin and oral ant diabetic drugs
Session 12 (Week 12)	<p>DRUGS ACTING ON GIT:</p> <p>DRUGS USED IN PEPTIC ULCER</p>
Session 13 (Week 13)	<p>DRUGS ACTING ON ENDOCRINE SYSTEM:</p> <p>A ADRENOCORTICOSTEROID</p>
Session 14 (Week 14)	INSULIN AND ORAL ANT DIABETIC DRUGS
Session 15 (Week 15)	<p>DRUGS USED IN TREATMENT OF INFECTIONS DISEASES:</p> <p>ANTIBACTERIAL AGENTS</p>
Session 16 (Week 16)	ANTIMYOBACTERIAL AGENTS
Session 17 (Week 17)	ANTIVIRAL AGENTS
Session 19 (Week 19)	DEMONSTRATION OF THE STUDIED DRUGS, THEIR DOSAGE FORMS, AVAILABILITY AND THE MOST FAMOUS TRADE NAMES OF THAT ARE AVAILABLE IN LIBYAN PHARMACIES.
Session 20 (Week 20)	MAKING PERIODIC VISITS FOR DIFFERENT DEPARTMENTS OF THE HOSPITAL ALLOWING STUDENTS TO TAKE IDEA ABOUT DRUG THERAPIES FOR COMMON DISEASE THROUGH CHECKING PATIENT'S FILES.
Session 21 (Week 21)	<p>Common diseases include</p> <p>CONGESTIVE HEART FAILURE</p>
Session 22 (Week 22)	HYPERTENSION
Session 23(Week 23)	ANGINA PECTORIS
Session 24 (Week 24)	BRONCHIAL ASTHMA
Session 25 (Week 25)	PEPTIC ULCER
Session 26 (Week 26)	Diabetes mellitus



Session 27 (Week 27)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised

Hospital infection

1	Course name	Hospital infection
2	Course Code	AN306
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Microbiology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of measures to prevent transmission of blood borne pathogens from patient to patient, healthcare worker to patient, and patient to healthcare worker via contaminated injection equipment
Textbooks required for this Course:		Essentials Of Hospital Infection Control January 1, 2019 by SASTRY APURBA S 3 ed
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.



Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> -Be familiar with the microbial world and its relation to human lives. -Know the methods and equipment used to investigate the microbial world. -Have a background about structure, metabolic pathways, and genetics of bacterial cells. -Understand the growth requirements of bacteria and how to control their growth. -Understand physical and chemical factors which affect microorganisms, principles of chemotherapy, microbial genetics, pathogenicity and microbial disease and mechanisms of resistance. -Know the basic principles of bacterial culture techniques and general biochemical tests. -Describe the morphological features of bacteria microscopically and on culture. -Describe different laboratory diagnostic test used
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session :</p> <p>Introduction, Definitions Of Epidemiology, Infection</p>
Session 2 (Week 2)	<p>Topics to be covered in the session :</p> <p>Dissemination, Nosocomial Infections</p>
Session 3 (Week 3)	<p>Topics to be covered in the session :</p> <p>Spectrum of Occurrence of case Incidence & Prevalence</p>
Session 4 (Week 4)	<p>Descriptive epidemiology Time, Place & Person</p>
Session 5 (Week 5)	<p>Topics to be covered in the session :</p> <p>Distribution Characteristics</p>
Session 6 (Week 6)	<p>Topics to be covered in the session :</p> <p>Dynamics of disease transmission Source & Reservoir of infection</p>
Session 7 (Week 7)	<p>Topics to be covered in the session: (Exogenous & Endogenous)</p>



	Modes of transmission
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Susceptible host
Session 10 (Week 10)	Infection Categories
Session 11 (Week 11)	Incidence & nature of endemic & epidemic Nosocomial infections
Session 12 (Week 12)	Urinary tract infections
Session 13 (Week 13)	Lower Respiratory infections
Session 14 (Week 14)	Surgical Wound infections
Session 15 (Week 15)	Infections gastroenteritis
Session 16 (Week 16)	blood stream infections
Session 17 (Week 17)	Infections of Burn Wounds
Session 19 (Week 19)	infections of cardiac & Vascular Prosthesis
Session 20 (Week 20)	Infections of Skeletal Prosthesis Selected viruses of Nosocomial Importance
Session 21 (Week 21)	Human Immunodeficiency Virus infection AIDS Infections due to Infusion therapy
Session 22 (Week 22)	Infection in transplant Recipients Other procedure related infections Iatrogenic or Physician Induced disease
Session 23(Week 23)	Antibiotics & Nosocomial infections Dialysis associated infections Intensive Care Unit
Session 24 (Week 24)	The Inanimate environment Clinical Lab acquired infections The newborn nursery
Session 25 (Week 25)	Infections in Nursing Homes
Session 26 (Week 26)	Concept of legal aspects of Hospital infections Prevention & Control Programmes Components of effective infection control programme
Session 27 (Week 27)	1- Surveillance 2- Control measures
Session 28 (Week 28)	3- Investigation of endemic & Epidemic Nosocomial infections 4- infection control practitioner – concept 5- Hospital Epidemiologist – Concept of. Plasmodium species.
Session 29 (Week 29)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is



	dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised

Research Methodology

1	Course name	Research Methodology
2	Course Code	AN307
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	None
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course focuses on the framework of the research process and to the use of basic statistics in the health field and the interpretation of results for improvement of levels of care an evaluation of action taken
Textbooks required for this Course:		- Fundamental of Research Methodology and Statistics - - Research-Methods-in-Education-sixth-edition
Course Duration		28weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, etc.
Course Objectives:		Upon completion of this course, the students will have reliably demonstrated the ability to: a. Utilize the steps of the research process.



	<p>b. Recognize the importance of statistical analysis in their field of work</p> <p>c. Utilize descriptive statistics to analyze data from Medical Science project.</p> <p>Learning outcomes Knowledge and understanding:</p> <ul style="list-style-type: none"> - Develop awareness on the importance of research in building nursing knowledge and guiding practice. - Discuss the research process and each of its steps. - Describe the characteristics of a researchable problem. - Recognize how to state research aim, questions and hypotheses. - Recognize the different types of research design. - Identify different methods of data collection. - Recognize sampling technique. <p>Cognitive skills (thinking and analysis).</p>
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) Introduction.
Session 2 (Week 2)	Topics to be covered in the session (week) Definition of research Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session The major characteristics of research
Session 4 (Week 4)	Topics to be covered in the session (week) Involvement in health research
Session 5 (Week 5)	Topics to be covered in the session (week) Guidelines for applied health research
Session 6 (Week 6)	Topics to be covered in the session (week) An overview about research steps.
Session 7 (Week 7)	Topics to be covered in the session (week) Purpose of health research. Type of research. Sources of research. Development of research proposal



Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) Steps of research.
Session 10(Week 10)	Step (1) formulating the problem statement. The information of problem statement. Step (2) formulating objectives and research questions. The important of formulating research question. Reasonability of research question. The disability of research question.
Session 14(Week 14)	Step (3) literature review. The preparatory phase. The data collection phase. The Different type of literature review.
Session 16(Week 16)	The source of literature review. Searching for literature review. Step of writing a literature review. Guide lines for making a reference list.
Session 17(Week 17)	Step (4) study types and designs. Exploratory studies. Descriptive studies. Comparative studies. Intervention studies. Define exploratory study. Steps of descriptive study. Types of comparative study. Case –control study.
Session 18(Week 18)	Cohort study. Advantages and disadvantages of each type of study. Intervention study types. Experimental study. Aims of experimental study. Study designs. Qualitative design. Quantitative design..
Session 19(Week 19)	. Step of selection data collection techniques. Methods of data collection techniques. Using available information. Observation. Interviewing. Self-administrated questionnaire. Focus group discussion. Data collection tech. and tools. Advantages and disadvantages of data collection tech. Bias in research.



	<p>Definition of bias.</p> <p>Types of bias.</p> <p>Bias in information collection.</p> <p>Defective in instrument.</p> <p>Observer bias.</p> <p>Bias in selection.</p> <p>Maximizing validity of research.</p>
Session 20(Week 20)	<p>Variables.</p> <p>Numerical variables.</p> <p>Categorical variable.</p> <p>Types of variables.</p> <p>Dependent and independent variables.</p> <p>Confounding variable.</p>
Session 21(Week 21)	<p>Design of questionnaire.</p> <p>Steps of design questionnaire.</p> <p>Step (1) content.</p> <p>Step (2) formulation questions.</p> <p>Step (3) sequence of questions.</p> <p>Format of questionnaire.</p> <p>Translation of questionnaire.</p>
Session 23(Week 23)	<p>Sampling definition.</p> <p>Sampling methods.</p> <p>Qualitative sampling:</p> <p>Convenience sampling.</p> <p>Maximum variation sampling.</p> <p>Snowball sampling.</p> <p>Quantitative sampling methods:</p> <p>Simple random sampling.</p> <p>Systematic sampling.</p> <p>Stratified sampling.</p>
Session 26 (Week 26)	<p>Structure of research paper.</p> <p>Introduction.</p> <p>Method.</p> <p>Result.</p> <p>Discussion.</p> <p>Summary.</p> <p>Title page / cover.</p> <p>Table of contains.</p> <p>Reference style.</p> <p>Presentation skills:</p> <p>What makes a good presentation?</p> <p>Useful phrases for presentation.</p> <p>Steps towards effective presentation.</p> <p>Pronunciation and intonation.</p>



	Delivery skills. Techniques in questioning
Session 27 (Week 27) Session 28 (Week 28)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Microbiology

1	Course name	Microbiology
2	Course Code	AN202
3	Course type: /general/specialty/optional	specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Biology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of Perform accurately different microbiological techniques for microscopic examination, staining, cultivation and identification of organisms.
Textbooks required for this Course:		Book Title & ISBN: Clinical Microbiology Made Ridiculously Simple, 6th Edition.



	<p>Microbiology: An Introduction, 13th Edition.</p> <p>Brock Biology of Microorganisms, 14th Edition Authors: Michael T. Madigan, John M. Martinko, Kelly S. Bender, Daniel H. Buckley, David A. Stahl and Thomas Brock</p>
Course Duration	28 week.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Describe the methods of specimen collection and transporter for bacteriological investigations 2. Uses the light microscopic for examination of bacterial investigates 3. Understanding the techniques used for identification of bacteria 4. Know different biochemical tests important for identification of bacteria 5- Perform accurately different microbiological techniques for microscopic examination, staining, cultivation and identification of organisms
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Introduction to bacterial:</p> <ul style="list-style-type: none"> - General Characteristics of bacteria - Taxonomy - Classification of bacteria - Morphology based on size, shape, arrangement, motility, flagella, spores, capsules, cell wall, plasma membrane, pili, ribosomes. <p>Lab: Collection and transport of different specimens</p>
Session 2 (Week 2) & Session 3 (Week 3)	<p>Normal microbial flora of human body:</p> <ul style="list-style-type: none"> • General attributes and virulence factors of bacteria causing infections: Exotoxins, enterotoxins, endotoxins, neurotoxins • Host Parasite relationships <p>Harmful Microbial Interactions with Human:</p> <ul style="list-style-type: none"> • Entry of pathogens into the host • Mechanism of bacterial pathogenicity, colonization and growth • Host factors for infection and innate resistance to infection <p>Lab: Operation and maintenance of autoclave, hot air oven, distillation plant</p> <p>Disinfection and sterilization:</p>



	<p>1. Definitions</p> <p>2. concepts of disinfection and sterilization</p> <p>3. types and methods</p> <p>disinfection of different hospital environments, Surgical tools and gowns.</p>
<p>Session 4 (Week 4) & Session 5 (Week 5)</p>	<p>Morphology, pathogenicity and laboratory diagnosis of Gram positive organisms- :</p> <p>- Gram positive cocci:</p> <p>Staphylococci (pyogenic cocci and coagulase-negative staphylococcus)</p> <p>a) Morphology, culture, and biological characteristics of <i>Staphylococcus aureus</i></p> <p>b) The virulence factors of <i>Staphylococcus aureus</i> and their effects (including SPA, coagulase, hemolysin, and enterotoxin)</p> <p>c) The diagnostic laboratory tests for <i>Staphylococcus aureus</i> and the principles of controlling <i>Staphylococcus</i> infections</p>
<p>Session 6 (Week 6) & Session 7 (Week 7)</p>	<p>Streptococcus and enterococcus.</p> <p>Streptococcus (classification)</p> <p>a) Morphology, culture, and biological characteristics of Streptococcus</p> <p>b) The virulence factors of group A streptococcus, the pyogenic and non pyogenic infections caused by group A streptococcus, diseases caused by group B, D streptococcus and enterococcus</p> <p>c) The diagnostic laboratory tests for streptococcus and pneumococcus; antistreptolysin O test (ASO test)</p>
Session 8 (Week 8)	<p>Gram positive spore forming bacilli</p> <ul style="list-style-type: none"> • Bacillus
Session 9 (Week 9)	<p>Gram positive spore forming bacilli</p> <ul style="list-style-type: none"> • Clostridium
Session 10 (Week 10)	<p>Gram positive non spore forming bacilli</p> <ul style="list-style-type: none"> • Corynebacterium
Session 11 (Week 11)	<p>- Gram positive non spore forming bacilli</p> <p>Listeria</p>
<p>Session 12 (Week 12) Session 13 (Week 13)</p>	<p>Gram- negative bacteria:</p> <p>Neisseria</p> <p>a) Classification of Neisseria (<i>Neisseria meningitides</i> and <i>Neisseria gonorrhoeae</i>)</p> <p>b) The biological characteristics and pathogenicity of - and immune response to - <i>Neisseria meningitides</i></p> <p>c) Principles of diagnostic laboratory tests, and principles of prevention and treatment of the diseases caused by <i>Neisseria meningitides</i></p> <p>d) <i>Neisseria gonorrhoeae</i> and infection</p>
Session 14 (Week 14)	<p>Midterm Exam</p>



Session 15 (Week 15)	Morphology, pathogenicity and laboratory diagnosis of Enterobacteriaceae: I: - Escherichia coli - Klebsiella
Session 16 (Week 16)	Morphology, pathogenicity and laboratory diagnosis of Proteus - Shigella
Session 17 (Week 17)	- Enterobacter - Citrobacter - Yersinia - Serratia
Session 18 (Week 18)	- Salmonella Emerging bacterial disease
Session 19 (Week 19)	Non-Enterobacteriaceae: - Pseudomonas - Vibrio
Session 20 (Week 20)	Morphology, pathogenicity and laboratory diagnosis of Gram negative bacteria: - Haemophilus
Session 21 (Week 21) Session 22 (Week 22)	- Bordetella - Rickettsia
Session 23 (Week 23) Session 24 (Week 24)	Zoonotic bacteria – Brucella - Babesia - Francisella
Session 25 (Week 25)	Spirochaetes and Syphilis Mycoplasma
Session 26 (Week 26)	Legionella Chlamydial infections
(Week 27) (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure



	relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Anatomy

1	Course name	Anatomy
2	Course Code	AN203
3	Course type: /general/specialty/optional	specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Biology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The introduction to anatomy course will study the shape and structure of the human body and its parts. Content includes: basic anatomy and structure of various organ systems of the body, neurons, cardiovascular, respiratory, digestive and uro-genital systems. The practical part will be devoted to tutorials and studying on anatomical models of different body organs in each system that is mentioned above
Textbooks required for this Course:	Book Title & ISBN: Required: Ross and will son, Anatomy and physiology Richard. S. Snell, Clinical anatomy McMinns, Color Atlas of Human Anatomy Optional: Greys Anatomy Grants Atlas of Anatomy
Course Duration	28 weeks.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand the four basic tissues: epithelial, connective, muscular, and nervous. • Explain the functions' of the skins epidermis, dermis, and subcutaneous layers (Integument



	<ul style="list-style-type: none"> • Identify the bones of the skeleton, their surfaces, parts, articulations and movements or lack of movements at various articulations (Joints • Recognize identify by name, location and action, superficial muscles of the human.
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to Introduction, Body Organization
Session 2 (Week 2)	Topics to be covered in the session (week) <p>Terminology OF Anatomy</p>
Session 3 (Week 3)	Topics to be covered in the session (week) <p>Skeletal System</p>
Session 4 (Week 4)	Topics to be covered in the session (week) Tracheal intubation "indications" Articulations
Session 5 (Week 5)	Topics to be covered in the session (week) <p>Muscular System</p>
Session 6 (Week 6)	Topics to be covered in the session (week) <p>Heart and Circulation</p>
Session 7 (Week 7)	Topics to be covered in the session (week) <p>Circulatory System</p>
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Respiratory System
Session 14 (Week 14)	
Session 15(Week 15)	Central Nervous System
Session 16(Week 16)	Peripheral Nervous System
Session 17(Week 17)	Autonomic Nervous System
Session 18(Week 18)	Skin & Sensory System
Session 19(Week 19)	Urinary System
Session 20(Week 20)	
Session 21(Week 21)	Enduocrine System
Session 22(Week 22)	Fmale Reproductive
Session 23(Week 23)	Male Reproductive



Session 24(Week 24)	Review
Session 25(Week 25)	Review
Session 26(Week 26)	
(Week 27) (Week 28)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Physiology

1	Course name	Physiology
2	Course Code	AN201
3	Course type: /general/specialty/optional	specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Biology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description	The introduction to physiology course will study the function and structure of the human body and its parts. Content includes basic physiology of various organ systems of the body, neurons, cardiovascular, respiratory, digestive and uro-genital systems. The practical part will be devoted to tutorials and studying on anatomical models of different body organs in each system that is mentioned above



Textbooks required for this Course:	<p>Book Title & ISBN: Medical Physiology Eleventh Edition Arthur C. Guyton, M.D. Professor Emeritus Department of Physiology and Biophysics University of Mississippi Medical Center Jackson, Mississippi Deceased John E. Hall, Ph.D. Professor and Chairman Department of Physiology and Biophysics University of Mississippi Medical Center Jackson, Mississippi</p> <p>Additional Resources: Human Physiology by Wikibooks contributo</p>
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Demonstrate an understanding of the physiology and basic regulatory concepts related to the functioning of life processes. 2. studied in the course will include Cell Physiology, Neurophysiology, Endocrinology, Muscle Physiology, and Immunology. 3. Understand the key physiology themes (homeostasis & regulation, structure/function relationships, compartmentation, biological energy transformation, and communication & information flow). 4. Provide or recognize examples of each from the different organ systems.
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <p>Introduction to Introduction to physiology</p> <p>The cell & it is function</p> <p>Transport through the cell membrane</p>
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <p>Nerve</p> <p>Membrane potentials and action potentials</p>
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <p>Muscle</p> <p>Membrane potential</p> <p>Contribution of skeletal muscle</p> <p>Neuromuscular transmission</p> <p>Contraction of smooth muscle</p>
Session 4 (Week 4)	<p>The heart</p> <p>Heart muscle, the heart as a pump</p>



	Rhythmical excitation of the heart The Electrocardiogram
Session 5 (Week 5)	Topics to be covered in the session (week) The circulation Overview of the circulation, medical physics of pressure flow resistance Special functions of the systemic circulation arteries Veins and capillaries Cardiac out put Heart Sounds Capillary fluid exchange interstitial fluid dynamics and lymph flow Local control of blood flow by the tissues Nervous control of the circulation Role of the kidney in long term regulation of arterial Pressure and in hypertension
Session 6 (Week 6)	Topics to be covered in the session (week) The kidney Nephron structure
Session 7 (Week 7)	Topics to be covered in the session (week) Types of nephron Basic theory of nephron function
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) Formation of the urine by the kidney
Session 10 (Week 10)	Composition of glomerular filtrate how to Measure glomerular filtration rate. Control of glomerular filtration rate renal auto regulation . Absorptive capabilities of different tubule segments. Concentration and diluting of the urine. Acid base balance.
Session 11 (Week 11)	Blood cells RBCs, WBCs, platelet Immunity allergy blood groups and transfusion
Session 12 (Week 12)	Homeostasis and blood coagulation Types of anemia
Session 13 (Week 13)	Respiration Pulmonary ventilation
Session 14 (Week 14)	Pulmonary circulation
Session 15 (Week 15)	Transport of oxygen and carbon dioxide between the alveoli and the tissue cells
Session 16 (Week 16)	Regulation of respiration



Session 17 (Week 17)	The gastrointestinal tract Structure of gastrointestinal tract Innervations of GIT
Session 19 (Week 19)	Gastrointestinal hormones Gastrointestinal secretion
Session 20 (Week 20)	Digestion and absorption of proteins Digestion and absorption of lipid
Session 21 (Week 21)	Digestion and absorption of carbohydrates Absorption of salts and water along the GIT
Session 22 (Week 22)	Endocrinology & reproduction Nature of hormone Mechanisms of hormonal action Pituitary hormones
Session 23(Week 23)	Thyroid gland & thyroid hormone The adrenocortical hormone Insulin, glucagon & diabetes mellitus Parathyroid hormone
Session 24 (Week 24)	Male reproductive functions the male sex hormones Female reproductive system
Session 25 (Week 25)	The nervous system Organization of the nervous system Sensory receptors, neural circuits for processing information, tactile and position senses
Session 26 (Week 26)	Neurophysiology of vision The sense of hearing The chemical senses of taste and smell Metabolism and temperature regulation
Session 27 (Week 27)	Metabolism of carbohydrates Lipid and protein metabolism Energetic, metabolic rate and regulation of body temperature
Session 28 (Week 28)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy



	and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised

Medical Terminology

1	Course name	Medical Terminology
2	Course Code	AN207
3	Course type: general/specialty/optional	specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	English
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The study of medical terminology introduces students to the language of medicine. Students will gain an understanding of basic elements, rules of building and analyzing medical words, and medical terms associated with the body as a whole. Utilizing a systems-approach, the student will define, interpret, and pronounce medical terms relating to structure and function, pathology, diagnosis, clinical procedures, oncology, and pharmacology. In addition to medical terms, common abbreviations applicable to each system will be interpreted
Textbooks required for this Course:	Medical Terminology for Health Professions, Spiral bound Version 8 th Edition by Ann Ehrlich (Author), Carol L. Schroeder (Author), Laura Ehrlich (Author), Katrina A. Schroeder, 2008
Course Duration	28weeks.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	At the end of the course students will be able to: Identify the basic structure of medical words, including prefixes, suffixes, roots, combining forms, and plurals. Identify medical terminology as it relates to the anatomy and physiology of the human body. Identify the rules of building medical terms and a connection between the term and its relationship to anatomy and physiology.



Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to ... Advanced English grammar in detail
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <p>Parts of speech & Tenses (Review).</p> <p>Prepositions & Usage.</p> <p>Conjunctions, Sentence-Linkers & their uses.</p> <p>Words often confused</p> <p>Assignment 2 handed out</p>
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <p>Interchange of Active & Passive Voice.</p> <p>Direct & Indirect Speech</p>
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <p>Formation of Compound words (Root words, Prefixes & Suffixes).</p>
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Root words, Prefixes & Suffixes used in the Medical field with special emphasis on body parts & organs
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Specialists & Specialties & formation of their adjectives using suffixes
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <p>Prefixes & Suffixes used to indicate Surgical procedures</p>
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	<p>Topics to be covered in the session (week)</p> <p>Terminology of some common diseases & conditions.</p>
Session 14 (Week 14)	<p>Prefixes and Suffixes used to indicate Instruments; Machines & Techniques used in the diagnostic field.</p>
Session 15(Week 15)	<ul style="list-style-type: none"> •Terms without clear root words. •Commonly used Medical Abbreviations.
Session 16(Week 16)	Comprehensions& composition
Session 17(Week 17)	•Reading Comprehension



Session 18(Week 18)	Selecting & writing short answers.
Session 19(Week 19)	Summarizing.
Session 20(Week 20)	Some commonly used Proverbs of the English Language and their Explanation.
Session 21(Week 21)	Paragraph – writing.
Session 23(Week 23)	General Topics.
Session 24(Week 24)	Topics related to Science & Medicine
Session 24(Week 24)	Some Proverbs & their expansion into a paragraph.
Session 26(Week 26)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Anesthesia Techniques

1	Course name	Anesthesia Techniques
2	Course Code	AN302
3	Course type: general/specialty/optional	specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	None
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

This course will provide students with a fundamental understanding of the medical information, Unauthorized disclosure, retention of



	medical records and other various aspects and the importance of Records and document related to MLC
Textbooks required for this Course:	The Anesthesia Technician & Technologist's Manual: All You Need to Know for Study and Reference 1st Edition by M.D. Woodworth, Glenn (Author), Shannon Sayers-rana (Author), M.D. Kirsch, Jeffrey R. (Author)
Course Duration	28weeks
Delivery	Lecture-based, Group interaction and discussion,
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Explicate the Medico legal aspects of medical records, medicolegal case and type. • Describe the importance of Records and document related to MLC • Ensure confidentiality • Discuss when to release medical information, Unauthorized disclosure, retention of medical records and other various aspects
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction Endotracheal Intubations: Types, indications, contraindications. • Types of Liquefaction of Gases, Cylinders: Critical temp-, differences between O₂ cylinder, N₂O cylinder. • Elements of Anesthesia Machine: Components, functions
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <p>Vaporizers: Types, characteristics.</p> <p>Local Anesthesia:</p> <p>Assignment 2 handed out</p>
Session 3 (Week 3)	<p>Topics to be covered in the session (week) Chemistry, mechanism of action, metabolism, systemic toxicity,</p>
Session 4 (Week 4)	<p>Topics to be covered in the session (week) Factors affecting duration of action.</p> <ul style="list-style-type: none"> • Bupiracaine, Lignocaine



Session 5 (Week 5)	Topics to be covered in the session (week) • Spinal Analgesia
Session 6 (Week 6)	Topics to be covered in the session (week) • Epidural Analgesia: Indications, complications, procedure
Session 7 (Week 7)	Topics to be covered in the session (week) • Respiratory Obstruction (Upper, Lower)
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week)
Session 14 (Week 14)	• Pain Relief Labour
Session 15(Week 15)	Disorders of vascular flow & shock • Anatomy of n.supply of + genital system, how to qlleriale pain
Session 16(Week 16)	Positioning During Anesthesia: Lazards, precantions
Session 17(Week 17)	Pediatric Anesthesia:
Session 18(Week 18)	• Anatomical and physiological differences between pediatric and adult respiratory tract, demonstration of Ayre's T-piece.
Session 19(Week 19)	• Demonstration of different types of endotracheal tubes (ordinary , L-shaped , armoured , polar , Ring Adair Elwyn , laser resistant , double lumen endo-broncheal tube)
Session 20(Week 20)	• Demonstration of spinal needle and epidural (Touhy) needle.
Session 21(Week 21)	Demonstration of anaesthesia machine (flowmeter , flow control valve , O ₂ flush valve , vaporizer , magill attachment)
Session 23(Week 23)	Demonstration of some intubation aids (magill forceps , naso-pharyngeal airway , oro-pharyngeal airway , satellite , laryngoscope)
Session 26(Week 26)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reEasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



CLINICAL ANESTHESIA

1	Course name	CLINICAL ANESTHESIA
2	Course Code	AN400
3	Course type: general/specialty/optional	specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Human Anatomy - Anesthesia Technology Clinical Physiology
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the detailed knowledge in Blood & blood products transfusion, detailed knowledge in Monitoring and the basic knowledge in Anaesthesia for various specialty and the detailed knowledge in Procedures in anaesthesiology.
Textbooks required for this Course:		Book Title & ISBN: Practice of Anaesthesiology – Wylie – Churchill Davidson. 2. General Anaesthesiology – Gray, Nunn, Utting. 3. Anaesthesia- Two Volume – Ronald D.Miller. 4. Anatomy for Anaesthetist – Harold Willis. 5. Understanding Anaesthesia Equipments – Dorsh & Dorsh
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: Perform a thorough history and physical. Recognize patient comorbidities and how they relate to the anesthetic care of the patient. Aware of indications for further patient testing or need for further optimization prior to surgery. Perform a thorough airway exam. Aware of anesthetic options and will be able to formulate a basic anesthetic care plan.
Course Assessments		<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are</p>



	encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to Anaesthesia and different types of anaesthesia • Types of Elements.
Session 2 (Week 2)	Topics to be covered in the session (week) <p>Introduction, History</p> <ul style="list-style-type: none"> • -responsibility of anesthesiologist Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Principles and Practice of Anaesthesiology including pre, per and post operative care.
Session 4 (Week 4)	Topics to be covered in the session (week) <p>Preanesthetic examination Preanesthetic medication</p>
Session 5 (Week 5)	Topics to be covered in the session (week) Stages of anesthesia
Session 6 (Week 6)	Topics to be covered in the session (week) . Monitoring of patient under anesthesia
Session 7 (Week 7)	Topics to be covered in the session (week) Types of anesthesia "General
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week)
Session 10 (Week 10)	Drugs used to supplement general anesthesia Intra operative fluid therapy
Session 11 (Week 11)	Different methods of Anaesthetic Techniques.
Session 12 (Week 12)	Regional anaesthesia including, spinal, epidural and caudal etc
Session 13 (Week 13)	Local anaesthesia including nerve blocks, management of chronic pain.
Session 14 (Week 14)	Blood transfusion – Fluid and electrolyte balance.
Session 15 (Week 15)	Fires and explosion.
Session 16 (Week 16)	Oxygen therapy and Management of both acute and chronic respiratory insufficiencies, and ventilator commitments in I.C.U.
Session 17 (Week 17)	Anesthesia in unprepared patient
Session 19 (Week 19)	Post anesthesia complications
Session 20 (Week 20)	Recovery room
Session 21 (Week 21)	Regional anesthesia "spinal " -Epidural,, caudal, nerve block
Session 22 (Week 22)	Critical care Anaesthesiology



Session 23(Week 23)	Anaesthesia in abnormal environments like high attitude anaesthesia etc. Complication in Anaesthesiology and their management both per and post operatively
Session 24 (Week 24)	Pre anesthetic checkup
Session 25 (Week 25)	Preparation of O.T. for general anesthesia
Session 26 (Week 26)	Reviw
Session 27 (Week 27)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reEasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Surgery

1	Course name	Surgery
2	Course Code	AN305
3	Course type: general/specialty/optional	specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Anatomy
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the General Surgery requires the generic and specialty knowledge, clinical and technical skills and behaviours to manage patients presenting with a wide range of emergency general surgery conditions and elective conditions in the generality of General Surgery.



Textbooks required for this Course:	Textbook of Surgery, 3rd Edition, by Shaik Zaheer Ahmed, Medicine And Surgery: A Concise Textbook August 2005, Edition: 1, Publisher: Wiley-Blackwell, Authors: Giles Simon Kendall and Kin Yee Shiu
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand common surgical problems <p>For each presenting symptom, condition, or disease state, the student should be expected to know:</p> <p>Anatomy</p> <p>Pathophysiology</p> <p>Common associated symptoms</p> <p>Positive physical findings</p> <p>Differential diagnosis</p> <p>Treatment</p> <p>medical/surgical alternatives</p> <p>when treated medically, indications for surgical intervention</p> <p>risk factor assessment</p> <ul style="list-style-type: none"> • Identify pre- and post-operative management <p>complications: recognition and treatment Adjuvant therapies – indications and outcome</p>
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to surgery • Types of preparations • Elements of Operative
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Hemorrhage, • chest injuries • head trauma <p>Assignment 2 handed out</p>
Session 3 (Week 3)	Topics to be covered in the session (week)



	<ul style="list-style-type: none"> • post operative-nursing • Assessment of respiratory system complication & management • Nutrition • Bowel elimination
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Clinical history of surgical part with clinical examination • Administration of drugs. • Wound drain care • Sutures, suturing, removal, complication. • Isolation. • Tracheostomy care. • Gastric aspiration. • Enteral feeding types, complications. • Gastric lavage. • Parenteral nutrition. • Urinary catheterization. • Rectal examination & enema • Flatus tube. • Stoma care. • Skin, nail, mouth care.
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ol style="list-style-type: none"> 1- Shock – blood loss and fluid balance. 2- Burns, types, effect, complications, management. 3- Wounds, types, healing, suture, complication of healing. <p>Inflammation and cross infection, types, spread, complications, treatment, surgical treatment of abscess</p>
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Acute abdomen – symptoms, signs, investigation, causes and management • Appendix, acute appendicitis, pathology, types, clinical features, treatment, complications. <p>Disorders of stomach and duodenum: peptic ulcer.</p>
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Disorders of rectum & anus, anatomy, sign & symptoms, investigations, types, hemorrhoids, abscess, fistula.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	<p>Topics to be covered in the session (week) Appendix, acute appendicitis, pathology, types, clinical features, treatment, complications</p>
Session 10 (Week 10)	
Session 11 (Week 11)	Disorders of stomach and duodenum: peptic ulcer



Session 12 (Week 12)	Diseases of gall bladder
Session 13 (Week 13)	Gallstone and cholecystitis, & obstructive jaundice, anatomy, clinical features, investigations, treatment and complication. Portal hypertension. Causes, investigations, complications, management
Session 14 (Week 14)	General Surgery (practical)
Session 15 (Week 15)	History taking
Session 16 (Week 16)	History taking
Session 17 (Week 17)	Measurement of blood pressure, pulse, temperature and respiration
Session 19 (Week 19)	Analysis of pain
Session 20 (Week 20)	Preparation of patient for O.T
Session 21 (Week 21)	Dressings
Session 22 (Week 22)	I.V. access
Session 23 (Week 23)	Bowl preparation
Session 24 (Week 24)	Wounds and burns
Session 25 (Week 25)	Post operative care
Session 26 (Week 26)	Demonstration of different surgical conditions
Session 27 (Week 27)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible.



Safety Measure

1	Course name	Safety Measures
2	Course Code	AN206
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	None
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description		This course will explore the introductory course in laboratory chemical safety is required for all entering chemistry graduate students. Topics to be covered include laboratory emergencies, chemical hazards, lab inspections and compliance, managing and working with chemicals, waste handling, case studies of university accidents, laboratory equipment, biosafety, radiation, and animals, and microfabrication and nanomaterials.
Textbooks required for this Course:		- Sibel Uzun, Fatih Özçelik, Laboratuvar Güvenliği El Kitabı, Tüketici Güvenliği Ve Halk Sağlığı Laboratuvarları Dairesi Başkanlığı, 2017, 12-21. SecurityY.Hakan Abacıoğlu, Cemile Sönmez, UMS Laboratuvar Güvenliği Rehberi, Sağlık Bakanlığı, Türkiye Halksağlığı Kurumu Başkanlığı, Mikrobiyoloji Referans Laboratuvarları Daire Başkanlığı 2014, 141-157
Course Duration		28 weeks.
Delivery		Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play, Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:		By the end of the course the student will be able to: <ul style="list-style-type: none"> • Develop intuition and deepen understanding of concepts. • Apply concepts learned in class to new situations. • Experience basic phenomena. • Develop critical, quantitative thinking. • Develop experimental and data analysis skills. • Learn to use scientific apparatus. • Learn to estimate statistical errors and recognize systematic errors. • Develop reporting skills (written and oral). • Practice collaborative problem solving. • Exercise curiosity and creativity by designing a procedure to test a hypothesis.
Course Assessments		<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 %



	A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Introduction of the course.
Session 2 (Week 2)	Classification of medical laboratories
Session 3 (Week 3)	Medical Laboratory Safety – Overview
Session 4 (Week 4)	Risk management in medical laboratory
Session 5 (Week 5)	Personal protective equipment
Session 6 (Week 6)	Chemical safety
Session 7 (Week 7)	Chemical safety
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Biological safety Physical security and data security Waste management First aid-Emergency action plans in medical laboratory accidents Rules to be followed in the medical laboratory - Class work Review of the semester Final Exam
Session 16 (W 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Medical Ethics

1	Course name	Medical Ethics
2	Course Code	AN303
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	None
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022



Brief Description	This course will explore the major ethical issues confronting the practices of medicine and biomedical science. We will become familiar with legal and institutional positions, consider and debate opposing arguments on the various topics, and examine relevant case studies.
Textbooks required for this Course:	1.Principles of Ethics for The Health Profession 2nd Edition. Timby,and Black, Evolve 2. Bioethics, 1st edition,Letty Kwan, C and E Publishing 3. Tom L. Beauchamp (Author), James F. Childress (Author). Principles of Biomedical Ethics. 4th Edition. Oxford University Press. 1994. ISBN-10:019508537X 4- Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardıçoğlu, Atlas Kitapçılık, 2002, ISO 15189 5- Principles of Ethics for the Health Profession 2nd Edition. Tim by, and Black, Evolve 6- Bioethics, 1st edition, Letty Kwan, C and E Publishing
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play,Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	By the end of the course the student will be able to: <ol style="list-style-type: none"> 1. Discuss ethical cases using ethical principles 2. Ensure a sound ethical dimension to all cases in health care; acknowledging that each case has its ethical component. 3. Understand and impart a proper informed consent process 4. Understand negligence and malpractice 5. Understand the principle of invoking double effect 6. Distinguish between utilitarian approaches to health care and, deontological approaches. 7. Understand what we mean by respecting the autonomy of patients.
Course Assessments	<ul style="list-style-type: none"> • Assignment 1: 30% • Assignment 2: 10 % • Final Exam: 60 % <p>A 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Orientation to course/Overview of medical ethics
Session 2 (Week 2)	Rights & duties of doctors, patients, family and community
Session 3 (Week 3)	Inter professional relationships
Session 4 (Week 4)	Accountability & misconduct of profession
Session 5 (Week 5)	Rules & regulations of the medical profession
Session 6 (Week 6)	Islamic principles & jurisdiction related to disease and practice of profession
Session 7 (Week 7)	Ethical aspects of newer medical issues,
Session 8 (Week 8)	Midterm Exam



Session 9 (Week 9)	Ethical aspects of medical research
Session 14 (Week 14)	Patient's secrets, file and reassurance & other topics
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Graduation Research project

1	Course name	Graduation Research project
2	Course Code	AN406
3	Course type: general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Research Methods and Data Analysis
7	Program offered the course	Anesthesia and intensive care
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Training on project establishment and methodology of execution including literature reviewed and use scientific information resources
Textbooks and References:		The students will use different resources.
Course Duration		28 weeks
Course Objectives:		<p>- KNOWLEDGE & UNDERSTANDING:</p> <p>a1-Define the Principles of research planning and design</p> <p>a2- Describe principles of basics of experimental design and analysis.</p> <p>b- INTELLECTUAL SKILLS</p> <p>b1- Identify suitable research topics.</p>



	<p>b2- Undertake independent research.</p> <p>b3- Be able to do Critical review and analysis of related literature.</p> <p>c-PROFESSIONAL AND PRACTICAL SKILLS</p> <p>c1- Design research study</p> <p>c2- Perform method validation and presentation of research report.</p> <p>c3- Write the research proposal and theses.</p> <p>d- GENERAL AND TRANSFERABLE SKILLS</p> <p>d1-Demonstrate appropriate communication skills.</p> <p>d2- Present clearly and effectively scientific topic in a tutorial or a staff meeting.</p> <p>d3- Work separately or in a team to research and prepare a scientific topic.</p>
Course Assessments	PPT Slides -End of semester after presentation
Content Breakdown	Topical Coverage
<p>Session 1 (Week 1)</p> <p>Session 26 (Week 26)</p>	<p>Development of a research protocol</p> <p>Fieldwork and data analysis</p> <ul style="list-style-type: none"> - The research project course involves the generation of new scientific information and a review and understanding of the scientific literature. - The research may be conducted in a laboratory, hospital, community laboratories, different company, etc., depending on the project and the supervisor. - Students are divided into groups and each group is working together. - Students are expected to work approximately 56 hours. This will include working in the laboratory, etc., reading or searching literature, and writing up the research project. - Fields of study available may include: <ul style="list-style-type: none"> o Biomedical genetics o Immunogenic o Cancer genetics o Biochemistry o Genetics Diagnosis o Embryology
<p>Session 27 (Week 27)</p> <p>Session 28 (Week 28)</p>	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure



relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



2. قسم المختبرات الطبية



Organic chemistry

1	Course name	Organic chemistry
2	Course Code	ML200
3	Course type: /general/specialty/optional	General
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	General chemistry
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Introduction to organic chemistry: bases of bonding in organic compounds, polar compounds, structural formulas, isomeric phenomena, forms of organic compounds; aliphatic compounds: alkanes, alkenes, alkynes; aromatic compounds; Functional groups: alcohols, ethers, alkyl halides, aldehydes, ketones, carboxylic acids, esters, amides, anhydrides, amines; A complete study in terms of nomenclature, structure, physical properties, methods of preparation and famous reactions.
Textbooks and References	Lecturer's materials
Course Duration	28 weeks
Course Objectives	<p>students will be able to:</p> <ul style="list-style-type: none"> • Define chemical bonding. • Describe the structure and representation of organic molecules. • Describe nomenclature • Demonstrate bonding, intermolecular forces, and functional groups • Describe nomenclature for alkyl halides, alcohols, alkenes, and alkynes • Know properties and synthesis • Identify addition reactions • Recognize nucleophilic substitution of alkyl halides. • Demonstrate stereochemistry. • Know free radical reactions • Define aromatic compounds (arenes) • Define reactions of aromatic compounds • Know nmr, mass spectrometry, and infrared (ir) spectroscopy • Describe synthesis and reactions of alcohols • Know ethers and epoxides • Describe enols and enolates • Describe conjugated unsaturated systems.



	<ul style="list-style-type: none"> Recognize synthesis and reactions of β-bicyclic compounds Know amines Describe phenols and aryl halides Identify carbohydrates
Course Assessments	Assignment 1: 10% Assignment 2: 30% Final Exam: 60% Daily Assessments: 10% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to organic chemistry Division of organic matter
Session 2 (Week 2)	Saturated hydrocarbons
Session 3 (Week 3)	Unsaturated hydrocarbons
Session 4 (Week 4)	Cyclic and aromatic hydrocarbons
Session 5 (Week 5)	Cyclic and aromatic hydrocarbons
Session 6 (Week 6)	Alcohols
Session 7 (Week 7)	Alcohols
Session 8 (Week 8)	Aldehydes
Session 9 (Week 9)	Aldehydes
Session 10 (Week 10)	Ketones
Session 11(Week 11)	Carboxylic acids
Session 12(Week 12)	Carboxylic acids
Session 13(Week 13)	Ketones Review
Session 14 (Week 14)	Midterm Exam
Session 15(Week 15)	Carboxylic acids
Session 16(Week 16)	Esters
Session 17 (Week 17)	Isomerism and isomerism
Session 18 (Week 18)	Vital organic compounds such as carbohydrates
Session 19 (Week 19)	Carbohydrates
Session 20 (Week 20)	Proteins
Session 21 (Week 21)	Proteins
Session 22 (Week 22)	Proteins
Session 23 (Week 23)	Fats and some other compounds
Session 24 (Week 24)	Fats and some other compounds
Session 25 (Week 25)	Fats and some other compounds
Session 26(Week 26)	Fats and some other compounds
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.


Biochemistry



1	Course name	Biochemistry
2	Course Code	ML201
3	Course type: /general/specialty/optional	General
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Organic chemistry
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description	<p>This course will provide students with a fundamental concept in chemistry, such as equilibrium, acid/base chemistry and thermodynamics into an exploration of biology. The content includes:</p> <p>Applying equilibrium processes to study biochemical reactions as well as cell structure. Studying the structure and function of amino acids and proteins. Analyzing the kinetic parameters of enzymes including different mechanisms of how drugs are used to inhibit enzymes. Understanding and making connections in metabolism.</p>
	Textbooks and references:	<ol style="list-style-type: none"> 1. JM. Berg, JL Tymoczko, L. Stryer, Biochemistry, Macmillan, 2019.R.H. 2. Garrett, C.M. Grisham, Biochemistry, Thomson 2012. 3. D L. Nelson, M. M. Cox Lehninger Principles of Biochemistry, Macmillan, 2017.

Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play. Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning.
Course Objectives:	<p>At the first part of the year the student will be able to:</p> <ol style="list-style-type: none"> 1. Identify the basic biomolecules within human body: Carbohydrates, proteins, and lipids. 2. Understand the basic concepts of biochemistry of Carbohydrates, proteins, and lipids: digestion, absorption and metabolism. 3. Recognize the process of energy conservation and consumption, and the integration of metabolic processes within the body. 4. Recognize the fact that biochemical processes in the human body are adapted to need. <p>The second part year will focus on metabolic biochemistry: the study of chemical reactions that provide the cell with the energy and raw materials necessary for life. Students will examine metabolism of glycogen, fatty acids, amino acids. Medical relevance is emphasized throughout the course.</p>
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Molecular base of life Water (Vital of life)</p> <ul style="list-style-type: none"> -Structure of water. -Physiochemical properties of water. -Self-ionization of water.
Session 2 (Week 2)	<p>pH</p> <p>Acid and base.</p> <ul style="list-style-type: none"> -Henderson-Hasselbalch equation. -direct contact. <p>Buffer</p> <ul style="list-style-type: none"> -Biological buffers.
Session 3 (Week 3)	<p>Carbohydrates</p> <ul style="list-style-type: none"> -Introduction to carbohydrates -Function and classification of carbohydrates <p>Monosaccharides</p> <ul style="list-style-type: none"> -Nomenclature and classification of monosaccharides -Optical activity of monosaccharides - Cyclic forms of monosaccharides -Monosaccharides derivatives -Reducing and oxidizing properties of monosaccharides
Session 4 (Week 4)	Oligosaccharides



	<ul style="list-style-type: none"> -Disaccharides -Example of common oligosaccharides Polysaccharides -Homoglycans -Heteroglycans 	
Session 5 (Week 5)	<p>Proteins</p> <ul style="list-style-type: none"> - Introduction to proteins - Function of proteins <p>Amino acids</p> <ul style="list-style-type: none"> - Structure of amino acids - Classification of amino acids. <p>Acidic amino acids o Basic amino acids</p> <p>Naturally occurring amino acid derivatives</p> <p>Disulfide bond formation</p> <p>Optical activity of amino acids</p>	
Session 6 (Week 6)	<p>Acid-Base reactions of amino acids</p> <ul style="list-style-type: none"> - Titration curve of amino acids o Glycine Acid-Base titration o Glutamate <p>Acid-Base titration</p> <p>Peptides</p> <ul style="list-style-type: none"> - Peptide bond formation - Structure and nomenclature of peptides - Biological activities of peptides 	
Session 7 (Week 7)	<p>Proteins have a unique sequence of amino acids</p> <ul style="list-style-type: none"> - Protein Structure: Primary, Secondary, Tertiary and Quaternary - Classification of proteins <p>Post-translation modification</p> <p>Glycoproteins</p> <p>Lipoproteins</p> <p>Denaturation</p> <p>Proteins extraction and purifications</p>	
Session 8 (Week 8)	<p>Lipids</p> <ul style="list-style-type: none"> - Introduction to lipids - Function and classification of lipids Fatty acids - Function and classification of lipids - Nomenclature and classification of fatty acids - Trans and Cis fatty acid - Characterization of fatty acid <p>Glycerol</p> <p>Triacylglycerol</p> <p>Waxes</p>	
Session 9 (Week 9)	<p>Glycerophospholipids</p> <p>Sphingolipids</p> <p>Glycolipids</p> <ul style="list-style-type: none"> - Roles of oligosaccharides in recognition and adhesion at the cell surface <p>Steroids</p> <ol style="list-style-type: none"> 1. Cholesterol. 2. Hormones derived from Cholesterol <p>The role of lipids in cell membrane fluidity</p> <p>Understanding the diversity of membrane lipid composition Rancidity</p>	

Session 10 (Week 10)	<p>Enzymes</p> <p>General characterizations of enzymes</p> <p>Applications of enzymes</p> <p>Nomenclature of enzymes</p> <p>Classifications of enzymes</p> <ol style="list-style-type: none"> 1. Transferase. 2. Oxidoreductase. 3. Hydrolase. 4. Lyase. 5. Isomerase. 6. Ligase
Session 11 (Week 11)	<p>Mechanism enzyme action</p> <ol style="list-style-type: none"> 1. Lock and key model 2. Induce-fit model <p>Factors affecting enzyme activity</p> <p>Enzyme inhibitors</p> <p>Holoenzyme and Apoenzyme</p>
Session 12 (Week 12)	<p>Hormones structure and function</p> <ul style="list-style-type: none"> - Introduction to hormones - Classification of hormones <ol style="list-style-type: none"> 1. Peptide hormones. 2. Amine-derived hormones. 3. Steroid hormones
Session 13 (Week 13)	<p>Hormone receptors</p> <p>Membrane receptors</p> <ol style="list-style-type: none"> 1. G protein-coupled receptors (GPCRs). 2. Receptor tyrosine kinases (RTKs). 3. Cytokine receptors 4. Receptor protein serine/threonine kinase <p>Nuclear receptors</p> <p>Mechanism hormone action</p> <ol style="list-style-type: none"> 1. Intracellular. 2. Extracellular <p>Fat of hormones</p>
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Metabolism – the general definition
Session 16 (Week 16) Session 17 (Week 17)	<p>Carbohydrate metabolism and regulation</p> <p>-Gluconeogenesis, Bioenergetics and Glycolysis</p> <p>-Enzyme Regulation and Glycolysis Regulation</p> <p>Glycogen Metabolism</p> <p>Allosteric & Hormonal Regulation of Glucose Metabolism</p> <p>Pentose Phosphate Pathway & Coordination with Glycolysis</p> <p>Galactose/Fructose Metabolism and Reactive Oxygen Species</p>
Session 18 (Week 18) Session 19 (Week 19)	<p>Lipid Metabolism and Regulation</p> <p>-Pyruvate Dehydrogenase Complex Mechanism</p> <p>-Citric Acid Cycle Energetics, Regulation and Ketone Bodies</p>



	Fatty Acid Catabolism and Biosynthesis Cholesterol Biosynthesis and Transport Coordinated Regulation of Lipid Metabolism Metabolism of glycerophospholipids, sphingolipids, isoprenoid compounds and coronoids
Session 20 (Week 20) Session 21 (Week 21)	Nitrogen Metabolism: Amino Acids, Nucleotides, DNA Protein Turnover, Nitrogen Transport and Urea Cycle Amino Acid Catabolism, Regulation, and Fates of Carbon Skeletons Amino Acid Biosynthesis and Carbon Donors Nucleotide Biosynthesis: Ribonucleotides, Deoxyribonucleotides Biosynthesis and degradation of proteins
Session 22 (Week 22) Session 23 (Week 23)	Integration of metabolic pathways.
Session 24 (Week 24) Session 26 (Week 26)	Vitamins - Biological function of vitamins - Classification of Vitamins Fat-soluble vitamins Water-soluble vitamins
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



General Microbiology

1	Course name	General Microbiology
2	Course Code	ML202
3	Course type: /general/specialty/optional	General
4	Accredited units	6 units

5	Educational hours	6 hours
6	Pre-requisite requirements	General biology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	<p>General Microbiology is an upper division course on Microbial Biology consisting of both lecture and laboratory.</p> <p>The course covers bereave identification of the microbial wards (bacteria, viruses, fungi and protozoa) , classification and morphology of microorganisms (size, shape, staining reaction and structure), physiology (reproduction, growth, nutrition, cultivation, metabolism, factors affecting growth, control of microbial growth especially in vivo i.e aspects of microbial therapy), mode of action, host parasite relationship, virulence factors, disease development and host response to microbial invasion or mechanisms of resistance. Relevant groups of microorganisms i.e. bacteria, fungi, viruses and parasites are considered.</p>
Textbooks and References:	<ul style="list-style-type: none"> - Jacaelyng .Black microbiology – - Principles and Explorations- Gerard j .TortoraBerdellR.FunkechristineL.case Microbiology and Introduction . Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardiçoğlu, Atlas Kitapçılık, 2002, ISO 15189. - Kayser, Medical Microbiology © 2005 Thieme. - Greenwood et al: <i>Medical microbiology</i>, 2002. - Frances T Fischbach RN,: A Manual of Laboratory and Diagnostic Tests 7th edition; Lippincott Williams & Wilkins: 2003.
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> - Be familiar with the microbial world and its relation to human lives. - Know the methods and equipment used to investigate the microbial world. - Have a background about structure, metabolic pathways, and genetics of bacterial cells. - Understand the growth requirements of bacteria and how to control their growth. - Understand physical and chemical factors which affect microorganisms, principles of chemotherapy, microbial genetics, pathogenicity and microbial disease and mechanisms of resistance. - Know the basic principles of bacterial culture techniques and general biochemical tests.



	<ul style="list-style-type: none"> - Describe the morphological features of bacteria microscopically and on culture. - Describe different laboratory diagnostic test used
Course Assessments	Assignment 1: 10% Assignment 2: 30% Final Exam: 60% A 60% is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to microbiology The Microbial World Introduction and brief history of Microbiology. Classification of microorganisms.
Session 2 (Week 2)	General characters and classification of Bacteria. Bacterial Anatomy. Size, shape, and arrangement of bacterial cells, Structures external to the cell wall (glucocalyx, flagella, axial filaments, and Pilli).
Session 3 (Week 3)	The cell wall, Structures internal to the cell wall (cytoplasm, nuclear, area, ribosomes, inclusions, and endospores). Capsule, Flagella, Inclusion, Granule, Spore
Session 4 (Week 4)	Microbial Growth Growth and nutrition of Microbes - Bacterial growth requirements. Bacterial division, Batch Culture, Continuous culture, bacterial growth- total count, viable count, bacterial nutrition, oxygen requirement, CO ₂ requirement, temperature, pH, light.
Session 5 (Week 5)	<ul style="list-style-type: none"> - Culturing of bacteria and media types - Preserving bacterial cultures and growth
Session 6 (Week 6)	-- Control of Microbial Growth Sterilization and Disinfection Physical agents- Sunlight, Temperature less than 1000C, Temperature at 1000C, steam at atmospheric pressure and steam under pressure, irradiation, filtration.
Session 7 (Week 7)	Chemical Agents- Alcohol, aldehyde, Dyes, Halogens, Phenols, Ethylene oxide.
Session 8 (Week 8)	Bacterial Genetics Genetic material Structure and function of the genetic material. Plasmids, replication. <ul style="list-style-type: none"> - Mutation: change in the genetic material.



	- Genetic transfer (transformation, conjugation, transduction, and recombination).
Session 9 (Week 9)	Microbial virulence factors and pathogenesis of bacterial infection.
Session 10 (Week 10) & Session 11 (Week 11)	Antibacterial antibiotics and their mode of action. -Epidemiological aspects: Transmission, (sources and mode of infection), -Chemotherapy and antibiotic resistance. - Vaccination.
Session 12 (Week 12) & Session 13 (Week 13)	Normal bacterial flora of human body.
Session 14(Week 14)	Midterm exam
Session 15(Week 15)	Parasitology Morphology and life cycle
Session 16 (Week 16)	Laboratory diagnosis of following parasites E. histolytica and Plasmodium
Session 17 (Week 17)	Tape worms and Intestinal nematodes
Session 18 (Week 18) & Session 19 (Week 19)	Mycology Morphology, diseases and causes
Session 20 (Week 20)	Mycology Lab diagnosis of Fungi
Session 21 (Week 21) Session 22 (Week 22)	Virology General properties of viruses, diseases caused,
Session 22 (Week 22) Session 24 (Week 24)	Virology, lab diagnosis and prevention of following viruses, Herpes, Hepatitis, HIV, Rabies and Poliomyelitis.
Session 25 (Week 25) Session 26 (Week 26)	Virology, Rabies and Poliomyelitis.
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to



	ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Anatomy and Physiology

1	Course name	Anatomy and physiology
2	Course Code	ML203
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The introduction to anatomy course will study the shape and structure of the human body and its parts. Content includes: basic anatomy and structure of various organ systems of the body, neurons, cardio-vascular, respiratory, digestive and uro-genital systems. The practical part will be devoted to tutorials and studying on anatomical models of different body organs in each system that is mentioned above
Textbooks and References:		Anatomy & Physiology Coloring Workbook: A Complete Study Guide (11 th Edition) by Elaine N. Marieb (Author).
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		Upon the completion of this course student is expected: <ol style="list-style-type: none"> 1. Explain interrelationships among molecular, cellular, tissue and organ functions in each system. 2. Describe the interdependency and interactions of the systems . 3. Explain contributions of organs and systems to the maintenance of homeostasis . 4. Identify causes and effects of homeostatic imbalances.
Course Assessments		Assignment 1: 30% Final Exam: 60 % Daily Assessments: 10% A 50% is required for a pass in this course.
Content Breakdown		Topical Coverage
Session 1 (Week 1)		Introduction to anatomy and human body.



	<p>Organization of the human body</p> <p>Definition of Anatomy</p> <p>Level of organization</p> <p>Anatomical positions</p> <p>Body regions and cavities</p> <p>Terms used in Describing Body Structure</p> <p>Body planes and sections</p> <p>Directional terms</p>
Session 2 (Week 2)	<p>Cell Cycle</p> <p>2. Epithelial Tissues</p> <p>a. Forms and characteristics of epithelial cells</p> <p>b. Specialization of the cell surface</p> <p>c. Types of epithelia</p>
Session 3 (Week 3)	<p>3. Connective Tissue</p> <p>a. Cells, fibers and ground substance</p> <p>b. Types of Connective tissues</p> <p>c. Adipose tissue</p> <p>d. Cartilage</p> <p>e. Bone tissue</p>
Session 4 (Week 4)	<p>4. Nerve Tissue</p> <p>a. Neurons and parts</p> <p>b. Glial cells and neuronal activity</p> <p>c. Synaptic communications</p>
Session 5 (Week 5)	<p>5. Blood Cells</p> <p>a. Composition of Plasma</p> <p>b. Red Blood Cells/Erythrocytes</p> <p>c. White Blood Cells/Leukocytes</p> <p>d. Hematopoiesis</p> <p>III. Integumentary System</p> <p>1. Structure of the Skin</p> <p>a. Epidermis</p> <p>b. Dermis</p> <p>2. Appendages of Skin</p> <p>a. Hair</p> <p>b. Nails</p> <p>C. Skin Glands</p>
Session 6 (Week 6)	<ul style="list-style-type: none"> • Body regions • Upper limb • Lower limb • Thorax • Abdomen



	<ul style="list-style-type: none"> • Pelvis • Head and neck
Session 7 (Week 7)	<p>Body Systems</p> <p>Musculoskeletal system: Bones, joints and muscles</p> <p>Musculoskeletal system: Bones, joints and muscles -Function of urinary organs.</p> <p>-Fluid & electrolytes balances.</p>
Session 8 (Week 8)	<p>Digestive system</p> <p>Function of digestive organs.</p> <p>-Movements of alimentary canal</p> <p>-Role of enzymes in digestive process</p>
Session 9 (Week 9)	Digestive system II: Accessories and glands
Session 10 (Week 10)	Cardiovascular system: heart and blood vessels
Session 11 (Week 11)	<p>-Function of heart</p> <p>-Cardiac cycle (blood circulation)</p>
Session 12 (Week 12)	-Blood pressure and its regulation
Session 13 (Week 13)	-ECG: methods of recording, normal record and common abnormalities.
Session 14(Week 14)	Midterm Exam
Session 15 (Week 15)	Lymphatic system
Session 16 (Week 16) & Session 17 (Week 17)	<p>Respiratory system</p> <p>Physiology of respiration.</p> <p>-Control of respiration</p> <p>-Hypoxia, cyanosis and dyspnea</p> <p>-Pulmonary function tests</p>
Session 18 (Week 18)	Nervous system I: Central nervous system: brain and spinal cord
Session 19 (Week 19)	Nervous system II: Peripheral nervous system and cranial nerves
Session 20 (Week 20)	Nervous system III: Autonomic nervous system Special senses
Session 21 (Week 21)	Special senses
Session 22 (Week 22)	Endocrine system
Session 23 (Week 23)	Urinary system
Session 24 (Week 24)	Reproductive system
Session 25 (Week 25)	Gynecology, pregnancy, and childbirth
Session 26 (Week 26)	Embryology
Session 27 (Week 27) & Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their



	lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Histology

1	Course name	Histology
2	Course Code	ML204
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Learn the histological study methods.Describes tissue and basic tissue types Knows immune-histochemical and Histochemical staining methods .The course aims to give students the ability to evaluate the histological features of the human body organs and systems.
Textbooks and References:	<p>Gartner LP, Hiatt JL. Color Textbook of Histology W.B. Saunders Company, Philedelphia, 2001</p> <p>Junqueira LC, Carneiro J. Temel Histoloji, Text & Atlas. Lange Medical Books McGraw-Hill, New York, 2003</p> <p>Özer A. Temel Histoloji. 2. Baskı Nobel Akademi Yayıncılık 2014</p> <p>Wheater's Functional Histology. Young and Heath. 4th Edition.2000. UK.</p> <ul style="list-style-type: none"> - Color Textbook of Histology -Concise Histology Book, July 2010, by Gartner -Functional Histology Book, December 2009, by Kerr -Histology Book, April 2009, by Mitchell -Histology and Cell Biology: An Introduction to Pathology Book, January 2015, by Kierszenbaum -Medical Cell Biology Made Memorable Book, February 1999, by Norman -Netter's Essential Histology Book, April 2013, by Ovalle



	-Netter's Histology Flash Cards Updated Edition Book, August 2013, by Ovalle -Oral Anatomy, Histology and Embryology Book, January 2009, by Berkovitz
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play. Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop, Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	By the end of the course the student will be able to: <ul style="list-style-type: none"> • Acquire a basic background in histology and to understand the properties of cells and their interactions with one another as components of tissues and organs. • Understand how structure and function correlate at the microscopic level. • Describe the normal structure and function of various cell types, tissues, and organs, and to differentiate their histological structures from each other through examination. • Acquire basic background on embryology and to understand the first weeks of development. • Describe the growth of the foetus and the maturation of the organ system.
Course Assessments	Assignment 1: 30 % Assignment 2: 10% Final Exam: 60% 50% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Basic Knowledge of Cytology Cell structure & types (cell, cell skeleton, cytoplasm and organelles, nucleus, Nucleic Acids, Cell Cycle, Cell Division, Cell Differentiation, Cell Death)
Session 2 (Week 2)	Extracellular Matrix
Session 3 (Week 3)	Epithelial Tissue (surface epithelium, glandular epithelium, cell junctions)
Session 4 (Week 4)	Connective Tissue (CT) general characters, and CT fibers - Connective tissues cells, CT proper



Session 5 (Week 5)	Cartilage Tissue - Cartilage cells, types of cartilage
Session 6 (Week 6)	Bone Tissue - bone cells, types of bone, bone healing
Session 7 (Week 7)	Muscle Tissue - structure of muscle cell fibers, types of muscles (skeletal muscles, cardiac muscle, smooth muscles)
Session 8 (Week 8)	Nervous tissue; brain, spinal cord, structure and types of nerve cells, types of nerve fibers, nerve ganglion, injury and healing of nerve cells)
Session 9 (Week 9)	
Session 10 (Week 10)	Nervous system
Session 11 (Week 11)	Circulatory system
Session 12 (Week 12)	Blood; blood plasma, blood cells, bone marrow, hematopoiesis - Vascular system: arteries, veins, blood capillaries, blood sinusoids -
Session 13 (Week 13)	
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Lymphatic system: immunity, lymph nodes, spleen, thymus gland Skin
Session 16 (Week 16)	Skin
Session 17 (Week 17)	Respiratory system: nasal cavity, trachea, bronchial tree, lung
Session 18 (Week 18)	Digestive system: oral cavity, gastro-intestinal tube, liver, pancreas
Session 19 (Week 19)	Urinary system: kidney, urinary tract.
Session 20 (Week 20)	- Reproductive system: male and female reproductive organs, such as testis, ovary, uterus.
Session 21 (Week 21)	Basic Histology Techniques
Session 23 (Week 23)	Basic Stage of Histological Techniques
Session 24 (Week 24)	Histochemical and Cytochemical Staining Techniques
Session 25 (Week 25)	Immuno-histochemical and Immuno-cytochemical Painting Techniques
Session 26 (Week 26)	
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.



Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Analytical Chemistry

1	Course name	Analytical Chemistry
2	Course Code	ML205
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	General Chemistry
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

This course is an introductory to analytical chemistry assess students for understanding the theoretical and practical knowledge concerning quantitative analysis as well as how to manipulate different techniques in volumetric analysis. In addition to provide students with a broad and balanced foundation of analytical knowledge and practical skills in medical laboratories

Textbooks and References:

Fundamentals of Analytical Chemistry, Skoog, West and Holler, 7th Ed, Saunders College Publishing, 2000 (we prefer the latest edition)

1. Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardiçoğlu, Atlas Kitapçılık, 2002, ISO 15189

1. Text book of Medical Laboratory Technology by P. B. Godker-3rd edition

2. Medical Laboratory Technology by KL Mukherjee volume III-3rd edition

3. Practical Clinical Biochemistry by Harold Varley-6th edition

4. Principal of Biochemistry by M. A. Siddiqi

5. Instrumental Analysis by Chatwal Anand-5th edition

6. Text book of Medical Biochemistry by Chaterjee Shinde-8th edition

7. Principal of Biochemistry by Lehninger-7th edition

8. Biochemistry by Voet & Voet-4th edition

9. Biochemistry by Stryer-9th edition

Course Duration

28 weeks



Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	Throughout this course, we will focus on the following learning objectives: <ol style="list-style-type: none"> 1. Understand the fundamental concepts of chemical equilibrium 2. Parameterize solution behavior and calculate solution concentrations given the appropriate equilibrium constants 3. Apply knowledge of equilibrium constraints to a range of systems of interest including solubility, acid/base chemistry, complex formation, oxidation/reduction, hydrolysis, and phase partitioning. 4. Investigate solution behavior using electrochemical methods, including potentiometry, voltammetry, and ion selective electrodes.
Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to the course
Session 2 (Week 2)	Quantitative Analysis Sections <ol style="list-style-type: none"> 1. Types of chemical analysis (descriptive analysis and quantitative analysis) 2. Quantitative Analysis Sections
Session 3 (Week 3)	<ol style="list-style-type: none"> 3. Methods for expressing weights in analytical chemistry 4. Methods of expressing focus.
Session 4 (Week 4) Session 5 (Week 5)	Volumetric analysis <ol style="list-style-type: none"> 1- Definition and division. 2- Types of volumetric quantitative analysis: acidity and alkalinity. A- Definition of acids and alkalis and their types.
Session 6 (Week 6)	C - Preparation of solutions of acids and alkalis. D-Standard solutions. E- Types of calibration and the terms used for it.
Session 7 (Week 7)	<ol style="list-style-type: none"> 3- Calibration curves. 4- Evidence and its types?
Session 8 (Week 8) Session 9 (Week 9)	pH : <ol style="list-style-type: none"> 1- Definition of pH. 2- Calculation of pH degrees for strong and weak acids & their laws
Session 10 (Week 10)	<ol style="list-style-type: none"> 3- Calculation of pH degrees for alkalis and their laws.



	4- Calculation of the pH degrees of salts and their laws.
Session 11 (Week 11)	5- Organized solutions. A- Definition and division.
Session 12 (Week 12)	b- Calculating the pH degrees of the buffer solutions.
Session 13 (Week 13)	c- The regulatory capacity of the organized solutions
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Volumetric oxidation-reduction reactions 1- Definition of oxidizing and reducing agents and their interaction.
Session 16 (Week 16)	2- Ionic Equations and Calculating Equivalent Weight.
Session 17 (Week 17)	3- Electric cells and their relationship to oxidation and reduction.
Session 18 (Week 18) Session 19 (Week 19)	4- The Nernst equation and its relationship to oxidation and reduction.
Session 20 (Week 20)	5- Calculation of oxidation potential and electromotive force.
Session 21 (Week 21)	6- Reactions of hydrogen peroxide. 7- Iodine reactions.
Session 23 (Week 23)	8- Permanganate reactions.
Session 24 (Week 24)	Quantitative weight analysis. 1- Definition of gravimetric sedimentation reactions and sedimentation methods. 2- How to obtain the precipitate in its pure form or its weight
Session 25 (Week 25)	3- The solubility product and its role in precipitation reactions.
Session 26 (Week 26)	4- Effect of salts on sedimentation.
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
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Medical Ethics and healthcare communication skills

1	Course name	Medical ethics and Healthcare Communication Skills
2	Course Code	ML206
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022

Brief Description This course will explore the major ethical issues confronting the practices of medicine and biomedical science. We will become familiar with legal and institutional positions, consider and debate opposing arguments on the various topics, and examine relevant case studies.

Textbooks and References:

- The Ethical Slut: A Practical Guide to Polyamory, Open Relationships & Other Adventures Mar 10, 2009 by Dossie Easton and Janet W. Hardy
- 1.Principles of Ethics for The Health Profession 2nd Edition. Timby, and Black, Evolve
- 2. Bioethics, 1st edition, Letty Kwan, C and E Publishing
- 3. Tom L. Beauchamp (Author), James F. Childress (Author). Principles of Biomedical Ethics. 4th Edition. Oxford University Press. 1994. ISBN-10:019508537X
- 4- Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardiçoğlu, Atlas Kitapçılık, 2002, ISO 15189
- 5- Principles of Ethics for the Health Profession 2nd Edition. Tim by, and Black, Evolve
- 6- Bioethics, 1st edition, Letty Kwan, C and E Publishing

Course Duration 28 weeks

Delivery Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play. Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop

Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning

Course Objectives:

By the end of the course the student will be able to:

1. Discuss ethical cases using ethical principles
2. Ensure a sound ethical dimension to all cases in health care; acknowledging that each case has its ethical component.
3. Understand and impart a proper informed consent process
4. Understand negligence and malpractice
5. Understand the principle of invoking double effect



	<p>6. Distinguish between utilitarian approaches to health care and, deontological approaches.</p> <p>7. Understand what we mean by respecting the autonomy of patients.</p>
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Orientation to course/Overview of medical ethics</p> <p>Rights & duties of doctors, patients, family and community</p>
Session 2 (Week 2)	Inter professional relationships
Session 3 (Week 3)	Accountability & misconduct of profession
Session 4 (Week 4)	Rules & regulations of the medical profession
Session 5 (Week 5)	Islamic principles & jurisdiction related to disease and practice of profession
Session 6 (Week 6)	Ethical aspects of newer medical issues,
Session 7 (Week 7)	Ethical aspects of medical research
Session 8 (Week 8)	Patient's secrets, file and reassurance & other topics
Session 9 (Week 9)	The role of the laboratory in the health service -
Session 10 (Week 10)	Laboratory customers
Session 11 (Week 11)	
Session 12 (Week 12)	The organization of the hospital and the laboratory
Session 13 (Week 13)	
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	<ul style="list-style-type: none"> • Introduction to the Course
Session 16 (Week 16)	<ul style="list-style-type: none"> • Why is Health Communication Important? • Sociohistorical Considerations • Public & Political Considerations • Social Considerations • Cultural Considerations
Session 17 (Week 17)	<ul style="list-style-type: none"> • Stigma & Mental Health
Session 18 (Week 18)	<ul style="list-style-type: none"> • Guest speaker: Elizabeth Flood Reading TBA
Session 19 (Week 19)	<ul style="list-style-type: none"> • Interview Paper due Interpersonally & Narratively Making Sense of Health
Session 20 (Week 20)	<ul style="list-style-type: none"> • Patient Caregiver Communication
Session 21 (Week 21)	<ul style="list-style-type: none"> • Narrative Medicine, Perspective Taking, Patient Perspectives
Session 22 (Week 22)	<ul style="list-style-type: none"> • Communication in the Cancer Clinic



	<ul style="list-style-type: none"> • Narratives of Illness
Session 23 (Week 23)	<ul style="list-style-type: none"> • Health Caregiver Perspectives • Family Caregiver Perspectives • Family caregivers: Social support & Silence
Session 24 (Week 24)	<ul style="list-style-type: none"> • Death & Dying: Palliative Care • Death & Dying: Final Conversations
Session 25 (Week 25)	<ul style="list-style-type: none"> • Community based Participatory Research • Education Wittenberg • Health Campaigns.
Session 26 (Week 26)	Communication Matters Campaign
Session 27 (Week 27)	Final exam
Session 28 (Week 28)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Laboratories Safety and Medical instruments:

1	Course name	Laboratory Safety and Medical instruments
2	Course Code	ML207
3	Course type: general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description		The course teaches students' laboratories safety and the proper use of the medical instruments.
Textbooks and References:		<p>- Laboratuvar Aletleri, Adam B, Nobel Yayınları, Ankara, 2000</p> <p>- Sibel Uzun, Fatih Özçelik, Laboratuvar Güvenliği El Kitabı, Tüketici Güvenliği Ve Halk Sağlığı Laboratuvarları Dairesi Başkanlığı, 2017, 12-21.</p> <p>- SecurityY.Hakan Abacıoğlu, Cemile Sönmez, UMS Laboratuvar Güvenliği Rehberi, Sağlık Bakanlığı, Türkiye Halksağlığı Kurumu Başkanlığı, Mikrobiyoloji Referans Laboratuvarları Daire Başkanlığı 2014, 141-157</p>
Course Duration		28 weeks
Delivery		Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop.Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:		<p>By the end of this course the student will be able to:</p> <ul style="list-style-type: none"> • Develop intuition and deepen understanding of concepts. • Apply concepts learned in class to new situations. • Experience basic phenomena. • Develop critical, quantitative thinking. • Develop experimental and data analysis skills. • Learn to use scientific apparatus. • Learn to estimate statistical errors and recognize systematic errors. • Develop reporting skills (written and oral). • Practice collaborative problem solving. • Exercise curiosity and creativity by designing a procedure to test a hypothesis. • Better appreciate the role of experimentation in science. • Test important laws and rules.
Course Assessments		<p>Assignment: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p>



	Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1) & Session 2 (Week 2)	Introduction of the course. Classification of medical laboratories Medical Laboratory Safety – Overview
Session 3 (Week 3)	Risk management in medical laboratory
Session 4 (Week 4)	Personal protective equipment
Session 5 (Week 5)	Chemical safety
Session 6 (Week 6)	Biological safety
Session 7 (Week 7)	Physical security and data security
Session 8 (Week 8)	Waste management
Session 9 (Week 9)	First aid-Emergency action plans in medical laboratory accidents Rules to be followed in the medical laboratory
Session 10 (Week 10)	Identifying Glass and Plastic Materials
Session 11 (Week 11)	Solvents and Concentration Concepts
Session 12 (Week 12)	Distilled Water, Cleaning and Sterilization of Materials
Session 13 (Week 13)	Identifying laboratory devices
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15) Session 16 (Week 16)	General introduction to the course, Identifying Glass and Plastic Materials Identifying laboratory devices
Session 17 (Week 17)	Solvents and Concentration Concepts Distilled Water, Cleaning and Sterilization of Materials
Session 18 (Week 18) Session 19 (Week 19)	Microscope Brightfield microscope Simple microscope Compound microscope Parts& principle of the microscope Illumination, Magnification and resolution Setting up, uses, Care & safety
Session 20 (Week 20)	Phase Contrast microscopy Darkfield microscopy Fluorescent microscope Parts & principle Setting up, uses, Care & safety



	<p>Electron Microscope</p> <p>Parts & principle</p> <p>Magnification & resolution</p> <p>Uses</p>
Session 21 (Week 21)	Acid-Bases and Buffer Solutions
Session 22 (Week 22)	<p>Centrifuge and centrifugation</p> <p>Parts & principle of the centrifuge</p> <p>Setting up</p> <p>Types & Uses</p> <p>Care and safety</p>
Session 23 (Week 23)	<p>Spectrophotometric methods</p> <p>Spectrophotometer</p> <p>Parts & principle</p> <p>setting up & Calibration</p> <p>Uses and care</p>
Session 24 (Week 24)	<p>Turbidimetric, Nephelometric, Fluorometric Methods</p> <p>Autoanalyzers</p> <p>Chromatographic methods</p> <p>Principle & types</p> <p>Paper chromatography</p> <p>Thin layer chromatography</p> <p>Column chromatography</p> <p>Electrophoresis</p> <p>electrophoresis apparatus</p> <p>Principle, Uses, Care and safety</p>
Session 25 (Week 25)	<p>Filtration apparatus</p> <p>Types & Uses of the filters</p>
Session 26 (Week 26)	<p>Equipment for culturing organisms</p> <p>- Microbiological safety cabinet - Incubator</p> <p>- Pipettes, Bunsen Burner - Water bath & Dry oven</p> <p>Sterilization & Decontamination - Autoclave</p>
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates



	have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Molecular biology

1	Course name	Molecular biology
2	Course Code	ML306
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Molecular Genetics introduces the student to the structure, maintenance and expression of the genome. We will examine both prokaryotic and eukaryotic genomes in this course, with an emphasis on genetic analysis. After completing this course, students should be able integrate the structure and function of the genome, describe how gene expression is regulated in multiple paradigms, and be able to understand how genetic analysis is used to dissect complex regulatory processes.
Textbooks and References:		Watson et al., Molecular biology of the gene, 7th, 2014. Pearson education, Inc
Course Duration		28 weeks
Delivery		Required Readings: assigned review articles. Lecture slides and reading articles will be distributed.
Course Objectives:		By the end of this course the student will be able to: <ol style="list-style-type: none"> 1. Identify the basic taxonomy and principles of the scientific method as it pertains to the natural, physical world. 2. Infer relationships; make predictions and solving problems based on an analysis of evidence or scientific information. 3. Apply scientific concepts, quantitative techniques and methods to solving problems and making decisions.



	4. Describe the relevance of some aspect of the natural science to their lives and society.
Course Assessments	Assignment 1: 40 % Final Exam: 60% 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Course overview Introduction to molecular biology
Session 2 (Week 2)	DNA and RNA structure in details
Session 3 (Week 3) Session 5 (Week 5)	The replication of DNA: - Chemistry of DNA synthesis - The replication fork components in details - Finishing of replication
Session 6 (Week 6) Session 7 (Week 7)	Mechanisms of Transcription: - Transcription cycle in Bacteria - Transcription in eukaryotes - Transcription by RNA pol I and III
Session 8 (Week 8) Session 9 (Week 9)	RNA splicing: - Spliceosome machinery and pathway - Alternative splicing
Session 10 (Week 10) Session 12 (Wee12)	Translation: -Initiation of translation -Translation elongation -Translation termination
Session 13 (Week 13)	The mutability and repair of DNA
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Review Physical and chemical structure of genetic material: denature and renature process of DNA molecule, T _m and C _{ot} curves, determination of DNA molecular weight and concentration.
Session 16 (Week 16)	Gene structure and organized in pro and eukaryotic cell. A general structure of typical human and bacterial genes with labeled features of up and down stream regulatory elements.
Session 17 (Week 17)	Principle of gene expression in pro and eukaryotic cells. Control sequences (Enhancers, silencers; cofactors'), coding sequence RNA polymerase, Initiation of transcription, basal transcription factors (TBP, TFIIB, IIF, IIE, IIH).
Session 18 (Week 18)	Post transcription events; RNA splicing, 5cap ,and poly A formation
Session 19 (Week 19)	Control of RNA splicing. 5UTR and 3UTR cleavage site of introns, Splicing machine, Splicing intermediate; alternative splicing and their relation to gene expression control.
Session 20 (Week 20)	Translation control in pro and eukaryotic



Session 21 (Week 21)	Major molecular level events of translation in eukaryotic cell; cap-dependent and cap- independent translation; role initiation factors; PABP and poly A tail in gene translation.
Session 22 (Week 22)	Post translation events. Methylation, acetylation; phosphorylation process
Session 23 (Week 23)	Chromosome modification or remodeling; DNA methylation; Histone acetylation
Session 24 (Week 24)	Blockage of translation; Degradation rate of m-RNA; poly A tail length; si-RNA and mi-RNA role; control of enzyme activity by effectors and inhibitors.
Session 25 (Week 25)	Detection of gene control sequence by biochemical approaches in vitro and recombinant DNA transfected into culture cells
Session 26 (Week 26)	Methods to determine the important of certain sequence or factor for gene expression at transcription or translation level; real time PCR ,DNA foot print; Northern blot; western blot and microarray
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Clinical Chemistry

1	Course name	Clinical Chemistry
2	Course Code	ML300
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	Biochemistry
7	Program offered the course	Medical Laboratory
8	Instruction Language	English



9	Date of course approval	2022
Brief Description:	This course introduces the theory, practical application, technical performance and evaluation of clinical chemistry laboratory procedures. Correlation of clinical laboratory data with the diagnosis and treatment of carbohydrate, renal, liver, cardiac, lipid, protein, and pancreatic disorders, as well as acid-base and electrolyte disturbances, is emphasized	
Textbooks and References:	1- Ravel R: Clinical Laboratory Medicine: Clinical Applications of Laboratory Data; 6th ed; Mosby 1995 2- Burits CA, and Ashwood ER: Titez Text Book of Clinical Chemistry; 3rd ed Saunders Co, N.Y., 2002	
Course Duration	28 weeks	
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.	
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <p>Upon successful completion of Clinical Chemistry I, the Medical laboratory science student will:</p> <ol style="list-style-type: none"> 1. Demonstrate a working knowledge of the theory and techniques utilized in standard laboratory procedures applied to Chemistry. 2. Perform manual and automated laboratory procedures with accuracy and efficiency to provide quality patient care. 3. Perform routine maintenance and basic troubleshooting techniques properly. 4. Evaluate the validity of test results by correlating interfering substances, QC results, test conditions and specimen integrity. 5. Perform calculations without error to ensure the reporting of accurate and valid test results. 6. Correlate test results with normal and abnormal physiologic conditions. 7. Demonstrate the ability to effectively communicate with the health care team, peers, patients and the public. 8. Effectively utilize clinical information systems to access and process patient data. <p>Upon completion of the course the student will be able to:</p> <ol style="list-style-type: none"> 1) Identify and explain various physiological and analytical causes of variability in results on patient laboratory tests. 2) Explain the biochemical consequences of disease in the major organ systems 	



	<p>3) Interpret the meaning of laboratory tests and assess their significance in patient disease states</p> <p>4) Explain the correct use of reference intervals and identify possible factors affecting them</p> <p>5) Clinically correlate laboratory values with clinical disease states.</p> <p>6) Write a clinical case as seen in the concept applications throughout the course.</p>
Course Assessments	<p>Assignment 1: 10.%</p> <p>Assignment 2: 30%</p> <p>Final Exam: 60% Daily Assessments: 10%</p> <p>A 60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	WATER HOMEOSTASIS
Session 2 (Week 2)	MINERAL METABOLISM:
Session 3 (Week 3)	<ul style="list-style-type: none"> - Electrolytes: Na, K, Cl, Mg, Ca - Trace elements: Fe, Cu, Zn, Mn, F
Session 4 (Week 4)	Suger, Diabetes mellitus
Session 5 (Week 5)	
Session 6 (Week 6)	<p>LIVER:</p> <ul style="list-style-type: none"> - Physiology and role in metabolism - Bilirubin metabolism - Bile salts & gall stones - Liver function tests
Session 7 (Week 7)	<p>Disorders of the Liver:</p> <ul style="list-style-type: none"> i) Jaundice & Neonatal Jaundice ii) Alcoholic Liver disease iii) Hepatitis iv) Cirrhosis v) Liver tumors
Session 8 (Week 8)	<p>KIDNEY:</p> <ul style="list-style-type: none"> - Functions - Renal functions tests
Session 9 (Week 9)	<p>KIDNEY:</p> <ul style="list-style-type: none"> - Proteinuria - Renal failure (Acute:Chronic)
Session 10 (Week 10)	Disorder in lipid metabolism
Session 11 (Week 11)	T.G,phospholipids lipoprotein Tests (lipid profile)
Session 12 (Week 12)	HEART:



	- Enzymes affected in heart diseases and pulmonary embolism (infarction, angina, pulmonary embolism)
Session 13 (Week 13)	Pancreatic function ,exocrine,function,Pathology P.F.T Disease
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Serum protein components diseases
Session 16 (Week 16)	Tumor Markers
Session 17 (Week 17)	
Session 18(Week 18)	Enzymes isoenzymes patterns to pathology .T,Aldolase, CK, LDH
Session 19 (Week 19)	
Session 20 (Week 20)	LP , A.la T ASP .T ASAcP
Session 21 (Week 21)	General aspect of hormone
Session 22 (Week 22)	
Session 23 (Week 23)	Transport regulation
Session 24 (Week 24)	Thyroid ,gastrointestinal steroid Hormones
Session 25 (Week 25)	Parathyroid ,adrenal hormone
Session 26 (Week 26)	Sex hormones
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medical Bacteriology

1	Course name	Medical Bacteriology
2	Course Code	ML301



3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course covers systemic pathogenic bacteria , their pathogenesis, modes of transmission, epidemiology, methods for isolation and identification. Areas of study include: Gram-positive cocci and bacilli, as well as methods of testing their susceptibility to antibacterial agents.
Textbooks and References:		1- Kayser, Medical Microbiology © 2005 Thieme. 2- Greenwood et al: Medical microbiology, 2002. 3- Frances T Fischbach RN,: A Manual of Laboratory and Diagnostic Tests 7th edition; Lippincott Williams & Wilkins: 2003. 4- Sağlık Bilimlerinde Mikrobiyoloji, Özgül Kısa, Nobel Tıp Kitabevleri, 2014 Tıbbi Mikrobiyoloji Laboratuar Kitabı. Mustafa Altındiş, Nobel Tıp Kitabevleri, 2013
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: 1. Describe the methods of specimen collection and transporter for bacteriological investigations 2. Uses the light microscopic for examination of bacterial investigates 3. Understanding the techniques used for identification of bacteria 4. Know different biochemical tests important for identification of bacteria 5- Perform accurately different microbiological techniques for microscopic examination, staining, cultivation and identification of organisms
Course Assessments		Assignment 1: 10.% Assignment 2: 30% Final Exam: 60% Daily Assessments: 10% A 60 % is required for a pass in this course.
Content Breakdown		Topical Coverage



Session 1 (Week 1)	<p>Introduction to bacterial:</p> <ul style="list-style-type: none"> - General Characteristics of bacteria - Taxonomy - Classification of bacteria - Morphology based on size, shape, arrangement, motility, flagella, spores, capsules, cell wall, plasma membrane, pili, ribosomes. <p>Lab: Collection and transport of different specimens</p>
Session 2 (Week 2) Session 3 (Week 3)	<p>Normal microbial flora of human body:</p> <ul style="list-style-type: none"> • General attributes and virulence factors of bacteria causing infections: Exotoxins, enterotoxins, endotoxins, neurotoxins • Host Parasite relationships <p>Harmful Microbial Interactions with Human:</p> <ul style="list-style-type: none"> • Entry of pathogens into the host • Mechanism of bacterial pathogenicity, colonization and growth • Host factors for infection and innate resistance to infection <p>Lab: Operation and maintenance of autoclave, hot air oven, distillation plant</p> <p>Disinfection and sterilization:</p> <ol style="list-style-type: none"> 1. Definitions 2. concepts of disinfection and sterilization 3. types and methods <p>disinfection of different hospital environments, Surgical tools and gowns.</p>
Session 4 (Week 4) Session 5 (Week 5)	<p>Morphology, pathogenicity and laboratory diagnosis of Gram positive organisms- :</p> <ul style="list-style-type: none"> - Gram positive cocci: <p>Staphylococci (pyogenic cocci and coagulase-negative staphylococcus)</p> <ol style="list-style-type: none"> a) Morphology, culture, and biological characteristics of Staphylococcus aureus b) The virulence factors of Staphylococcus aureus and their effects (including SPA, coagulase, hemolysin, and enterotoxin) c) The diagnostic laboratory tests for Staphylococcus aureus and the principles of controlling Staphylococcus infections
Session 6 (Week 6) Session 7 (Week 7)	<p>Streptococcus and enterococcus.</p> <p>Streptococcus (classification)</p> <ol style="list-style-type: none"> a) Morphology, culture, and biological characteristics of Streptococcus b) The virulence factors of group A streptococcus, the pyogenic and non pyogenic infections caused by group A streptococcus, diseases caused by group B, D streptococcus and enterococcus c) The diagnostic laboratory tests for streptococcus and pneumococcus; antistreptolysin O test (ASO test)



Session 8 (Week 8)	Gram positive spore forming bacilli • Bacillus
Session 9 (Week 9)	Gram positive spore forming bacilli • Clostridium
Session 10 (Week 10)	Gram positive non spore forming bacilli • Corynebacterium
Session 11 (Week 11)	- Gram positive non spore forming bacilli Listeria
Session 12 (Week 12) Session 13 (Week 13)	Gram- negative bacteria: Neisseria a) Classification of Neisseria (Neisseria meningitides and Neisseria gonorrhoeae) b) The biological characteristics and pathogenicity of - and immune response to - Neisseria meningitides c) Principles of diagnostic laboratory tests, and principles of prevention and treatment of the diseases caused by Neisseria meningitides d) Neisseria gonorrhoeae and infection
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15) Session 16 (Week 16)	Morphology, pathogenicity and laboratory diagnosis of Enterobacteriaceae-I: - Escherichia coli - Klebsiella
	Morphology, pathogenicity and laboratory diagnosis of Proteus - Shigella
Session 17 (Week 17)	- Enterobacter - Citrobacter - Yersinia - Serratia
Session 18 (Week 18)	- Salmonella Emerging bacterial disease
Session 19 (Week 19)	Non-Enterobacteriaceae: - Pseudomonas - Vibrio
Session 20 (Week 20)	Morphology, pathogenicity and laboratory diagnosis of Gram negative bacteria: - Haemophilus
Session 21 (Week 21) Session 22 (Week 22)	- Bordetella - Rickettsia
Session 23 (Week 23)	Zoonotic bacteria



Session 24 (Week 24)	- Brocella - Basturella - Francecella
Session 25 (Week 25)	Spirochaetes and Syphilis Mycoplasma
Session 26 (Week 26)	Legionella Chamydial infections
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medical Parasitology

1	Course name	Medical Parasitology
2	Course Code	ML302
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	To teach the students general concepts of Parasitology (protozoa), and the taxonomy, biology, epidemiology, diseases caused by medically important parasites, diagnosis and prevention of the diseases they cause; as well as to guide them in their working areas by the basic knowledge they will gain through these lectures & practice the basic skills and techniques as well as the quality control of stool examination
Textbooks and References:	- Atlas of Medical Helminthology and Protozoology - - Textbook of Medical Parasitology: Protozoology and Helminthology, 4 th edition by S. C. Parija.
Course Duration	4 hours per week
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: 1- Demonstrate adequate knowledge and understanding of the scope of medical parasitology together with the basic definitions and terminology as well as classification and nomenclature of protozoan parasites of human 2- Know the biology and taxonomy medical importance parasite. 3- Practice the basic skills and techniques as well as the quality control of stool examination (direct preparation and concentration techniques used for parasites examination) 4- Demonstrate adequate knowledge as well as to describe and discuss the following about parasites: - Biology and morphological characteristics - Lifecycle and transmission - Clinical features - Laboratory detection and identification - Comparison between relevant species - Geographical occurrence and distribution
Course Assessments	Assignment 1: 10.% Assignment 2: 30% Final Exam: 60% Daily Assessments: 10% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1) Session 2 (Week 2)	Introduction to parasitology: - Definitions and terms related to the subject. Parasite - Host – symbiosis, ectoparasite, endoparasite, accidental parasite, obligate parasite, facultative parasite - parasite relationship



	<ul style="list-style-type: none"> - Kinds of parasites – Host- Vectors - Classification and characteristics of parasites scientific nomenclature, type of life cycles, type of hosts Epidemiology of parasites Diagnosis Treatment Prevention and control
Session 2 (Week 2)	<p>Protozoology:</p> <p>Introduction to protozoology.</p> <p>Classification and characteristics of protozoa.</p> <p>Diseases cause by intestinal and urogenital protozoa.</p> <ul style="list-style-type: none"> - Amoebiasis <p>Entamoeba histolytica and other amoebae</p> <ol style="list-style-type: none"> 1-Intestinal amoebiasis. 2-Extra intestinal amoebiasis.
Session 3 (Week 3)	<p>Entamoeba coli</p> <p>E. gingivalis.</p> <p>Endolimax nana</p> <p>Iodamoeba butschlii.</p> <p>Neglaria folari</p>
Session 4 (Week 4)	<p>Mastigophora, general characters.</p> <p>Pathogenic Flagellates</p> <p>Intestinal flagellates.</p> <p>Giardia lamblia.</p> <p>Biology , medical importance and Lab. Diagnosis of each species.</p>
Session 5 (Week 5)	<p>Genus Trichomonas.</p> <p>T. vaginalis/ urogenital flagellate.</p> <p>T. hominis</p> <p>T. tenax</p> <p>Biology , medical importance and Lab. Diagnosis of each species.</p>
Session 6 (Week 6)	<p>Heamo- flagellates (blood & tissue flagellates),general characters.</p> <p>Developmental stages in the vertebrate & invertebrate hosts.</p> <p>Genus leishmania ,species of leishmania, biology, vector, medical importance of eachspecies, types of leishmaiasis , life cycle ,Lab. Diagnosis, including immunological tests.</p>
Session 7 (Week 7)	<p>Genus Trypanosoma, species of trypanosome, biology , vector, medical importance of each species, forms of parasite, life cycle,Lab. Diagnosis.</p>
Session 8 (Week 8)	<p>Apicomplex: General charcter.</p> <p>Sporozoa</p>



	Genus <i>Toxoplasma</i> , <i>T.gondii</i> , Biology, medical Importance, acquired and congenital toxoplasmosis. Life cycle, role of domestic animals in the transmission of the disease. Lab. Diagnosis.
Session 9 (Week 9)	Genus <i>Plasmodium</i> . Introduction to malarial parasites, malarial paroxysm, the general life cycle of the <i>Plasmodium</i> , species of <i>Plasmodium</i> . <i>P.falciparum</i> , <i>P. vivax</i> , <i>P. ovale</i> , <i>P. malariae</i> Disease, pathology, medical importance, distribution, and main differences during the life cycle.
Session 10 (Week 10)	Cryptosporidiosis Genus <i>Cryptosporidium</i> , species belong to the genus, biology, pathology, epidemiology, Lab. diagnosis. Medically important ciliates <i>Blattidinium coli</i> , Biology, medical importance, Lab. Diagnosis.
Session 11 (Week 11)	Helminthology: Introduction, General characteristics of helminths, Classification of helminths
Session 12 (Week 12) Session 13 (Week 13)	Class Trematoda: General characters. Genus <i>Schistosoma</i> . Species of human <i>Schistosoma</i> , life cycle. <i>Schistosoma haematobium</i> . <i>Schistosoma mansoni</i> . Biology of adult worm, habitat, pathogenicity, Lab. diagnosis
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Trematodes other than <i>Schistosoma</i> <i>Fasciola hepatica</i> Biology, life cycle, pathogenicity, Lab diagnosis.
Session 16 (Week 16) Session 17 (Week 17)	Platyhelminth: Class cestoda: General characters. <i>Teania saginata</i> : <i>Teania solium</i> : Morphology & the adult worm and the larval stages of each species, biology, life cycle of each species, pathogenicity of each species, Lab. Diagnosis
Session 18 (Week 18)	Diphyllobothriasis <i>Diplidium caninum</i> , <i>Diphyllobothrium latum</i> , Biology, morphology, pathogenicity of each species, Lab. Diagnosis.
Session 19 (Week 19)	<i>Hymenolepis nana</i> , <i>Hymenolepis diminuta</i> . Biology, morphology, pathogenicity of each species, Lab. Diagnosis.
Session 20 (Week 20)	- <i>Echinococcus granulosus</i> - <i>Echinococcus multilocularis</i> . Biology, life cycle, pathogenicity, medical importance of hydatid cyst disease, Lab. Diagnosis.
Session 21 (Week 21)	- Nematelminths. (round worms)



	<p>Classification of Nematoda, general characters.</p> <p>- Enterobius vermicularis.</p> <p>Biology of adult worm, lifecycle, pathogenicity and medical importance of each species, Lab. Diagnosis of each species.</p>
Session 22 (Week 22)	<p>- Ascaris lambricoides</p> <p>Biology of adult worm, lifecycle, pathogenicity and medical importance of each species, Lab. Diagnosis of each species.</p> <p>- Ancylostoma duodenale, Necator Americanus (Hookworm)</p> <p>Biology, life cycle, pathogenicity, medical importance of each species, Lab. Diagnosis.</p>
Session 24 (Week 24)	<p>- Trichuris trichura.</p> <p>Trichena spiralis.</p> <p>Biology, life cycle, pathogenicity, medical importance of each species, Lab. Diagnosis of each species.</p>
Session 25 (Week 25)	<p>- Strongyloides stercoralis.</p> <p>Biology, life cycle, pathogenicity, medical importance, Lab. Diagnosis.</p> <p>The filariae: Biology, pathogenicity and medical importance of each species, Lab. Diagnosis of each species. Visceral larva migration, Cutaneous larva migration.</p>
Session 26 (Week 26)	<p>Entomology: Arthropods with medical importance.</p> <p>Sand fly, Black fly, Mosquitoes, Ticks & Mites, Fleas</p>
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<p>The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.</p>
Course Change	<p>Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.</p>



Medical Mycology

1	Course name	Medical Mycology
2	Course Code	ML401
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 weeks
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2020
Brief Description:		<p>This course is designed to help the students knowledge about fungi and yeast to enable perform the diagnostic procedure of mycoses.</p> <p>Diagnosis the disease which caused by the fungus & carry out the types of specimens & necessary investigation for various diseases</p>
Textbooks and References:		<p>Medical Microbiology. Jawetz, Melnick and Adelberg's. Latest edition.</p> <p>2. Bailey and Scott's Diagnostic Microbiology. Baron and Finegold. Latest Edition.</p> <p>3. Color Atlas of diagnostic Microbiology. Maza LD, Pezzlo M, Baron E. Mosby-year book Inc., USA. Latest Edition</p> <p>4. Manual of Clinical Microbiology. Murray PR, et al. ASM Press. Latest Edition.</p> <p>5. Manual for the Laboratory Identification and Antimicrobial Susceptibility Testing of Bacterial Pathogens of Public Health Importance in the Developing World. Perilla MJ et al. CDC and WHO.</p> <p>6. District laboratory practice in tropical countries. Monica C. Cambridge Univ. Press. Latest edition.</p> <p>7. Topley and Wilson's Microbiology and microbial infections. Balows A and Sussman M. Hodder Arnold Publication. Latest edition.</p> <p>Zinsser Microbiology. Wolfgang et al. Appelton & Lange Co., CA, USA. Latest</p>
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Perform accurately cultivation of fungi, • Identification by slide culture.



	<ul style="list-style-type: none"> Recognize the pathogenic fungi and gain knowledge about human mycotic infections regarding mode of transmission, pathogenesis, and methods of laboratory diagnosis. Acquire laboratory skills for performing standard techniques in staining and cultivating fungi. Acquire laboratory skills for identification of pathogenic fungi
Course Assessments	Assignment: 40.% Final Exam: 60.% 60% is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	- General Introduction to Medical Mycology
Session 2 (Week 2)	- Definitions and Fungal Terminology - Definition of mycology, fungi, and mycosis fungi - History and Epidemiology of medical mycology. Medical importance, classification, morphology and general characteristics of fungi, reproduction of pathogenic fungi. - Historical Overview and Chytridiomycota,
Session 3 (Week 3)	- Zygomycota Ascomycota, Basidiomycota
Session 4 (Week 4)	- Structure and growth of fungi, mould, yeast-like fungi and dimorphic fungi Reproduction of fungi - Sexual and Asexual
Session 5 (Week 5)	Types of infection and immunity against fungal infections
Session 6 (Week 6)	-Fungi Imperfecti, Conidia and Other Spores
Session 7 (Week 7)	-General Aspects of Fungal Immunology and Pathology -Antifungal Therapeutic Agents
Session 8 (Week 8)	-The Superficial Mycoses -Dermatophytosis and the dermatophytes Tinea types and Dematiaceus (black fungi).
Session 9 (Week 9)	-Introduction to Subcutaneous Mycoses, with emphasis on those caused by dematiaceous (black) fungi
Session 10 (Week 10)	Chromoblastomycosis -Phaeohyphomycosis, Mycetoma, Other Diseases Caused by Black Fungi
Session 11 (Week 11)	-Sporotrichosis
Session 12 (Week 12)	Introduction to the Pathogenic Yeasts & Candidiasis
Session 13 (Week 13)	-Cryptococcosis
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Histoplasmosis
Session 16 (Week 16)	-Blastomycosis
Session 17 (Week 17)	-Coccidioidomycosis
Session 18 (Week 18)	- Aspergillosis



Session 19 (Week 19)	-Fungal Allergies, Mushrooms
Session 20 (Week 20)	-Mushroom Poisonings & Mycotoxins
Session 21 (Week 21)	Opportunistic fungal infections
Session 22 (Week 22)	Mucor and Penicilloles.
Session 23 (Week 23)	Antibiotics produced by fungi
Session 24 (Week 24)	Antifungal agents
Session 25 (Week 25)	Mycotoxins
Session 26 (Week 26)	
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	-Fungal culture - Culture Media used for fungus. -Types of Mycosis that infected human -Superficial Mycosis (types of Tinea infection) -Cutaneous Mycosis -Sub-cutaneous Mycosis -Systemic Mycosis Biochemical testes to diagnosis fungal
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Clinical Hematology and Blood Bank

1	Course name	Clinical Hematology and Blood Bank
2	Course Code	ML304
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	<p>The course provides knowledge about hematology, formation, physiological and pathological basis, and function of blood cells which building on blood diseases. In addition to, the Medical Lab student will understand the basis and clinical hematology in order to gain skills in the clinical work.</p> <p>To learn the basic tests and the principal of these tests used for the diagnosis of hematological diseases To learn a basic information related to blood components, blood cells, to know the main principles of the tests and the critical points when working those tests</p>
Textbooks and References:	<ol style="list-style-type: none"> 1. John P. Greer, John Foerster, John N. Lukens: <i>Wintrobe's Clinical Hematology</i>, 11th edition <i>Lippincott Williams & Wilkins, 2003</i> 2. Ronald Hoffman. Edward J. Benz Jr. Sanford J. Shattil: <i>Hoffman: Hematology: Basic principles and practice</i>; 3rd edition, <i>Churchill Livingstone New York 2000</i> 3- Henry's Clinical Diagnosi and Management 23. baskı 2017 Elsevier Genetics and blood Haemoglobinopathies and clotting disorders Reprinted from Australian Family Physician Vol. 36, No. 10, October 2007 4- Red Blood Cell Indices: Implications for Practice Newborn and Infant Nursing Reviews, Vol 4, No 4 (December), 2004: pp 231–239
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Understand the different types of blood elements include erythrocytes, leukocytes, and platelets. Although detailed morphologic descriptions and functional characteristics of blood cells. 2. Understand the origin and development of blood cells and the pathogenesis of hematological diseases and disorder. 3. Understand the biosynthesis, function and metabolism of hemoglobin. 4. Understand the instruction of laboratory practice focus on routine manual procedures in hematology such as complete blood count, and differential count. <p>Hematopoiesis, Hemoglobin synthesis and disorders Red and white blood cells disorders Blood coagulation and clotting disorders Diagnostic hematology and advanced diagnosis and cares studies know basic laboratory techniques used in the field of hematology</p>



	<p>Knowledge and practice of laboratory working principles and safety.</p> <p>to know his/her responsibilities within the laboratory</p>
Course Assessments	<p>Assignment 1: 10.0%</p> <p>Assignment 2: 30%</p> <p>Final Exam: 60% Daily Assessments: 10%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Introduction of hematology (Definition of blood, importance)</p> <ul style="list-style-type: none"> - Physical properties of blood. - The general functions of the blood. - The formation of blood cells.
Session 2 (Week 2)	<p>Hemopoiesis</p> <p>Definition of blood and its formed elements</p> <p>Hematopoietic organs</p>
Session 3 (Week 3)	<p>Erythropoiesis , morphology of RBCs, cell membrane of RBCs, metabolism of RBCs, and destruction</p> <p>Red cell production.</p> <p>Factors affecting erythrocyte coagulation</p> <p>baptized red cells</p> <p>The fate of red cells</p>
Session 4 (Week 4) Session 5 (Week 5)	<p>Hemoglobin (structure, synthesis and levels in blood and in erythrocytes)</p> <p>Function of Hemoglobin, Normal and abnormal types of hemoglobin</p> <p>Hemoglobin breakdown & clinical significant (hemoglobin pigments)</p> <ul style="list-style-type: none"> - Laboratory analysis of hemoglobin, and hematocrit assay (manual & automated) <p>Hemoglobin concentration measurement</p>
Session 6 (Week 6)	<p>Study the shape of red ball</p> <p>coloration level</p> <p>Hematocrit measurement.</p> <p>Measure and calculate absolute MCHC values. MCH. MCV</p> <p>Erythrocyte sedimentation rate (ESR):</p> <p>Definition, factor affecting ESR, and the clinical significant</p>
Session 7 (Week 7)	<p>Erythrocyte abnormalities (Anemia):</p> <ul style="list-style-type: none"> - Definition, causes and classification of anemia - MICROCYTIC ANEMIA
Session 8 (Week 8)	<p>Iron deficiency anemia:</p> <ul style="list-style-type: none"> - Metabolism of iron, iron intake (dietary), absorption, transport, & body storage



	<ul style="list-style-type: none"> - Iron pathway disorders Iron deficiency anemia, causes, symptom - Laboratory findings in iron deficiency
Session 9 (Week 9)	<p>The hereditary anemias: (hemolytic anemia):</p> <ul style="list-style-type: none"> - Classification and causes of hemolytic anemia - Hereditary hemolytic anemias due to enzyme disorders, G6PDH and its measurements - Hereditary spherocytosis and other anemias due to abnormalities of the red cell membrane - Autoimmune hemolytic anemias - Laboratory features and diagnosis for each type
Session 10 (Week 10)	<ul style="list-style-type: none"> - Sickle cell anemia and other sickling syndromes - Hemoglobin S: clinical features (trait and disease) - Sickling test and morphologic abnormalities in sickling disorder
Session 11 (Week 11)	<ul style="list-style-type: none"> - The thalassemia: Classification of thalassemia: diagnosis and lab finding
Session 12 (Week 12)	<p>-MACROCYTIC ANEMIA:</p> <ul style="list-style-type: none"> - Megaloblastic anemia (B12 deficiency: Definition, causes of megaloblastic anemia and diagnosis) and pernicious anemia Folate-deficiency (causes, diagnosis). - Metabolism of vitamin B12 and/or folic acid vitamins
Session 13 (Week 13)	Aplastic anemia
Session 14 (Week 14)	Midterm exam
Session 15 (Week 15)	Polycythemia
Session 16 (Week 16)	<p>Leukopoiesis:</p> <p>White blood cells(classification and general functions of each one)</p> <ul style="list-style-type: none"> - Origin and development of myeloid, lymphoid, and monocytes series - Control mechanism of leukopoiesis production
Session 17 (Week 17)	<ul style="list-style-type: none"> - Leukocyte disorders: - Leukocytosis & leucopenia. - Definitions & causes of the following: - Neutrophilia, Neutropenia, Lymphocytosis, eosinophilia, and basophilia - Morphologic abnormalities in leukocytes Disorders of lymphocytes
Session 18 (Week 18) & Session 19 (Week 19)	<ul style="list-style-type: none"> - Malignant diseases of WBCs - Leukemia: (briefly discuss) Definitions, etiology and classification of leukemia -Acute leukemia



	Classification and differentiation of the acute leukemia - Morphologic abnormalities in acute leukemia Diagnosis
Session 20 (Week 20)	-Chronic leukemia (chronic lymphocytic leukemia , chronic myeloid leukemia) Classification and differentiation of the chronic leukemia - Morphologic abnormalities in chronic leukemia Diagnosis
Session 21 (Week 21)	Lymphoma (Hodgkin's lymphoma , causes, lab. Findings) Non-Hodgkin's lymphoma , causes and lab.findings
Session 22 (Week 22)	Thrombocytopoiesis Platelets (morphology and general functions) - Origin, development and control of thrombocytes - The role of thrombocytes in hemostasis Platelets, structural and functional anatomy
Session 23 (Week 23)	- Normal hemostasis & congenital abnormalities
Session 24 (Week 24)	- Vascular (Non-thrombocytopenic Purpura)
Session 25 (Week 25)	- Thrombocytosis & thrombocytopenia, types and causes
Session 26 (Week 26)	- Hemophilia (definition, causes, classification and symptoms)
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Immunology

1	Course name	Immunology
2	Course Code	ML305
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course aims to introduce up to date, basic immunology concepts at a level suitable for students with little prior exposure to immunology. Course Lectures and laboratory emphasize detection, identification, nature of innate immunity, antigens and antibodies, and the antigen-antibody reaction encountered, quantities cells involved in immune responses, and quantities blood proteins produced in response to infection, malignancy or tissue damage or which play a role in protecting the body against these changes.
Textbooks and References:		1. Abul K. Abbas & Andrew H Lichtman. <i>Basic immunology</i> : 2nd edition, Saunders publishers: 2004 Daniel C, Thomas B. <i>Manual of allergy and immunology: Diagnosis and therapy</i> : 4th edition: Lippincott William & Wilkins Publishers; 2002.. - Gabriel Virella, <i>Medical Immunology</i> , 2001. - Parslow, Tristram G.; Stites, Daniel P.; Terr, Abba I.; Imboden, John B., 10th edition, <i>Medical Immunology</i> , 2001.
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: 1. Understand the definition and basis of immunology in order to understand the immune response to different infections. 2- Explain the body mechanisms and immune response 3- Understand the different cells, tissues and organs of immune system 4- Define antigen-antibodies 5- Know the immunological techniques and serological methods used in diagnosis of infectious diseases. learning outcomes 6- Immunization of animals and analysis of immune response using different techniques as precipitation, agglutination, ELISA ...



Course Assessments	Assignment 1: 10.% Assignment 2: 30% Final Exam: 60% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to Immunology, the immune system
Session 2 (Week 2)	Cells of the immune system and lymphoid system organs– primary and secondary
Session 3 (Week 3)	Types of immunity Natural immunity Acquired immunity
Session 4 (Week 4)	Antigen, Haptens and Adjuvants
Session 5 (Week 5)	Cellular immunity & humoral immunity
Session 6 (Week 6)	Cell-mediated immune responses Effector mechanisms of cell-mediated immunity
Session 7 (Week 7)	Humoral immune responses and effector mechanisms
Session 8 (Week 8)	Complement system
Session 9 (Week 9)	Cytokines
Session 10 (Week 10)	Immune responses against infectious diseases
Session 11 (Week 11)	Tumor immunology
Session 12 (Week 12)	Immune responses against tumours and transplants
Session 13 (Week 13)	Immunological tolerance and autoimmunity
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Congenital and acquired immunodeficiencies
Session 16 (Week 16)	Hypersensitivity (allergic)
Session 17 (Week 17)	Transplantation & MHC structure and functions
Session 18 (Week 18)	Vaccinology : Principles and practice
Session 19 (Week 19)	Disorders of the immune system.
Session 20 (Week 20)	- Serology; introduction and importance.
Session 21 (Week 21)	- Antigen, antibody and basis of antigen antibody reactions. Zone phenomenon.
Session 23 (Week 23)	- Agglutination; slide agglutination and anti-globulin agglutination. - Latex agglutination (immunologic pregnancy test, rheumatoid factor latex test and CRP). Coagglutination, virus haenagglutination and heterophile antibodies agglutination tests.
Session 24 (Week 24)	- Precipitation; tube precipitation, agar gel diffusion. - Precipitation in agar with an electric field; immunoelectrophoresis and Western Blot test.
Session 25 (Week 25)	- Complement fixation, toxin antitoxin neutralization and virus neutralization. - Immunofluorescence (direct, indirect) and ELISA. - Radioimmunoassay and immunochromatographic technique.



Session 26 (Week 26)	- Assessment of the immune competence; assessment of B cell competence, assessment of T cell competence, assessment of phagocytic functions and assessment of complement. - Type one hypersensitivity mechanism and diagnosis. - Automated Procedures - Instrumentation.
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.

Research Methodology

1	Course name	Research Methodology
2	Course Code	ML307
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course focuses on the framework of the research process and to the use of basic statistics in the health field and the interpretation of results for improvement of levels of care an evaluation of action taken
Textbooks and References		- Fundamental of Research Methodology and Statistics - - Research-Methods-in-Education-sixth-edition
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		Upon completion of this course, the students will have reliably demonstrated the ability to: a. Utilize the steps of the research process. b. Recognize the importance of statistical analysis in their field of work c. Utilize descriptive statistics to analyze data from Medical Science project.



	<p>Learning outcomes Knowledge and understanding:</p> <ul style="list-style-type: none"> - Develop awareness on the importance of research in building nursing knowledge and guiding practice. - Discuss the research process and each of its steps. - Describe the characteristics of a researchable problem. - Recognize how to state research aim, questions and hypotheses. - Recognize the different types of research design. - Identify different methods of data collection. - Recognize sampling technique. <p>Cognitive skills (thinking and analysis).</p>
Course Assessments	<p>Assignment 1: 10.% Assignment 2: 30% Final Exam: 60% 60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>introduction:</p> <ul style="list-style-type: none"> - Definition of scientific research - Types of research
Session 2 (Week 2)	<p>Research Methodology:</p> <ul style="list-style-type: none"> - Definition and identification of the problem. Ethical issues in research - Formulation of the hypothesis
Session 3 (Week 3) Session 4 (Week 4)	<ul style="list-style-type: none"> - Sample & Sampling Collection of information - Presentation of the results - Interpretation of the results - Conclusion and recommendations
Session 5 (Week 5)	<p>Research Methods:</p> <ul style="list-style-type: none"> - Scientific observation. - Questionnaire. - Interview.
Session 6 (Week 6)	<p>A. The empirical phase</p> <ol style="list-style-type: none"> 1. Measurement and the assessment of quantitative data <ol style="list-style-type: none"> a. Definition of measurement b. Levels of measurement c. Advantages of measurement
Session 7 (Week 7)	<ol style="list-style-type: none"> 2. Reliability <ol style="list-style-type: none"> a. Three important aspects of reliability (stability, internal consistency and equivalence)
Session 8 (Week 8)	<ol style="list-style-type: none"> 3. Validity <ol style="list-style-type: none"> a. Three important aspects of validity (content validity, criterion- related validity & construct) b. Sensitivity and specificity B. The Analytical phase
Session 9 (Week 9) Session 10 (Week 10)	<ol style="list-style-type: none"> 1. Analyzing the quantitative and qualitative data <ol style="list-style-type: none"> a. Descriptive data analysis b. Inferential data analysis c. Classification of statistics d. Criteria for selecting statistical tool
Session 11 (Week 11)	<p>D. Writing the final research report (handout on research report) (Format will be given to the students during the discussion)</p>



Session 12 (Week 12)	E. Critiquing of research reports
Session 13 (Week 13)	a. Guidelines for use in critiquing reports
Session 14 (Week 14)	Midterm Exam
Session 15(Week 15)	Writing the thesis report: Title
Session 16 (Week 16)	Acknowledgement Table of content
Session 17 (Week 17) Session 18 (Week 18)	Summary
Session 19 (Week 19)	Introduction
Session 20 (Week 20)	Aim of the study
Session 21 (Week 21)	Material and Methods
Session 23 (Week 23)	Results and Discussion
Session 24(Week 24)	Conclusion Recommendations
Session 25 (Week 25)	Appendices
Session 26 (Week 26)	References
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
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Pathology

1	Course name	Pathology
2	Course Code	ML308
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Histology
7	Program offered the course	Medical Laboratory



8	Instruction Language	English
9	Date of course approval	2022
Brief Description:	This course will provide the students with the general concept of Pathophysiology. That will be discussed with appropriate reference to the general pathologic process due to cellular stress. An organized system review of the commonest diseases with adequate insight into causes, clinical manifestations, and diagnosis will be covered.	
Textbooks and References:	Required textbook & Study Guide: Huether, S. E., & McCance, K. L. (2004). Understanding Pathophysiology (4th ed.) St. Louis, MO: Mosby Elsevier. Book: Robin`s Pathology .	
Course Duration	4 hours per week	
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.	
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: 1- To develop an understanding of the causes and mechanisms of disease and the associated alterations of structure and function. 2 - To develop skills of observation, interpretation, and integration needed to analyze human disease. When provided with the anatomical lesions, and the laboratory data of a patient, to determine the most likely diagnosis and explain the pathogenesis of the disease.	
Course Assessments	Assignment 1: 10.% Assignment 2: 30% Final Exam: 60% 60 % is required for a pass in this course.	
Content Breakdown	Topical Coverage	
Session 1 (Week 1)	Introduction to Pathology Cell and tissue injury, heat injury, degeneration, necrosis, apoptosis Cellular Pathology Cellular Adaptations of Growth and Differentiation • Hyperplasia • Hypertrophy	
Session 2 (Week 2)	• Atrophy • Metaplasia	
Session 3 (Week 3)	Cell Injury and Cell Death	
Session 4 (Week 4)	Intracellular Accumulations • Lipids • Proteins	
Session 5 (Week 5)	• Glycogen	



	<ul style="list-style-type: none"> • Pigments
Session 6 (Week 6)	Tissue Regeneration and Repair <ul style="list-style-type: none"> • Regeneration • Repair: scar formation
Session 7 (Week 7)	<ul style="list-style-type: none"> • Fibrosis
Session 8 (Week 8)	<ul style="list-style-type: none"> • Healing in Specialized Tissue e.g. healing of fracture
Session 9 (Week 9)	Haemodynamic Disorders, Thrombosis and Shock <ul style="list-style-type: none"> • Edema
Session 10 (Week 10)	<ul style="list-style-type: none"> • Hyperaemia and Congestion
Session 11 (Week 11)	<ul style="list-style-type: none"> • hemorrhage • Haemostasis and Thrombosis • Embolism • Infarction • Shock
Session 12 (Week 12)	Endocrine Function
Session 13 (Week 13)	<ul style="list-style-type: none"> • Hypopituitarism • Hypopituitarism • Diabetes Mellitus • Goiter • Hypothyroidism • Hyperthyroidism
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Neoplasia
Session 16 (Week 16)	<ul style="list-style-type: none"> • Nomenclature <ul style="list-style-type: none"> o Benign tumors o Malignant tumors • Characteristics of benign and malignant tumors <ul style="list-style-type: none"> o Differentiation o Local Invasion
Session 17 (Week 17)	<ul style="list-style-type: none"> o Metastasis • Epidemiology o Cancer Incidence <ul style="list-style-type: none"> o Geographic and Environmental Factors
Session 18 (Week 18)	<ul style="list-style-type: none"> o Carcinogenic Agents o Age o Genetic predisposition
Session 19 (Week 19)	<ul style="list-style-type: none"> o Acquired predisposing conditions • Clinical Aspects of Neoplasia <ul style="list-style-type: none"> o Local and Hormonal Effects
Session 20 (Week 20)	<ul style="list-style-type: none"> o Cancer Cachexia o Paraneoplastic Syndromes
Session 21 (Week 21)	Diseases of the Immune System <ul style="list-style-type: none"> • Hypersensitivity Reactions



	<ul style="list-style-type: none"> • Autoimmune Diseases
Session 22 (Week 22)	<ul style="list-style-type: none"> o Systemic lupus erythematosus o Sjogren syndrome
Session 23 (Week 23)	<ul style="list-style-type: none"> o Systemic sclerosis (scleroderma) • Immunodeficiency Syndromes
Session 24 (Week 24)	<ul style="list-style-type: none"> o Acquired immunodeficiency syndrome • Amyloidosis <p>Environmental and Nutritional Diseases</p> <ul style="list-style-type: none"> • Industrial and Agricultural Exposures • Effects of Tobacco • Effects of Alcohol
Session 25 (Week 25) Session 26 (Week 26)	<ul style="list-style-type: none"> • Adverse Drug Reactions • Drug Abuse • Poisoning • Radiation Injury • Nutritional Deficiencies: Vitamins, Minerals • Obesity <p>Infectious Diseases</p> <ul style="list-style-type: none"> • Viruses • Bacteria • Fungi • Protozoa • Helminths
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
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Diagnostic Microbiology

1	Course name	Diagnostic Microbiology
2	Course Code	ML400
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Medical laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Diagnostic microbiology: This course is mainly practical. It deals with the laboratory diagnosis of infections of several human anatomical sites and /or fluids.
Textbooks and References:		Bailey & Scott's Diagnostic Microbiology, 13e (Diagnostic Microbiology (Bailey & Scott's). - Textbook of diagnostic microbiology 4th edition. - Monica part 2
Course Duration		56 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: 1. Describe the aetiologies, epidemiology and basic mechanisms of pathogenesis of infectious diseases. 2. Describe the basic principles of diagnosis, antimicrobial treatment, prevention and control of infectious diseases in the hospital and community. 3. Describe the host immune system and explain the host response to infection 4. Understand and interpret basic laboratory tests for the diagnosis of infectious diseases. 5. Apply the principles of molecular and immunological techniques for the diagnosis of infectious diseases. 6. Analyze and solve case studies involving bacterial and fungal agents
Course Assessments		Assignment 1: 10% Assignment 2: 30% Final Exam: 60 %



	60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	- Diagnostic Microbiology: purpose and philosophy
Session 2 (Week 2)	- Introduction to Clinical Microbiology - Terms and definitions General safety considerations Biohazards and practices specific to microbiology in general (Biological safety cabinet –Protective clothing Decontamination - Personal practice Classification of biological agents on the basis of hazard Special precautions for specific areas of clinical microbiology
Session 3 (Week 3)	Isolation and identification of pathogens Rapid detection of infectious agents (Visual test -Agglutination methods-Automation- ELISA-RIA-HPLC-PCR -Other strategies
Session 4 (Week 4)	- Clinical Specimens Used for the Diagnosis of Infectious Diseases
Session 5 (Week 5)	Proper Selection, collection, and transport of clinical specimens for microbiological examination
Session 6 (Week 6)	General Clinical Microbiology Laboratory Methods
Session 7 (Week 7)	Examination of fresh material Optical methods for laboratory diagnosis and microorganisms identification(Preparation of a smear -Gram stain -Acid-fast stain -Differential stains for parasites -Differential stains for blood smear and tissue sections -Fungal stains -Acridine orange -Rhodamine-auramine
Session 8 (Week 8)	Culture media Preparation and characteristics of certain frequently used media (Simple, complex, Rich, enriched, selective and differential)
Session 9 (Week 9)	Microorganisms encountered in blood
Session 10 (Week 10)	Microorganisms encountered in cerebrospinal fluid
Session 11 (Week 11)	Microorganisms encountered in respiratory tract
Session 12 (Week 12)	Microorganisms encountered in the Gastrointestinal tract
Session 13 (Week 13)	Microorganisms encountered in urinary tract
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	- Genital and sexually transmitted pathogens



Session 16 (Week 16)	- Microorganisms encountered in wounds, abscesses, skin, and soft tissues
Session 17 (Week 17)	- Anaerobic pathogens
Session 18 (Week 18)	- Microorganisms encountered in bone marrow, and related fluids
Session 19 (Week 19)	Normal sterile body fluids, bone and bone marrow and solid tissue
Session 20 (Week 20)	Specimens from sterile body sites -Laboratory diagnosis
Session 21 (Week 21)	-Laboratory methods in basic mycology
Session 22 (Week 22)	Fungal Infections (Introduction to Medical Mycology- Laboratory Diagnosis of Selected Fungal Infections Collection, and transport of clinical specimens -Direct microscopic examination -Culture
Session 23 (Week 23)	-Laboratory methods diagnosis parasitic infections Parasitic Infections (Introduction to Medical Parasitology - Laboratory Diagnosis of Selected Protozoal and Helminth Infections
Session 24 (Week 24)	Specimen collection and transport -Specimen processing -Microscopic examination
Session 25 (Week 25)	- Laboratory methods in basic virology Viral Infections (Introduction to Medical Virology - Laboratory Diagnosis of Selected Viral Infections) Specimen selection and collection -Specimen transport and storage -Specimen processing Virus detection methods Cytology and histology -Electron microscopy Immunodiagnosis (antigen detection)
Session 26 (Week 26)	-Molecular detection -Cell culture -Serology (antibody detection)
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy



	and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medical Virology

1	Course name	Medical Virology
2	Course Code	ML303
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course is designed to help the student's knowledge about the types, structure classification, and medical significance of viruses.
Textbooks and References:		GJ Tortora, BR Funke, CL Case, 2010, Microbiology, an introduction. Ninth edition by. Pearson Education, Inc. - RA Harvey, PL Champe, BD Fisher L, 2007, Lippincot's Illustrated Reviews: Microbiology. 2nd Edition by. Lippincott's Williams and Wilkins
Course Duration		56 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: To know the definition and basis classification of viruses 2. To understand the medical significance of viruses 3. To know the different methods for laboratory diagnosis of viruses 4. Carry out rapid serological test to detect antigens and titer of viral antibodies
Course Assessments		Assignment 1: 10.%



	Assignment 2: 30% Final Exam: 60% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1) Session 2 (Week 2)	Introduction to Virology <ul style="list-style-type: none"> - Definition - General properties, Morphology and Structure - Classification - Host cell reactions - Pathogenesis, How viruses cause disease - Prevention - Chemotherapy - Laboratory diagnosis
Session 3 (Week 3)	DNA viruses: <ul style="list-style-type: none"> - Viruses with single stranded DNA genomes - Viruses with double stranded DNA genomes
Session 4 (Week 4)	- Papillomaviruses.
Session 5 (Week 5)	- Polyomaviruses
Session 6 (Week 6)	- Adenoviruses
Session 7 (Week 7)	- Herpesviruses
Session 8 (Week 8)	- Poxviruses
Session 9 (Week 9)	- Hepadnaviruses: Hepatitis B Virus and Hepatitis D Virus
Session 10 (Week 10)	RNA Viruses Viruses with Single-Stranded RNA Genomes <ul style="list-style-type: none"> - Picornaviruses
Session 11 (Week 11)	Astrovirus and Calicivirus; Hepatitis E. Astroviruses.
Session 12 (Week 12)	- Caliciviruses
Session 13 (Week 13)	- Hepatitis E Virus
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	- Togaviruses
Session 16 (Week 16)	- Flaviviruses
Session 17 (Week 17)	- Coronaviruses
Session 18 (Week 18)	- Retroviruses
Session 19 (Week 19)	- Human Immune Deficiency Virus (HIV)
Session 20 (Week 20)	Viruses with Double-Stranded RNA Genomes. Reoviruses
Session 21 (Week 21)	Viruses with Single-Stranded RNA Genomes, <ul style="list-style-type: none"> - Orthomyxoviruses
Session 23 (Week 23)	<ul style="list-style-type: none"> - Bunyaviruses. - Arenaviruses
Session 23 (Week 23)	<ul style="list-style-type: none"> - Paramyxoviruses - Rhabdoviruses
Session 24 (Week 24)	- Filoviruses (Marburg and Ebola Viruses)



Session 25 (Week 25)	- Viruses and cancer
Session 26 (Week 26)	Antiviral chemotherapy and Control of viral disease by immunization
Session 27 (Week 27) Session 29 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Techniques of diseased cells and tissues

1	Course name	Techniques of diseased cells and tissues
2	Course Code	ML402
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	Histology + Pathology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The basic knowledge of pathology such as cell structure, tissue types, cell division, tissue repairing, inflammation, infection are given in the theoretical lessons. The steps of histopathological analysis should be given as practical lessons.
Textbooks and References:		1. Text book of Medical Laboratory Technology by Paraful B. Godkar-3rd edition 2. Medical Laboratory Technology by Ochei and A. Kolhatkar-2nd edition



	<p>3. https://www.pdfdrive.com/introduction-to-histology-and-basic-histological-techniques-e34466492.html</p> <p>4. https://www.pdfdrive.com/kuby-immunology-7th-edition-2013-e44842271.html</p> <p>5. https://www.pdfdrive.com/harsh-mohan-textbook-of-pathology-e52206258.html</p>
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Understand histological principles and the equipments used in laboratory 2. Describe the basic principles of histotechnology and perform histotechnological techniques in the laboratory. 3. Describe and define laboratory techniques for preparing cell, tissue specimens and their components for microscope analysis 4. Describe and recognise cells of specific histologic tissues and organ systems
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2:10 %</p> <p>Final Exam: 60%</p> <p>A 60% is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Introduction to histotechnology, cell constituents
Session 2 (Week 2)	<p>Inflammation, Repair&Degeneration</p> <p>Acute Inflammation</p> <p>Chronic Inflammation</p> <p>Repair, healing&Regeneration</p> <p>Retrograde, changes, Degeneration</p> <p>Atrophy Necrosis, cloudy swelling</p> <p>Gangrene</p>
Session 3 (Week 3)	<p>Criteria used for cytopathological diagnosis of cancer</p> <p>Changes in the cytoplasm in malignancy</p> <p>Changes in the nucleus in malignancy</p> <p>Changes in cell as a general in malignancy</p> <p>Nomenclature of tumors</p> <p>Classification of tumors</p>
Session 4 (Week 4)	<p>- Care and maintenance of laboratory equipment used in histotechnology</p> <p>. Safety measures in a histopathology laboratory</p>



	. Basic concepts about routine methods of examination of tissues
Session 5 (Week 5)	Collection and transportation of specimens for histological examination
Session 6 (Week 6)	Tissue processing Fixation, dehydration ,clearing ,embedding 1- Fixation&Fixatives Basic concepts of fixation Theoretical aspects of Fixation Various types of fixatives used in a routine histopathology laboratory Most common fixatives in common use i. Simple fixatives ii. Compound fixatives iii. Special fixatives for demonstration of various tissue elements Fixation for special substances Specializes Techniques for individual tissue & fixation
Session 7 (Week 7)	Decalcification a. Criteria of a good decalcification agent b. Technique of decalcification followed with selection of tissue, fixation, decalcification, neutralization of acid and thorough washing. c. Various types of decalcifying fluids: Organic & Inorganic Acid, chelating agents, Use of Ion-exchange resins and Electrophoretic decalcification and treatment of hard tissues which are not calcified.
Session 8 (Week 8)	Tissue processing Fixation, dehydration ,clearing ,embedding Factors influencing rate of impregnation Agitation, heat, viscosity, ultrasonics, vacuum
Session 9 (Week 9)	Processing of various tissues for histological examination a. Embedding i. Definition ii. Various types of embedding media iii. Procedure followed by Dehydration, Clearing, Infiltration and routine timing schedule for manual or automatic tissue processing. iv. Components & principles of various types of automatic tissue processors
Session 10 (Week 10)	Section Cutting a. Introduction regarding equipment used for sectioning b. Microtome Knives, Sharpening of Microtome Knives, Honing, Stropping, various types of microtome and their applications c. Freezing Microtome and various types of Cryostats. d. Faults in paraffin section cutting with reason and remedy, spreading the sections and attachment or mounting of sections to glass slides.
Session 11 (Week 11)	Microtomy and paraffin section
Session 12 (Week 12)	Staining of tissue sections
Session 13 (Week 13)	Impregnation and Mountants a. Theory of Staining, Classifications of Dyes, Principles of Dye Chemistry,



	<p>b. Stains and Dyes and their uses,</p> <p>c. Types of Stains, Chemical Staining Action, Mordants and Accentuators, Metachromasy.</p> <p>d. Use of Controls in Staining Procedures,</p> <p>e. Preparation of Stains, solvents, aniline water and buffers etc.,</p> <p>f. Commonly used mountants in histotechnology lab.</p>
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	<p>g. General Staining Procedures for Paraffin Infiltrated and Embedded tissue.</p> <p>h. Nuclear Stains and Cytoplasmic stains</p> <p>i. Equipment and Procedure for manual Staining and Automatic Staining Technique.</p> <p>j. Mounting of Cover Slips, Labeling and Cataloguing the Slides.</p>
Session 16 (Week 16)	<p>Staining of tissuesections</p> <p>Routine Staining Procedures</p> <p>a. Haematoxylin and Eosin Staining, various types of Haematoxylins</p>
Session 17 (Week 17)	b. Mallory's Phosphotungstic Acid Haematoxylin (PTAH)
Session 18 (Week 18)	Staining of tissuesections
Session 19 (Week 19)	<p>connective tissue, stains</p> <p>Special stains for proteine, carbohydrates, lipid, mucosubstance, pigments minerals, apud cell and microorganisms</p>
Session 20 (Week 20)	<p>Preparationof bone sections</p> <p>Demonstration of cytoplasmic granules organells and social tissue</p>
Session 21 (Week 21)	<p>Neuropathological techniques</p> <p>Enzyme histochemistry and aplicaton</p>
Session 22 (Week 22)	Immunohistochemistry and application
Session 23 (Week 23)	Resin embedding media
Session 24 (Week 24)	<p>Electron microscopy –techniques–Diagnostic uses</p> <p>Histometry and diagnostic uses</p>
Session 25 (Week 25)	Immunofluorescence Techniques
Session 26 (Week 26)	Museum and other demonstration techniques
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their



	lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Body fluids

1	Course name	Body fluids
2	Course Code	ML403
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2 units
5	Educational hours	2 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<p>This course provides the students with a broad knowledge about body fluid. The course includes study of normal and abnormal body fluid, their different types, formation, composition, microscopic characteristics, locations, distribution and functions in the human body and of the different organ system and their respective roles and function in the organization of the body</p> <p>The anatomy and physiology of the urinary system and the normal and abnormal composition of urine will be reviewed and expanded. In addition, the normal and abnormal composition of cerebrospinal, synovial, pericardial, plural, seminal, and peritoneal fluids fluid will be reviewed. Laboratory testing of body fluids for normal and abnormal constituents, sources of error, and clinical correlation with various disease states will be presented.</p>
Textbooks and References:		<p>- Body Fluids Morphology Bench Guide</p> <p>- Detroit Speed, Inc. - 1967-1969 F-Body – Fluid</p>
Course Duration		56 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.



Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Use an understanding of the normal and abnormal constituents of body fluids and their correlation with appropriate pathologic conditions to make appropriate and effective on-the-job professional decisions. 2. Apply appropriate laboratory techniques, methodologies, instruments and equipment; and accurately calculate, record, and tabulate data to improve patient care. 3. Adapt laboratory techniques and procedures in a corrective manner when errors and discrepancies in results are obtained to affect resolution in a professional and timely manner.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>A 60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	1. Safety in clinical laboratory.
Session 2 (Week 2) Session 3 (Week 3)	2. Structure and function of the urinary system - Urine formation and composition of urine, Normal composition of urine, Organic components - Urea, uric acid, creatine, creatinine, amino acids, hippuric acid
Session 4 (Week 4)	Inorganic components - Cations – Na+, K+, Ca+, Mg+ and NH ₄ ⁺ - Anions- Cl-, SO ₄ ⁻ , and HPO ₄ ⁻
Session 5 (Week 5)	Abnormal composition of urine Describe the definition, causes and clinical applications of the following: Protein (proteinuria), Sugar (glucosuria), ketone bodies, acetone (ketouria), bile acids, bilirubin, urobilinogen, and nitrite Renal stones: formation, composition and analysis
Session 6 (Week 6)	Routine examination of urine Physical examination (normal & abnormal) Urine volume, color, pH, appearance, specific gravity and odor
Session 7 (Week 7)	Chemical examination Urine albumin, Bence-jones protein, glucose, acetone, bilirubin, urobilinogen and nitrite
Session 8 (Week 8)	Microscopic examination White & red blood cells, epithelial cells, casts, crystals (different types), normal and pathogenesis
Session 9 (Week 9)	Urinalysis report Interpretation of the results for routine urinalysis
Session 10 (Week 10)	Cerebrospinal fluids (CSF): Overview of CSF - Sampling, lumbar puncture



	Description, function & normal composition of CSF CSF color and appearance (normal & abnormal)
Session 11 (Week 11)	Microscopic examination: total cell count, RBCs and WBCs and differential cell count
Session 12 (Week 12) Session 13 (Week 13)	Biochemical components: glucose, LDH, protein and serological tests Effects of different meningitis on biochemical components of CSF Normal CSF reference rang and differences from child hood and adult value
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15) Session 16 (Week 16)	<ul style="list-style-type: none"> • Ascetic, pleural and peritoneal: • Description: exudates and transudate effusions • Normal and abnormal composition
Session 17 (Week 17)	Physical and biochemical studies: protein content, glucose, amylase and LDH level
Session 18 (Week 18)	Microscopically examination: cell content and differential
Session 19 (Week 19) Session 20 (Week 20)	Seminal fluids: Definition, formation of semen, hormonal effects on semen formation Sample collection
Session 22 (Week 21)	analysis of semen – physical, microscopical and chemical examination (fructosamine)
Session 22 (Week 22)	chemical examination (fructosamine)
Session 23 (Week 23)	synovial fluid
Session 24 (Week 24)	sputum
Session 25 (Week 25)	stool
Session 26 (Week 26)	Other fluids
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.



Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Project Graduation

1	Course name	Project Graduation
2	Course Code	ML405
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Research Methodology
7	Program offered the course	Medical Laboratory
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The research project course involves the generation of new scientific information and a review and understanding of the scientific literature. The research may be conducted in a laboratory, hospital, community laboratories, different company Training on project establishment and methodology of execution including literature reviewed and use scientific information resources
Textbooks and References:		How to Write a Thesis: A Working Guide R (Chandra) Chandrasekhar, (Chandra) Chandrasekhar, 2006
Course Duration		56 hours
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: <ol style="list-style-type: none"> 1. Define the Principles of research planning and design 2. Describe principles of basics of experimental design and analysis. 3. Identify suitable research topics. 4. Undertake independent research. 5. Critical review and analysis of related literature. 6. Design research study 7. Perform method validation and presentation of research report. 8. Write the research proposal and theses. 9. Demonstrate appropriate communication skills. 10. Present clearly and effectively scientific topic in a tutorial or a staff meeting. 11. Work separately or in a team to research and prepare a scientific topic.



Course Assessments	PPT Slides -End of semester after presentation
Content Breakdown	Topical Coverage
Session 1 (Week 1) Session 26 (Week 26)	<p>Development of a research protocol</p> <p>Fieldwork and data analysis</p> <ul style="list-style-type: none"> - The research project course involves the generation of new scientific information and a review and understanding of the scientific literature. - The research may be conducted in a laboratory, hospital, community laboratories, different company, etc., depending on the project and the supervisor. - Students are divided into groups and each group is working together. - Students are expected to work approximately 56 hours. This will include working in the laboratory, etc., reading or searching literature, and writing up the research project. - Fields of study available may include: <ul style="list-style-type: none"> Biomedical genetics Immunogenic Cancer genetics Biochemistry Genetics Diagnosis Embryology
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



3- قسم التغذية العلاجية



Inherited Metabolic Disorder and Nutritional genomic

1	Course name	Metabolic Disorders and Nutritional genomic
2	Course Code	TN406
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	None
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<p>This course aims to introduce the concepts, principles of the student to understands the nature of metabolic disorders and what types of foods are appropriate for each disease. He knows the symptoms and clinical signs of each hereditary metabolic disorder and how to treat it nutritionally. Knows metabolic disorders that can be treatable with diet. Understands genetic and transmissible metabolic diseases at any age, from childhood to the end of life. This course also study of how foods affect our genes and how individual genetic differences can affect the way we respond to nutrients (and other naturally occurring compounds) in the foods we eat. Nutrigenomics has received much attention recently because of its potential for preventing, mitigating, or treating chronic disease, and certain cancers, through small but highly informative dietary changes. The conceptual basis for this new branch of genomic research can best be summarized by the following five tenets of nutrigenomics: Under certain circumstances and in some individuals, diet can be a serious risk factor for a number of diseases. Common dietary chemicals can act on the human genome, either directly or indirectly, to alter gene expression or structure. The degree to which diet influences the balance between healthy and disease states may depend on an individual's genetic makeup. Some diet-regulated genes (and their normal, common variants) are likely to play a role in the onset, incidence, progression, and/or severity of chronic diseases.</p>
Textbooks required for this Course:		<p>Shirley W. Ekvall, 2005. Pediatric Nutrition in Chronic Diseases and Developmental Disorders. Jean-Marie Saudubray, 2012. Inborn Metabolic Diseases. Wiley-VCH, 2006, Nutritional Genomics: Impact on Health and Disease, Weinheim. Wayne,R, Bidlack, Raymond,L Rodriguez, 2012. Nutritional genomics: the impact of dietary.</p>
Course Duration		56 hours



Delivery	Classroom Lectures. Case study.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ol style="list-style-type: none"> 1. Advancement in understanding the relationship between inherited metabolic disorders and dietary requirements. 2. Be aware that symptoms that persist and remain unexplained after the initial treatment and after the usual investigations for more common disorders have been performed may be due to an inborn metabolic error. 3. Initially consider inborn errors that are amenable to treatment, particularly in patients who are acutely unwell. 4. Be aware about almost genetic metabolic errors are hereditary and transmitted, to member that an IEM can present at any age, from fetal life to old age. 5. To provide students with an understanding of the relationship between genetic variations and diet-related diseases. 6. To develop an understanding of genomics and gene regulation with respect to diet. 7. To demonstrate how to improvement in health through dietary modification, novel food, and nutraceuticals.
Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Course outline and Introduction
Session 2 (Week 2)	<ul style="list-style-type: none"> • General nutrition education in IMD
Session 3 (Week 3)	<ul style="list-style-type: none"> • Introduction to inborn errors of metabolism
Session 4 – session 8 (Week 4 - 8)	Amino-acidopathy: <ul style="list-style-type: none"> - Nutrition management in phenylketonuria - Nutrition management in maple syrup urine disease - Nutrition management of homocystinuria - Nutrition management in tyrosinemia • Nutrition management in urea cycle defect
Session 9 – session 10 (Week 9-10)	Organic academia: <ul style="list-style-type: none"> - Nutrition management in methylmalonic and propionic academia. • Nutrition management in glutaric academia.
Session 11 (Week 11)	<ul style="list-style-type: none"> • Nutrition management of fatty acid oxidation disorders



Session 12-session13 (Week 11-13)	Disorders of carbohydrates metabolism: <ul style="list-style-type: none"> • Nutrition management of glycogen storage disease. • Nutrition management of galactosemia. • Emergency management of inborn
Session 14 (Week 14)	Management of inborn errors metabolism during pregnancy.
Session 15 (Week 15)	Nutritional genomic: concept and tools
Session 16 (Week 16)	Transforming Dietary Signals into Gene expression
Session 17 (Week 17)	Transcriptional Regulation of Hepatic Genes by Insulin and Glucose.
Session 18 (Week 18)	Nuclear Receptors and the Control of Gene Expression by Fatty Acids
Session 19 (Week 19)	Nutrigenomic Implications for Nuclear Receptor Coactivators
Session 20 (Week 20)	Nutrient and genes interaction
Session 21 (Week 21)	Epigenetic and relationship between SNPs and diseases
Session 22 (Week 22)	Gene-Linked networks: intestinal Microbiome Linked Gene expression
Session 23 (Week 23)	Gene-Linked networks: Gene-Linked chronic Disease
Session 24 (Week 24)	Nutrigenomics and chronic diseases
Session 25 (Week 25)	Regulation of Lipogenic Genes in Obesity
Session 26 (Week 26)	Cellular Adaptation to Amino Acid Availability: Mechanisms Involved in the Regulation of Gene Expression
Session 27 (Week 27)	Food needs to Meet nutrigenomic Health needs
Session 28 (Week 28)	<ul style="list-style-type: none"> • Presentation and case study.
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the ability to analyze information and solve problems. • The student gains the spirit of teamwork. • The student gains the ability to apply the acquired concepts and skills. • The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will



endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Clinical placement in nutrition

1	Course name	Clinical placement in nutrition
2	Course Code	TN402
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Clinical nutrition, Nutrition assessment
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

This course represents the all parts of clinical practice. Residents will become familiar with providing a specialized nutritional management in various patient populations and disease states. Moreover, they will have an opportunity to attain a highest level of practice and experience in clinical nutrition. They will also learn how to incorporate their clinical knowledge into their daily practice, and function both independently and as a member of a healthcare team.

Textbooks required for this Course:

- 1) Manal of clinical nutrition, 2013, Merson, compress group.
- 2) Nutrition in clinical practices, 2008, Katz David – London.

Course Duration

28 weeks

Delivery

Practical, case study, tutorial and training

Course Objectives:

Upon completion of this course, the student will have reliably demonstrated the ability to:

- 1) Understand the theoretical concepts of medical nutritional management of surgical and critical care, pediatrics, and Internal medicine diseases.
- 2) Understand the nutritional requirements of critically ill patients and the means available to provide nutritional Support.
- 3) Assess drug nutrients interactions (e.g., effect of drugs on foods, and effect of foods on drug).
- 4) Apply the ability to apply their knowledge in different situations, phenomena and issues based on individual and group needs.



Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) Orientation to course/ Nutritional management of specific conditions Endocrinology <ul style="list-style-type: none"> • Diabetes mellitus , hypertension • Hypoglycemia and hyperinsulinemia
Session 2 (Week 2)	Topics to be covered in the session (week) Hyperthyroidism and hypothyroidism Pulmonary diseases Cardiac diseases
Session 3 (Week 3)	Nutritional managements of renal diseases: <ul style="list-style-type: none"> • Nephrotic syndromes • End-stage renal disease pre- and post-dialysis • Kidney transplantation
Session 4 (Week 4)	<ul style="list-style-type: none"> • Oncology/hematology for immune-suppressed patients antitumor therapy • (chemotherapy, radiation therapy, bone marrow transplant)
Session 5 (Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Hematopoietic stem cell transplant • Nutritional managements for developmental • Disabilities
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • nutritional support for internal medicine • Upper & Lower gastrointestinal tract
Session 7 (Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Hepatobiliary and Pancreatic Disorders • Diseases of the liver • Medical nutrition therapy for diabetes • Mellitus
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) Medical nutrition therapy for Renal disorders Medical nutrition therapy for Cancer prevention, Treatment and recovery Nutrition in Aging Case discussion : assessment, diagnosis and intervention of different cases of internal medicine.
Session 10-14 (Week 10-14)	PEDIATRIC NUTRITION Introduction to normal pediatric nutrition Nutritional management of specific pediatric conditions



	Pediatric nutritional support in critical care nutrition support in a neonatal ICU Case discussion : assessment, diagnosis and intervention of different pediatric case scenarios
Session 15-16 (Week 15-16)	Nutritional support of heart diseases
Session 17 (Week 17)	Nnutrition support of pre and post-surgical procedures
Session 18 (Week 18)	Medical nutrition therapy during pregnancy and lactation
Session 19 (Week 19)	Recognize the importance of the cooperative role of the nutritionist with the health care team in the management Nutritional care of patients.
Session 20 (Week 20)	Familiarity with hospital nutrition units and services.
Session 21 (Week 21)	Understanding the working methods of the various departments and treatment units in the hospital such as Intensive care unit, dialysis units, binocular detection unit.
Session 22 (Week 22)	Understand how food preparation units, waste materials management, and tools work, sewage and cleaning services in hospital.
Session 23 (Week 23)	knowledgeable about communication too is for the use of nutrition information's and nutritional education and represent.
Session 24 (Week 24)	How to prepare solid meals and semi-solid meals and liquid as well as the preparing Enteral and Parenteral meals.
Session 25 (Week 25)	Collecting personal, medical and food data from the records of reports and interviews of some cases in the hospital.
Session 26 (Week 26)	Participate with the nursing staff to learn how to manage their nutritional care for patients in different departments.
Session 27 (Week 27)	Counseling and guidance for patients.
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	Reflect on ethical issues related to nutrition. Understand the basic principles of nutrition.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Enteral and Parenteral Nutrition

1	Course name	Enteral and parenteral nutrition
2	Course Code	TN404



3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Dietary requirement, Clinical nutrition, nutrition assessment
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	This course aimed to learn students how understand enteral and parenteral nutrition throughout evaluate the nutrition requirement of patients after complete assessment of inpatients for enteral nutrition in addition to formulate and prepare the solutions used in parenteral nutrition and to determine the energy needs for non-intestinal feeding.
	Textbooks required for this Course:	Enteral Nutrition Support -USA. Enteral and Tube Feeding – Sydney . Artificial Nutrition Support in Clinical Practice- UK.
	Course Duration	56 hours
	Delivery	Lecture based, discussion group, lab. practical.
	Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: 1. Introducing the student to enteral nutrition, non-enteric (intravenous) and tube feeding, knowing the most important types. 2. Introducing the student to the most important problems and complications associated with parenteral and tube feeding, and avoiding negative effects. 3. Introducing the student to the concepts of non-enteral (intravenous) feeding and its role in therapeutic nutrition, and knowing the type of patients who need parenteral nutrition 4. Introducing the student to the nutrients and the natural properties of the whole meal in the case of tube feeding. 5. Introducing the student to how to formulate and prepare the solutions used in parenteral nutrition and to determine the energy needs for non-intestinal feeding
	Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
	Content Breakdown	Topical Coverage
	Session 1 (Week 1)	Topics to be covered in the session (week) • The Roles of nutrition support dietitian.
	Session 2 (Week 2)	• Malnutrition in the hospitals
	Session 3 (Week 3)	• Nutrition care process
	Session 4 (Week 4)	• Indications for Enteral nutrition • Feeding Routes



Session 5 (Week 5)	<ul style="list-style-type: none"> • contridication of enteral nutrition
Session 6 (Week 6)	<ul style="list-style-type: none"> • Enteral nutrition protocol
Session 7 (Week 7)	<ul style="list-style-type: none"> • Complications for Enteral nutrition
Session 8 (Week 8)	<ul style="list-style-type: none"> • Formula preparation and selection
Session 9 (Week 9)	<ul style="list-style-type: none"> • Determine and calculate calories requirements according to type of diseases.
Session 10 (Week 10)	<ul style="list-style-type: none"> • Determine and calculate protein requirements according to type of diseases.
Session 11 (Week 11)	<ul style="list-style-type: none"> • Determine and calculate fat requirements according to type of diseases.
Session 12 (Week12)	<ul style="list-style-type: none"> • Fluids needs of tube fed patients
Session 13 (Week13)	<ul style="list-style-type: none"> • Assessment of EN
Session 14 (Week14)	<ul style="list-style-type: none"> • Monitoring and evaluations of EN
Session 15 (Week 15)	<ul style="list-style-type: none"> • Total parenteral nutrition for hospitalized patients
Session 16 (Week 16)	<ul style="list-style-type: none"> • Types of TPN
Session 17 (Week 17)	<ul style="list-style-type: none"> • procedures of PPN
Session 18 (Week 18)	<ul style="list-style-type: none"> • Protocol of pareneteral nutrition
Session 19 (Week 19)	<ul style="list-style-type: none"> • The Total Parenteral Nutrition Formulations
Session 20 (Week 20)	<ul style="list-style-type: none"> • Complications of TPN
Session 21(Week 21)	<ul style="list-style-type: none"> • Modular Products
Session 22(Week 22)	Calcuation of Energy requirements
Session 23(Week 23)	Calculuations of amino acid requirements
Session 24(Week 24)	Type of formula
Session 25(Week 25)	Rehydration and fluid compensation of hospitalized patients
Session 26(Week 26)	Monitering and evaluations
Session 27(Week 27)	Cases study
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student should be able to work with a group within a team and form successful positive relationships with others. • The student should be able to communicate with the learners linguistically, physically and from a distance. • The student should be able to use modern educational means of communication.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



International Health and Nutrition

1	Course name	International Health and Nutrition
2	Course Code	TN405
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Malnutrition diseases
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course aims to introduce the concepts, principles, and scope of practice of public health nutrition. The course covers the distinction between population-based and individual-based approaches to prevention and alleviation of diet-related conditions, how to cope with the social, economic, environmental and institutional barriers in order to improve the nutritional status and health of different population groups. Presents major nutritional problems that influence the health, survival, and developmental capacity of populations in developing societies. Covers approaches implemented at the household, community, national, and international levels to improve nutritional status.
Textbooks required for this Course:		<ul style="list-style-type: none"> • Michael. J. G., Barrie MM, John MK, 2004. Public Health Nutrition ed., Lenore Arab Publisher: Wiley Blackwell. • Mark Lawrence and Tony Worsley, 2007. Public Health Nutrition ed. Allen & Unwin Publisher: Australian Pub.
Course Duration		56 hours
Delivery		<ul style="list-style-type: none"> • Classroom Lectures. • Case study. • Tutorials.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Describe the relationship between the nutrition and health. Identify the nutrients needs among the different population groups and the causes of PEM. • Identify the principal biological, behavioral, cultural, socioeconomic, and nutritional determinants of diet-related disease risk among different population groups. • The student will be able to evaluate the determinants of nutrition problems in low income settings as well as discuss strengths and limitations of strategies to prevent and treat nutrition-related global health challenges.



	<ul style="list-style-type: none"> Show the bad effect of some nutrients deficiency on the health and the methods of nutritional intervention that could be used.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Course Introduction and Overview
Session 2 (Week 2)	<ul style="list-style-type: none"> Undernutrition and causes of PEM in developing countries.
Session 3 (Week 3)	<ul style="list-style-type: none"> Prevalence and statistic of malnutrition in world regions
Session 4 (Week 4)	<ul style="list-style-type: none"> International conference of nutrition and malnutrition issues
Session 5 (Week 5)	<ul style="list-style-type: none"> Prevalence of IDD in world regions
Session 6 (Week 6)	<ul style="list-style-type: none"> Protection and Treatment approaches of IDD
Session 7 (Week 7)	<ul style="list-style-type: none"> Vitamin A deficiency disorders in developing countries.
Session 8 (Week 8)	<ul style="list-style-type: none"> Treatment protocol during pregnancy and growth
Session 9 (Week 9)	<ul style="list-style-type: none"> Prevalence of Iron Deficiency Anemia among communities.
Session 10 (Week 10)	<ul style="list-style-type: none"> Treatment protocol of Anemia
Session 11 (Week 11)	<ul style="list-style-type: none"> National Responses to Control Malnutrition: Food Aid
Session 12 (Week 12)	<ul style="list-style-type: none"> Household Responses to Food
Session 13 (Week 13)	<ul style="list-style-type: none"> Community Based Nutrition Interventions.
Session 14 (Week 14)	<ul style="list-style-type: none"> Breast Feeding and Complementary Feeding.
Session 15 (Week 15)	<ul style="list-style-type: none"> Transition feeding
Session 16 (Week 16)	<ul style="list-style-type: none"> Bottle feeding and food hygiene
Session 17 (Week 17)	<ul style="list-style-type: none"> Nutrition and Reproductive Health
Session 18 (Week 18)	<ul style="list-style-type: none"> Nutrition problems associated with gestation
Session 19 (Week 19)	<ul style="list-style-type: none"> Food supplements and labour complications
Session 20 (Week 20)	<ul style="list-style-type: none"> HIV & Micronutrient Nutrition
Session 21 (Week 21)	<ul style="list-style-type: none"> Obesity & the Nutrition Transition
Session 22 (Week 22)	<ul style="list-style-type: none"> Zinc Deficiency
Session 23 (Week 23)	<ul style="list-style-type: none"> Chronic diseases of imbalance and overabundance



Session 24 (Week 24)	<ul style="list-style-type: none"> • Infection and infectious morbidity.
Session 25 (Week 25)	<ul style="list-style-type: none"> • Famine and Malnutrition
Session 26-27 (Week 26-27)	<ul style="list-style-type: none"> • Poverty and food security
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student gains the ability to search the database. • That the student acquires teamwork. • The student gains the ability to debate and scientific dialogue • The ability to be self-reliant in self-education.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Research Methods

1	Course name	Research methods
2	Course Code	TN306
3	Course type	General
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	No
7	Program offered the course	-
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The main purpose of this course is to apply research methods and experimental design, data analysis, and interpretation. This course is designed especially for post graduate students of master of applied medical sciences. The course is aimed to introduce students to experimental methods and designs for conducting meaningful inquiry and research. They will gain an overview of research intent and design, methodology and technique, format and presentation, and data



	management and analysis informed by commonly used statistical methods in applied medical sciences.
Textbooks required for this Course:	<ul style="list-style-type: none"> • Dr Catherine Dawson, 2009, Introduction to research methods, UK. • MICHAEL P. MARDER. 2011. Research Methods for science, (1st Edition). USA.
Course Duration	56 hours
Delivery	<ul style="list-style-type: none"> • Classroom Lectures. • Discussion groups. • software computer program.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1) Knowledge about about concepts and principles of research methods and experimental designs. 2) write successful research proposal and scientific research. 3) Use different methods and materials, that applicable to proposed research and experiments. 4) Design experiments to reduce systematic and random errors and use statistics to interpret the results.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<ul style="list-style-type: none"> • Principles and concepts of Scientific research
Session 2 (Week 2)	<ul style="list-style-type: none"> • Types of scientific research
Session 3 (Week 3)	<ul style="list-style-type: none"> • Research Hypothesis
Session 4 (Week 4)	<ul style="list-style-type: none"> • Research designs
Session 5 (Week 5)	<ul style="list-style-type: none"> • Sampling designs • Sampling procedures
Session 6 (Week 6)	<ul style="list-style-type: none"> • Data collection methods
Session 7-10 (Week 7-10)	<p>How to Conduct Interviews:</p> <ul style="list-style-type: none"> - Methods of recording -The interview schedules - Establishing rapport • -Asking questions and probing for information
Session 11-13 (Week 11-13)	<p>How to Conduct Focus Groups?</p> <ul style="list-style-type: none"> - The role of the moderator - Recording equipment



	<ul style="list-style-type: none"> - Choosing a venue • - Recruiting your participants
Session 14-16 (Week 14-16)	<p>How to Construct Questionnaires</p> <ul style="list-style-type: none"> * Deciding which questionnaire to use * Wording and structure of questions * Length and ordering of questions * Piloting the questionnaire * Obtaining a high response
Session 17 (Week 17)	<ul style="list-style-type: none"> • Carry Out Participant Observation
Session 18 (Week 18)	<ul style="list-style-type: none"> • Collecting and analyzing information
Session 19-22 (Week 19-22)	<p>Analyze research Data:</p> <ul style="list-style-type: none"> - Qualitative data analysis - Quantitative data analysis • Comparison between means
Session 23-25 (Week 23-25)	<ul style="list-style-type: none"> • Experimental designs: CRD, BRD, Factorial, split
Session 26 (Week 26)	<ul style="list-style-type: none"> • Report research Findings
Session 27 (Week 27)	<ul style="list-style-type: none"> • How to be an Ethical Researcher
Session 28 (Week 28)	Final Exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<ul style="list-style-type: none"> • The student acquires the ability to analyze information and solve problems. • The student gains the spirit of teamwork. • The student gains the ability to apply the acquired concepts and skills. • The student acquires the language of dialogue and criticism.
Course Change	<p>Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.</p>



Nutrition Economics

1	Course name	Nutrition Economics
2	Course Code	TN400
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	No
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course equips students with the economic principles used for food policy analysis, applying the methods of economics to the major food and nutrition policy problems of the world. Students will gain familiarity with the data sources and analytical methods needed to explain and predict consumption, production and trade in agriculture and food markets; evaluate the social welfare consequences of market failure and government policies; and analyze changes in poverty and inequality including both fluctuations and trends in incomes, employment and economic development.
Textbooks required for this Course:		<ul style="list-style-type: none"> • Suresh C. Babu, 2017, Nutrition Economics. • George C. Davis and Elena L. Serrano, 2016, Food and Nutrition Economics.
Course Duration		56 hours
Delivery		<ul style="list-style-type: none"> • Classroom Lectures. • Discussion group.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Suggest a basic setting for nutrition economics and health outcomes research. • Define the new merging of health economics and nutrition disciplines to assess the impact of diet on health and disease. • Identify the characterizations of the health and economic aspects of specific changes in nutritional behavior and nutrition recommendations. • Known the inter-relationships between diet, health, family, resources and home, and man's physical, economic, social and aesthetic needs. • dietary modification, novel food, and nutraceuticals.
Course Assessments		<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p>



	60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1-2 (Week 1-2)	<ul style="list-style-type: none"> The Role of Nutrition in Social and Economic Development
Session 3-4 (Week 3-4)	<ul style="list-style-type: none"> Household Food and Nutrition Security
Session 5-6 (Week 5-6)	<ul style="list-style-type: none"> Factors for assessing and designing nutrition projects
Session 7-8 (Week 7-8)	<ul style="list-style-type: none"> Nutrition surveillance and intervention programme
Session 9-10 (Week 9-10)	<ul style="list-style-type: none"> Poverty Alleviation systems
Session 11-12 (Week 11-12)	<ul style="list-style-type: none"> Nutrition Education Systems
Session 13-14 (Week 13-14)	<ul style="list-style-type: none"> Economic benefits of investing in nutrition
Session 15-16 (Week 15-16)	Determining the cost of malnutrition: <ul style="list-style-type: none"> Nutrition goals of the World Summit for Children Nutrition goals of the Fourth United Nations
Session 17-18 (Week 17-18)	<ul style="list-style-type: none"> The link between poverty and nutrition
Session 19-22 (Week 19-22)	<ul style="list-style-type: none"> Assessment of sectoral policies with impact on nutrition: Agricultural policies, Health policies, Policies on access to safe water and sanitation, Policies on education
Session 23-24 (Week 23-24)	<ul style="list-style-type: none"> Potential impact of development policies and Program on nutrition.
Session 25-26 (Week 25-26)	<ul style="list-style-type: none"> Food security assessment.
Session 27 (Week 27)	<ul style="list-style-type: none"> Food Banks and Community food security indicators.
Session 28 (Week 28)	<ul style="list-style-type: none"> The Role of Nutrition in Social and Economic Development
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> The student acquires the ability to analyze information and solve problems. The student gains the spirit of teamwork. The student gains the ability to apply the acquired concepts and skills. The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Sports and fitness Nutrition

1	Course name	Sports and fitness Nutrition
2	Course Code	TN401
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Dietary requirements
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

This course presents the scientific basis for sports nutrition emphasizing basic nutritional concepts, energy expenditure during resistance and endurance exercise, the diet during training, the timing and composition of the pre- and post- competition meals, the use of nutrients supplements and the special needs of various athletic groups. The course provides practical information for the competitive athlete and people of all ages wishing to incorporate nutrition into an active, healthy, lifestyle.

Textbooks required for this Course:

- Arnie Baker, 2005. Nutrition for Sports, Argo publishing co., Washington, USA.
- Whitney E., Rolfes S., R. (2013). Understanding Nutrition, 13th edition, Wadsworth, Cengage Learning, USA.

Course Duration

56 hours

Delivery

Classroom Lectures, Discussion group, presentation.

Course Objectives:

Upon completion of this course, the student will have reliably demonstrated the ability to:

- Determine energy needs for specific types of physical activity.
- Apply the knowledge to improve the performance of sports persons.
- Describe physiological issues related to eating disorders in elite athletes.
- Describe the principle methods used for nutritional counseling of athletes.
- Analyze fluid intake required for various levels and types of physical activity.
- Understand the relationships between diet and training for optimum performance.
- Understand the special nutritional requirements for physical activities related to sports & exercise.



Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<ul style="list-style-type: none"> • Introduction to sports nutrition
Session 2 (Week 2)	<ul style="list-style-type: none"> • Nutrient bioenergetics in exercise
Session 3 (Week 3)	<ul style="list-style-type: none"> • Macronutrient metabolism in exercise and training
Session 4 (Week 4)	<ul style="list-style-type: none"> • Measurement of energy during exercise
Session 5 (Week 5)	<ul style="list-style-type: none"> • Pre-exercise nutrition
Session 6 (Week 6)	<ul style="list-style-type: none"> • Physical activity pyramid
Session 7 (Week 7)	<ul style="list-style-type: none"> • During exercise nutrition
Session 8 (Week 8)	<ul style="list-style-type: none"> • Post-exercise nutrition
Session 9 (Week 9)	<ul style="list-style-type: none"> • Compensation loss of sweat, minerals and vitamins
Session 10 (Week 10)	<ul style="list-style-type: none"> • Important of antioxidants and hydration for athlete
Session 11 (Week 11)	<ul style="list-style-type: none"> • Daily calories needs
Session 12 (Week 12)	<ul style="list-style-type: none"> • Various sources of calories for different exercises.
Session 13 (Week 13)	<ul style="list-style-type: none"> • Protein needs for exercises
Session 14 (Week 14)	<ul style="list-style-type: none"> • Dietary fats for exercise
Session 15 (Week 15)	<ul style="list-style-type: none"> • Nutrition recommendation for physical activity
Session 16 (Week 16)	<ul style="list-style-type: none"> • Nutrition consideration for intensive training
Session 17 (Week 17)	<ul style="list-style-type: none"> • Wise choice in nutrition marketplace
Session 18 (Week 18)	<ul style="list-style-type: none"> • Thermoregulation and fluid balance during heat stress
Session 19-20 (Week 19-20)	<ul style="list-style-type: none"> • pharmacologic and chemical ergogenic aids • nutrition ergogenic aid evaluated • Purported ergolytic aid
Session 21 (Week 21)	<ul style="list-style-type: none"> • body composition assessment and sport specific observations
Session 22 (Week 22)	<ul style="list-style-type: none"> • energy balance exercise and weight control
Session 23 (Week 23)	<ul style="list-style-type: none"> • Eating disorder for active persons
Session 24 (Week 24)	<ul style="list-style-type: none"> • body composition characteristic for athletes at different sports
Session 25 (Week 25)	<ul style="list-style-type: none"> • Alcohol, sport drinks and sport energy drink.



Session26 (Week26)	<ul style="list-style-type: none"> Energy expenditure in household, recreational and physical activities
Session 27 (Week 27)	<ul style="list-style-type: none"> Cases study and Presentation.
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> The student acquires the ability to analyze information and solve problems. The student gains the spirit of teamwork. The student gains the ability to apply the acquired concepts and skills. The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Food Quality Control in Hospitals

1	Course name	Food Quality control in the hospitals
2	Course Code	TN403
3	Course type	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisites requirements	Microbiology, food science
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	The concept of this course explore the fundamentals of food safety and environmental sanitation. Students identify the origins of food contamination and recognize proper food safety practices used to keep food safe during the flow of food in the hospital.
	Textbooks required for this Course:	European Commission, 2002, Food And Nutritional Care In Hospitals Whitney E., Rolfes S., R. (2013). Understanding Nutrition, (13 th Edition). Wadsworth, Cengage Learning, USA.
	Course Duration	56 H
	Delivery	Classroom Lectures, Discussion groups, presentation.



Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Introduced the management of food services to the institution and theories related to it. 8. Introducing the student to the role of a nutritionist and staff working in the management and services of nutrition in hospitals. 9. Know the procedures and tools used in hospital regarding nutrition services. 10. Introduce the student how to gain the ability to guide individuals and manage the hospital's nutrition unit. 11. Learn how to establish a nutrition unit in different institutions.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<ul style="list-style-type: none"> • Orientation lecture • Definition and Role of Dietetics Staff
Session 2 (Week 2)	<ul style="list-style-type: none"> • Role of Dietitians in Hospital • framework of food services in the hospitals
Session 3 (Week 3)	<ul style="list-style-type: none"> • Management of the Food Service Departments
Session 4 (Week 4)	<ul style="list-style-type: none"> • Definitions of food safety and hygiene
Session 5 (Week 5)	<ul style="list-style-type: none"> • Food legislations and regulations
Session 6 (Week 6)	<ul style="list-style-type: none"> • Characterization of food hazards
Session 7 (Week 7)	<ul style="list-style-type: none"> • Biological contaminations of food
Session 8 (Week 8)	<ul style="list-style-type: none"> • Chemical contaminations of food
Session 9 (Week 9)	<ul style="list-style-type: none"> • Physical contaminations of food
Session 10 (Week 10)	<ul style="list-style-type: none"> • Food borne illnesses and infectious agents
Session 11 (Week 11)	<ul style="list-style-type: none"> • Food microbial pathogens
Session 12 (Week 12)	<ul style="list-style-type: none"> • Natural toxin and mycotoxin
Session 13 (Week 13)	<ul style="list-style-type: none"> • Food poisoning
Session 14 (Week 14)	<ul style="list-style-type: none"> • Radiation pollution of food
Session 15 (Week 15)	<ul style="list-style-type: none"> • Types of spoilage food
Session 16 (Week 16)	<p>Hospitals Catering:</p> <ul style="list-style-type: none"> • Introduction • Specifications of dietetic unit • Specification of Food
Session 17 (Week 17)	<ul style="list-style-type: none"> • The types of storage
Session 18 (Week 18)	Food production area
Session 19 (Week 19)	<p>1.Types of dietetics services:</p> <ul style="list-style-type: none"> • 2. Centralized Delivery-service System
Session 20 (Week 20)	<ul style="list-style-type: none"> • .3Decentralized Delivery-Service System
Session 21 (Week 21)	<ul style="list-style-type: none"> • Disadvantage of decentralized Delivery service
Session 22 (Week 22)	<ul style="list-style-type: none"> • Operation of the Food Service Department
Session 23 (Week 23)	<p>Food Safety and Hygiene procedure:</p> <ul style="list-style-type: none"> • 1.Environment hygiene • 2.General Kitchen Hygiene



Session 24 (Week 24)	<ul style="list-style-type: none"> National Policies of Federal Ministry of Health Standards Measures of in-patients in Hospitals:
Session 25 (Week 25)	<ul style="list-style-type: none"> Safety procedure
Session 26 (Week 26)	<ul style="list-style-type: none"> Good safety and manufacture practices
Session 27 (Week 27)	<ul style="list-style-type: none"> Hazard analysis Critical Control Points (HACCP)
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> The student acquires the ability to analyze information and solve problems. The student gains the spirit of teamwork. The student gains the ability to apply the acquired concepts and skills. The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Environmental Pollution and Food Toxicology

1	Course name	Food Toxicology
2	Course Code	TN204
3	Course type	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisites requirements	General chemistry
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course covers basic principles of food and nutritional toxicology with emphasis on food components and food toxins including absorption, metabolism and excretion of xenobiotics, allergenic and toxic constituents, role of diet and nutrients in mutagenesis and carcinogenesis.
Textbooks required for this Course:		<ul style="list-style-type: none"> Chares c. Anokute, Principles of toxicology. 1st edition. Taylor & Francis Inc. Boelsterli, U.A., Mechanistic Toxicology. 2003, 1st edition
Course Duration		56 H
Delivery		<ul style="list-style-type: none"> Classroom Lectures.



	<ul style="list-style-type: none"> • Discussion group.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Describe the fundamental principles of environmental pollution and food toxicology. 2. Describe basic toxicological phenomena in the light of normal cellular and biochemical conditions 3. Explain the central principles regarding environmental pollution. 4. Identify and discuss strengths and limitations of different methods to study food toxicological effects, and their areas of application, analyze and critically review scientific articles in the field of toxicology.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1-4 (Week 1-4)	<p>CHEMICAL POLLUTION</p> <p>WATER Pollution</p> <p>Basic Hydrology - Water Quantity</p> <p>Water needs/use: differences among developed and developing countries</p> <p>- Water Sources - Water supply - Water Conflicts - Water Quality</p> <p>Microbiology - Chemicals - Water treatment – Waste water treatment.</p> <p>AIR Pollution</p> <p>Structure of the Atmosphere - History of Air Pollution - Urban Air Pollution</p> <p>- Photochemical smog - Ground level ozone Particles - Indoor Air Pollution</p> <p>- Radon Carbon Monoxide Particles</p> <ul style="list-style-type: none"> • Health Effects of Air Pollutants - Human Health Welfare - Global Issues - Global Warming Trans-continental Transport of Pollutants
Session 5-8 (Week 5-8)	<p>RADIATION POLLUTION</p> <p>Radiation Pollution: Types, Sources, Effects, Control of Radiation Pollution</p> <p>Non-ionising Radiation</p> <p>Sources of Radiation Pollution</p> <p>The natural sources of radiation</p> <ol style="list-style-type: none"> 1. Radioactive minerals 2. Cosmic rays 3. Radio nuclides. <p>The various sources of manmade radiation pollutions</p> <ol style="list-style-type: none"> 1. Nuclear power plants; 2. Radio-active wastes; 3. Nuclear explosions; and 4. Radio-isotopes. 5. Old CRT Television Set <p>Radiation Dose limits</p> <p>Effect of Radiation Pollution</p> <ul style="list-style-type: none"> • Control of Radiation Pollution
Session 9-12 (Week 9-12)	<p>CHEMICAL POLLUTION</p> <p>WATER Pollution</p> <p>Basic Hydrology - Water Quantity</p> <p>Water needs/use: differences among developed and developing countries</p> <p>- Water Sources - Water supply - Water Conflicts - Water Quality</p>



	Microbiology - Chemicals - Water treatment – Waste water treatment. AIR Pollution Structure of the Atmosphere - History of Air Pollution - Urban Air Pollution - Photochemical smog - Ground level ozone Particles - Indoor Air Pollution - Radon Carbon Monoxide Particles Health Effects of Air Pollutants - Human Health Welfare - Global Issues - Global Warming Trans-continental Transport of Pollutants
Session 13 (Week 13)	• Introduction to Toxicology
Session 14 (Week 14)	• The Field of Toxicology
Session 15 (Week 15)	• Classification of Toxic Agents
Session 16 (Week 16)	• Routes of exposure
Session 17 (Week 17)	• Factors Affecting Toxicity
Session 18 (Week 18)	• ADME: Absorption, Distribution, Metabolism, and Excretion
Session 19 (Week 19)	• Clinical Toxicology
Session 20 (Week 20)	• Food Poisoning
Session 21 (Week 21)	• Toxicological Information Sources
Session 22 (Week 22)	• Poisoning and Overdose
Session 23-26(Week 23-26)	Homework: Drug poisoning Environmental toxicology in general Pesticides toxicology
Session 27 (Week 17)	• Presentations and discussion.
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • Retrieval of toxicology information from public health impact databases, and interpretation and use of the information • Provide information about environmental health issues to the community. • Presenting scientific articles related to toxicology orally and in writing, and using the appropriate linguistic structure and style for a scientific article. • Communicate continuously and effectively with colleagues, supervisors and laboratory technicians.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Nutritional Pharmacology

1	Course name	Nutritional Pharmacology
2	Course Code	TN304
3	Course type	Specialty



4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Chemistry
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<p>This course provides students with sufficient knowledge about principle of pharmacology and drug-nutrient interaction, it is the effect of a medication on food or a nutrient in food. Medications interact with foods and nutrients in several ways. Medications can decrease appetite or change the way a nutrient is absorbed, metabolized, or excreted.</p> <p>A food-drug interaction is the effect of food or a nutrient in food on a medication. Dietary nutrients can affect medications by altering their absorption or metabolism. The food you eat could make the medications you take work faster, slower, or even prevent them from working at all.</p>
Textbooks required for this Course:		<p>Whitney, E.N. & Rolfes, S.R. (2015). Understanding Nutrition, 14th ed., Wadsworth, Cengage Learning, Belmont, CA.</p> <p>Bernstein, M., & Munoz, N. (2016). Nutrition for the Older Adult, 2nd ed., Jones and Bartlett Publishers, Sudbury, MA.</p>
Course Duration		56 hours
Delivery		Classroom Lecture, Discussion group.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • provide the basic knowledge about pharmacology and Nutrition science. • Explain the importance of understanding pharmaceuticals dosage forms. • Understanding Bioavailability and metabolism • To provide the basic knowledge about define drug interactions. • Explain the importance of drug interactions on Bioavailability and metabolism. • Drug interaction awareness.
Course Assessments		<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown		Topics Coverage
Session 1-4 (Week 1-4)		<p>Introduction.</p> <p>Drug dosage forms.</p>



	Types of drug dosage forms. Routes of administration.
Session 4-6 (Week 4-6)	Pharmacology basics. Pharmacokinetics. Pharmacodynamics.
Session 7-10 (Week 3)	Bioavailability and first pass effect. Factors affecting the Bioavailability. Factors of selecting drug dosage forms.
Session 11-12 (Week 11-12)	Drug interaction basic. Drug-drug interaction. Nutrient drug interactions.
Session 13-17 (Week 13-17)	Introduction to nutrient-drug interaction Routes of drug administration and drug dosage forms and their effect on the bioavailability. Stages of medicines taken by mouth How foods can interfere with the stages of drug action
Session 18-20 (Week 18-20)	Importance of drug interactions on Bioavailability, metabolism and how does this occur? Useful and harmful drug interaction
Session 21-23 (Week 21-23)	Drug metabolizing enzymes Enzyme inducer Enzyme inhibitor Defining Prodrugs Metabolism and Bioavailability of prodrugs
Session 24-25 (Week 24-25)	Classification of drugs Antihistamines Lipid lowering drugs Anti-inflammatory Diuretic and blood lowering drugs
Session 26 (Week 26)	Define the term and describe classes of drug nutrition interactions Common food and drugs combination to avoid.
Session 27 (Week 27)	Gastrointestinal Agents. Peptic ulcer diseases. Constipation. Diarrhea. Vomiting. Inflammatory bowel diseases
Session 28 (Week 28)	Cardiovascular Disease. Hypertension and Blood Pressure Management. Hypotension
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed.



	Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the ability to analyze information and solve problems. • The student gains the spirit of teamwork. • The student gains the ability to apply the acquired concepts and skills. • The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Nutritional Epidemiology and Immunity

1	Course name	Nutritional Epidemiology and Immunity
2	Course Code	TN303
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Microbiology
7	Program offered the course	Public health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course covers basic epidemiology principles, concepts, and procedures useful in the surveillance and investigation of health-related states or events. It is designed for who to be public health professionals and private sector health professionals who are responsible for disease surveillance or investigation. A basic understanding of the practices of public health and biostatistics is recommended.
Textbooks required for this Course:		Chares c. Anokute, Principles of epidemiology. 1 st edition. Taylor & Francis Inc. Edition. Mausner and Kramer. Epidemiology , an introductory text. 1 st edition. Basic and clinical Immunology, 3 rd edition, by H. H. Fundenberg D.P. sti, J.L. Caldwell J.V. Wel
Course Duration		28 weeks
Delivery		Classroom Lecture, Discussion group, case study.



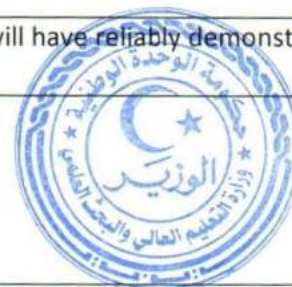
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1-Develop knowledge and understanding of fundamental of epidemiological and immunity concepts and principles. 2-Understand the distribution of health and disease in the community. 3-List the key features and uses of different epidemiological studies. 4-Calculate and interpret the basic statistical measures (ratios, proportions, morbidity and mortality). 5-Understand the basic principle of communicable disease epidemiology and control.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
(Week 1)	<ul style="list-style-type: none"> • Introduction to epidemiology definition and background
(Week 2)	<ul style="list-style-type: none"> • Uses and applications and scope of epidemiology
(Week 3)	<ul style="list-style-type: none"> • Epidemiologic orientation to health and disease
(Week 4)	<ul style="list-style-type: none"> • Levels of prevention, changing pattern of morbidity and mortality
(Week 5)	<ul style="list-style-type: none"> • Epidemiology concepts triad, agent, host and environment
(Week 6)	<ul style="list-style-type: none"> • Epidemic versus endemic disease and classification of disease
(Week 7)	<ul style="list-style-type: none"> • Measurement of morbidity and mortality, sources of data
(Week 8)	<ul style="list-style-type: none"> • Morbidity frequency rates and mortality frequent rates
(Week 9)	<ul style="list-style-type: none"> • Descriptive epidemiological studies (person, place, time) and analytic epidemiological studies (case control and cohort studies)
(Week 10)	<ul style="list-style-type: none"> • Experimental studies principles, types and ethical issues
(Week 11)	<ul style="list-style-type: none"> • Epidemiologic aspects of infectious disease (communicable disease)
(Week 12)	<ul style="list-style-type: none"> • Mechanisms of transmission of infections
(Week 13)	<ul style="list-style-type: none"> • Screening in the detection of disease
(Week 14)	<ul style="list-style-type: none"> • Introduction in immunology
(Week 15)	<ul style="list-style-type: none"> • Immuno system
(Week 16)	<ul style="list-style-type: none"> • Antigen and antibodies
(Week 17)	<ul style="list-style-type: none"> • Complement system and cytokines
(Week 18)	<ul style="list-style-type: none"> • Hypersensitivity (allergic)
(Week 19)	<ul style="list-style-type: none"> • Allergic of food
(Week 20)	<ul style="list-style-type: none"> • Allergic of milk (lactose tolerance)
(Week 21)	<ul style="list-style-type: none"> • Allergic of peanut
(Week 22)	<ul style="list-style-type: none"> • Allergic of fish
(Week 23)	<ul style="list-style-type: none"> • Allergic of flour (glutin)
(Week 24)	<ul style="list-style-type: none"> • Allergic of Eggs
(Week 25)	<ul style="list-style-type: none"> • Allergic of drugs
(Week 26)	<ul style="list-style-type: none"> • allergic disease (asthma, urtecaria)
(Week 27)	<ul style="list-style-type: none"> • Presentation and case study



(Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • Acquire the skill of collecting data from health departments • Gain the skill of working in one team and discover the epidemic disease • Gain the skill of self-reliance and surfing the Internet • Gain the skill of how to combat this epidemic.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Nutritional biochemistry

1	Course name	Nutritional biochemistry
2	Course Code	TN202
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Chemistry
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course provides students with sufficient knowledge to describe the scientific meaning of the term macro and micronutrients and how it is estimated daily requirements and reference values. Explain the metabolic functions of nutrients and the mechanism of their implementation within the human body.
Textbooks required for this Course:		DAVID A BENDER, 2004, introduction to nutrition and metabolism. 3 th edition. Taylor & Francis Inc. Edition. Aduagna, S., Alemu, L. A. M., Kelemu, T., Tekola, H., Kibret, .B., & Genet, S, (2004). Medical Biochemistry, USA.
Course Duration		28 weeks
Delivery		Classroom Lecture, Discussion group, Lab experiments.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to:



	<ul style="list-style-type: none"> Describe and explain the way in which macro and micronutrient requirements are determined and how reference intakes are calculated. Understand the basic concepts of biochemistry of nutrients. Describe and explain metabolic functions of the amino acid, fatty acid, vitamins and the main minerals. Describe and explain the deficiency signs associated with each of the vitamins and the main minerals.
Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Introduction to class , Review of syllabus/expectation, Water: Essential Molecule for Life, Distribution, Recommended, dehydration and overhydrating.
Session 2 (Week 2)	Dietary proteins and amino acids Classification, 3-D Structure of Proteins, Denaturing of protein, Functions of protein, Recommended dietary intakes. digestion and metabolism of protein.
Session 3 (Week 3)	Functions of Carbohydrates Hormonal control of blood glucose, Carbohydrates as energy storage
Session 4 (Week 4)	Energy balance and Regulation of glycolysis, Fate of pyruvate, Transfer of NADH from glycolysis into the mitochondria Significance of Glycolysis Cori Cycle
Session 5 (Week 5)	Electron Transport system and Oxidative Phosphorylation, Gluconeogenesis, Glycogen synthesis and utilization.
Session 6 (Week 6)	Lactose intolerance Disorders of carbohydrate metabolism Overview of diabetes mellitus
Session 7 (Week 7)	Enzymes, Catalytic Efficiency Nomenclature and Classification, Enzymes Cofactors
Session 8 (Week 8)	Digestion and absorption of triacylglycerol, The metabolism of fats, The role of Carnitine, β -oxidation of fatty acids.
Session 9 (Week 9)	Fat intake, The type of fat in the diet Hormonal control in the fed and fasting states
Session 10 (Week 10)	Hormonal control of adipose tissue metabolism, Control of lipid metabolism in the liver.
Session 11 (Week 11)	Muscle fuel utilization in the fed and fasting states, Disorders of Lipid Metabolism Classification of lipoproteins.
Session 12 (Week 12)	The exogenous pathway of lipoprotein metabolism, The endogenous pathway of lipoprotein metabolism.
Session 13 (Week 13)	Abnormalities in lipid metabolism Disorders of Exogenous Lipoprotein Metabolism



Session 14 (Week 14)	Free radicals and antioxidant nutrients, Tissue damage by oxygen radicals
Session 15 (Week 15)	Introduction to class. Review of syllabus/expectations The determination of requirements and reference intakes. The vitamins, Vitamin A: international units, Metabolism, Metabolic functions.
Session 16 (Week 16)	Vitamin A in vision, Retinoic acid and the regulation of gene expression. Vitamin A deficiency Requirements, Assessment, Toxicity of vitamin A. Vitamin D: Vitamers, absorption, metabolism, Metabolic functions, deficiency, requirements, and toxicity.
Session 17 (Week 17)	<ul style="list-style-type: none"> • Vitamin E: Vitamers, absorption, metabolism, Metabolic functions, deficiency, requirements, and Indices of vitamin E status. • Vitamin K: Vitamers, absorption, metabolism, Metabolic functions, deficiency, requirements, and toxicity.
Session 18 (Week 18)	<ul style="list-style-type: none"> • Vitamin B1 (thiamin): Absorption, metabolism, and metabolic functions. • Thiamin deficiency, requirements, 2 2 Assessment of thiamin status.
Session 19 (Week 19)	<ul style="list-style-type: none"> • Vitamin B 2 (riboflavin): Absorption, and metabolism
Session 20 (Week 20)	<ul style="list-style-type: none"> • metabolic functions of riboflavin, riboflavin deficiency and requirements Assessment of riboflavin status
Session 21 (Week 21)	<ul style="list-style-type: none"> • Niacin: Metabolism, The synthesis of nicotinamide nucleotides from tryptophan Metabolic functions of niacin
Session 22 (Week 22)	<ul style="list-style-type: none"> • Tryptophan and niacin deficiency, Requirements, Assessment, and toxicity.
Session 23 (Week 23)	<ul style="list-style-type: none"> • Vitamin B6 :Absorption, metabolism, and metabolic functions.
Session 24 (Week 24)	<ul style="list-style-type: none"> • Vitamin B12 :Absorption, metabolism, and metabolic functions Deficiency, Requirements, and Assessment.
Session 25 (Week 25)	<ul style="list-style-type: none"> • Biotin: Absorption, metabolism, and metabolic functions Deficiency and Requirements.
Session 26 (Week 26)	<ul style="list-style-type: none"> • Vitamin C (ascorbic acid): Absorption, metabolism, and metabolic functions.
Session 27 (Week 27)	<ul style="list-style-type: none"> • Minerals: 1 Calcium: Minerals which function as prosthetic groups in enzymes.
Session 28 (Week 28)	<ul style="list-style-type: none"> • Minerals that have a regulatory role as enzyme ,(in neurotransmission activators or in hormones).
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the ability to analyze information and solve problems. • The student gains the spirit of teamwork. • The student gains the ability to apply the acquired concepts and skills. • The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will



endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Clinical nutrition

1	Course name	Clinical nutrition
2	Course Code	TN301
3	Course type	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisites requirements	Basics of Nutrition
7	Program offered the course	Therapeutic Nutrition Department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Course is covers the pathophysiology,treatment and management of nutrition-related diseases and conditions as well as recommended guidelines for their clinical nutrition intervention. This course will cover the nutritional interventions regarding diseases of the the nutritional interventions regarding therapeutic diet, Diseases of the Endocrine, diabetic mellitus, thyroid, obesity, cardiovascular disease and hypertension, gastrointestinal tract and osteoporosis, kidney, liver, pregnancy and lactation and food allergy.
Textbooks required for this Course:		L. Kathleen Mahan Sylvia Escott- Stump. Krause's Food & Nutrition Therapy. 13 th edition. Taylor & Francis Inc. Edition. Sharon Rady., Ellie Whitney. Understanding Normal and Clinical Nutrition. 10 th edition.
Course Duration		28 weeks
Delivery		Classroom Lectures, Discussion group and case study.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: 1. Utilize nutritional principles and standards of care and protocols, to provide an optimal medical nutrition therapy, Manage daily activities 2. Participate in group and individual assignments, exams, and discussions related to the nutritional management care of patients 3. Plan, modify and fortify diets according to the patient's needs.
Course Assessments		Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown		Topics Coverage



Session 1 (Week 1)	Role of Dietitian and Therapeutic Feeding Definition-dietitian, professional ethics Nutritional assessment of hospitalized patient
Session 2-4 (Week 2-4)	Team approach to nutritional care – effect of illness on food acceptance and utilization – inter – relationship with the patient. Psychology of feeding the patient
Session 5-7 (Week 5-7)	Diet Therapy Determination (Indications) and Identification. Types of General Diet Regular/Full Diet High Fiber Diet Vegetarian Diet . • Types of Therapeutic Diet (Diet Modified According to Consistency and Composition and Restricted Diets) a. Clear Liquid b. Full Liquid c. Blenderized Liquid d. Soft Diet e. Low-Residue Diet f. Low-Sodium Diet (Specific Patient) and High- Sodium Diet g. DASH Diet h. Low-Fat Diet (CAD Prevention) i. Renal Diet j. Diabetic Diet k. Non-Allergic Diet L. Immunosuppressed Diet
Session 8(Week 8)	Diseases of the Endocrine: Thyroid-Hypo and Hyper Thyroidism and Pancreas - Diabetes Mellitus Clinical features, metabolic features, nutritional requirements and treatment for hypo and hyper thyroidism
Session 9-12 (Week 9-12)	Classification, pathophysiology, symptoms, diagnosis, risk factors and complications. Management of diabetes mellitus – Insulin therapy and oral hypoglycemic agents. Dietary care and nutritional therapy, meal plan with and without insulin. Glycemic index of food, #special diabetic foods and lifestyle management#. Gestational diabetes – causes, complications and dietary management.
Session 13 (Week 13)	Nutrition therapy for hypertension Hypertention-types, pathophysiology, etiology and nutritional care.
Session 14-16 (Week 14-16)	Diseases of the Cardiovascular Diseases Hyperlipidemias - classification of hyperlipidemias. Clinical and nutritional aspects of hyperlipidemia Dietary regimen Atherosclerosis- pathophysiology, role of fat in the development of atherosclerosis, clinical effects, risk factors and dietary modification. Ischemic heart disease – #angina pectoris, myocardial infarction-clinical effects# and dietary management. Congestive heart disease- pathophysiology, etiology, symptoms and dietary management.
Session 17-18 (Week 17-18)	Energy modifications and nutritional care for weight management Identification of overweight and obese etiological factors contributing to



	obesity and prevention Treatment – Low Energy diets, behavioral modification. Complications of obesity. Underweight – aetiology and assessment. Treatment - high energy diets. Complications - Anorexia Nervosa, Bulimia
Session 19-20 (Week 19-20)	Understanding the working methods of the various departments and treatment units in the hospital such as Intensive care unit, dialysis units, binocular detection unit.
Session 21-22 (Week 10)	Understand how food preparation units, waste materials management, and tools work, sewage and cleaning services in hospital
Session 23-24 (Week 23-24)	<ul style="list-style-type: none"> • Febrile diseases- acute and chronic fever, influenza, tuberculosis, poliomyelitis, typhoid, malaria
Session 25-26 (Week 25-26)	<ul style="list-style-type: none"> • Gastrointestinal disorder-etiology symptoms and treatment of gastritis, peptic ulcer, diarrhea, constipation, dumping syndrome, malabsorption syndrome, steatorrhea irritable bowel syndrome, ulcerative colitis, diverticulosis, crohn's disease etc
Session 27 (Week 27)	<ul style="list-style-type: none"> • Nutritional management in liver diseases: Liver diseases-Infective hepatitis. cirrhosis, cholecystitis, cholelithiasis, hepatic encephalopathy and liver transplant
Session 28 (Week 28)	<ul style="list-style-type: none"> • Diet in Allergy-Definition. Classification. Food allergens, test for allergy, dietary treatment.
Session 29(Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • Acquire the skill to use techniques that a nutrition can effectively educate different types of patients about nutritional requirements • Do web search and share relevant and reliable information regarding trends and updates on nutritional management.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Nutrition Assessment and Surveillance

1	Course name	Nutrition Assessment and Surveillance
2	Course Code	TN300
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4



6	Pre-requisites requirements	Basics of nutrition
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The aim of this course is to obtain a deeper understanding of dietary assessment as a field of study. The goal is also to develop the ability to identify problems and choose methods based on purpose and how the problem is formulated. Dietary assessment methodology includes reviews of research methods, especially methods aiming at measuring dietary intake. An important part of the course deals with measurement errors, validity and reliability problems.
Textbooks required for this Course:		Gibson, R., 2005, Principles of Nutritional Assessment. 2 nd edition. oxford university press. Fridman Gregg., (2014). Review of national nutrition surveillance, USA.
Course Duration		28 weeks
Delivery		Classroom Lectures, Discussion group, case study, field trip and lab experiments.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1) Understand appropriate applications of the various methods, which are used for assessment of nutrition status among individuals and the interpretation of results. 2) Choose appropriate assessment tools and use them to evaluate an individual's risk for common nutrient-related diseases. 3) Understand of the rationales, advantages, and disadvantages of these various approaches to nutritional assessment. 4) Develop skills necessary to assessment the nutrition status among individual and community and make recommendations based on the assessment. 5) Describe dietary methods are used for assessing an individual nutrient intake, including prospective and retrospective methods. 6) Demonstrate the surveillance strategies to determine an individual's and community nutritional status and make recommendations based on the data analysis and assessment. 7) Understand influence of cultural and behaviour habits on nutrition status of community.
Course Assessments		Assignment 1: 30%



	Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	The Purposes of nutritional assessment and survey
Session 2 (Week 2)	The factors are effecting on nutritional status of individual and community
Session 3 (Week 3)	<ul style="list-style-type: none"> The direct methods of nutrition assessment
Session 4 (Week 4)	<ul style="list-style-type: none"> Classify anthropometric methods
Session 5 (Week 5)	<ul style="list-style-type: none"> Anthropometry measurements for children and teenagers (Weight, Length, Height, MUAC, HC, CC, BMI for age, WFA, HFA, WFH)
Session 6 (Week 6)	<ul style="list-style-type: none"> Measurements for adults (BMI, IBW, WC, HC, WHR, SFT, MUAC)
Session 7 (Week 7)	<ul style="list-style-type: none"> Anthropometry Nutritional Indices in Adults
Session 8 (Week 8)	<ul style="list-style-type: none"> International standards of anthropometric Measurements
Session 9 (Week 9)	<ul style="list-style-type: none"> The percentile of median of growth chart (WHM, WHM, HAM)
Session 10 (Week 10)	<ul style="list-style-type: none"> Z-scores (WHZ, WAZ, HAZ)
Session 11 (Week 11)	<ul style="list-style-type: none"> Advantages and disadvantages of anthropometry
Session 12 (Week 12)	<ul style="list-style-type: none"> Clinical assessment methods
Session 13 (Week 13)	<ul style="list-style-type: none"> Biochemical and Laboratories tests, Advantages and limitations of Biochemical Methods
Session 14 (Week 14)	<ul style="list-style-type: none"> Initial Laboratory Assessment and Specific Lab Tests
Session 15 (Week 15)	<ul style="list-style-type: none"> General Dietary Measurements: Local level Regional and international level
Session 16 (Week 16)	<ul style="list-style-type: none"> National survey methods
Session 17 (Week 17)	<ul style="list-style-type: none"> Dietary records method
Session 18 (Week 18)	<ul style="list-style-type: none"> 24 hours dietary recall method Score method
Session 19 (Week 19)	<ul style="list-style-type: none"> Food Frequency Questionnaire duplicate and mobile phone methods
Session 20 (Week 20)	<ul style="list-style-type: none"> Dietary history and Food diary
Session 21 (Week 21)	<ul style="list-style-type: none"> Qualitative and quantative data analysis
Session 22(Week 22)	<ul style="list-style-type: none"> Nutrition Intake Assessment Advantages and disadvantages of dietary assessment
Session 23(Week 23)	<ul style="list-style-type: none"> Nutritional surveillance systems
Session 24 (Week 24)	<ul style="list-style-type: none"> Assessing and monitoring nutritional problems Nutrition assessments and screening systems nutrition assessment tools.
Session 25 (Week 25)	<ul style="list-style-type: none"> Socioeconomic aspects and cultural habits Anti-nutritional factors
Session 26 (Week 26)	<ul style="list-style-type: none"> Food production systems, demand and supply community and field assessment practices.
Session 27 (Week 27)	<ul style="list-style-type: none"> Vital statistics



Session 28 (Week 28)	<ul style="list-style-type: none"> • Case studies
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the ability to analyze information and solve problems. • The student gains the spirit of teamwork. • The student gains the ability to apply the acquired concepts and skills. • The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Community Nutrition and Counseling

1	Course name	Community Nutrition and Counseling
2	Course Code	TN302
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Basics of Nutrition, dietary requirements
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022

Brief Description: This course provides students with sufficient knowledge and skills necessary to focused theoretical and practical training in the field of community nutrition and patients counseling and education. Develop programme and intervention skills related to nutrition. Design and implement nutrition education programs in health institutions, government organizations, schools and universities. Use all the steps of select models and theories and cultural competence in nutrition program development.

Textbooks required for this Course:

Snetselaar, L., (2009), Nutrition Counseling Skills for the Nutrition Care Process.
 Boyle, Marie. A. and Holben, David. H., 2006, Community Nutrition in Action: An Entrepreneurial Approach. 4th edition.
 Michener, J. Liloyd and Fowler, Stanley, (2007). Community nutrition networking guide: Building community networking for healthy weight in the Carolinas.. Wadsworth, Cengage Learning, USA.



Course Duration	28 weeks
Delivery	Classroom Lectures. Discussion group. Prepare leaflet and brochures.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ol style="list-style-type: none"> 1. Introduce the concepts of nutrition education and its methods. 2. Use the communication skill in planning and implementing nutritional education programs and disseminating cultural programs in nutrition. 3. Introducing students to the methods of providing nutritional guidelines for patients' health, planning patients' meals, and the importance of nutritional education in improving the nutritional behavior of individuals. 4. Knowing how to prepare modern educational means that suit the different groups in order to correct the wrong habits.
Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	• Introduction to community nutrition
Session 2 (Week 2)	• The roles of nutritionist and dietitians in community
Session 3 (Week 3)	• Public health nutrition problems
Session 4 (Week 4)	• The main causatives of malnutrition
Session 5 (Week 5)	• Community nutrition programs and policies.
Session 6 (Week 6)	• Eating behaviors and chronic diseases relationship.
Session 7 (Week 7)	• Eating behaviors and chronic diseases relationship.
Session 8 (Week 8)	• Preparation of nutrition programs among different community levels.
Session 9 (Week 9)	• Preparation of nutrition programs among different community levels.
Session 10 (Week 10)	• Nutrition information sources.
Session 11 (Week 11)	• Evaluation of community nutrition status.
Session 12 (Week 12)	• Organizations, corps, agencies and institution's related to nutritional programs.
Session 13 (Week 13)	• Food security assessment, Food Banks and community food security indicators.
Session 14 (Week 14)	• Concepts of Nutrition education and its importance
Session 15 (Week 15)	- Nutrition education actions
Session 16 (Week 16)	- Methods of nutrition education and its means
Session 17 (Week 17)	- Planning of cultural programs in nutrition
Session 18 (Week 18)	- A global approach to nutrition education
Session 19 (Week 19)	- Methods of guidance in therapeutic meals for patients
Session 20 (Week 20)	- Methods of guidance in therapeutic meals for patients
Session 21 (Week 21)	- Planning an intervention in social communication in nutrition
Session 22 (Week 22)	- Nutrition education on fast food and its harmful impact
Session 23 (Week 23)	- Behavior change theories/models
Session 24 (Week 24)	- Principles of communication and Factors affecting Communication
Session 25 (Week 25)	- Principles of communication in nutrition.



Session 26 (Week 26)	- Nutrition education for different groups
Session 27 (Week 27)	- Arts of nutrition education of patients
Session 28 (Week 28)	- case study
Session 29 (Week 29)	○ Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the ability to analyze information and solve problems. • The student gains the spirit of teamwork. • The student gains the ability to apply the acquired concepts and skills. • The student acquires the language of dialogue and criticism.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Nutrition Throughout the life Cycle

1	Course name	Nutrition Throughout the life Cycle
2	Course Code	TN207
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	None
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<p>This course aims to introduce to undergraduates the role of good nutrition in human development and growth. This course covers studying nutrients functions in the body during every stage of human growth, the recommended dietary allowances (RDA) of the nutrients in every stage, the physical and physiological changes in every stage and the good food pattern that provides all the nutrients in adequate quantity and proportion to meet the growth and development requirements. This course also will covers study nutrients functions in the body during adolescent, maturity stages and late of life. The recommended dietary allowances (RDA) of the nutrients in adolescent and elders, the physical and physiological changes during adolescent, maturity and late of life. The good food pattern that provides all the nutrients in</p>



	adequate quantity and proportion to meet teenagers and late of life requirements.
Textbooks required for this Course:	Thompson Janice, Manore Melanda, Voughan Linda (2011). Nutrition Sciences, (2 nd Edition). Pearson, USA. Whitney E., Rolfes S., R. (2013). Understanding Nutrition, (13 th Edition). Wadsworth, Cengage Learning, USA.
Course Duration	28 week
Delivery	Classroom Lectures. Discussion group. Presentation case study
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> - Define the various stages of human growth in his/her life time. - Identify the nutritional requirements of the women before and during pregnancy and lactating Women. - Recognize and explain the characteristics of the childhood stages (toddler and preschoolers) and the nutritional needs for those stages. - Recognize the adolescence stage and the physical and emotional changes for both the boys and the girls and the nutritional problems that they face. - Identify the nutritional requirements of the adolescents, elder adults and geriatrics in addition to Nutrition related concerns for adolescents and later of life ages. - Describe the importance of dietary requirements to teenagers, adolescents, young adult, older adult and geriatrics. - Determine Characteristic of Physiologic Changes Accompany Aging and theories of aging. - Recognize and explain the Age-Related Changes in Body Composition and Age-Related Changes in Organ Function for those stages.
Course Assessments	Assignment 1: 30% Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to nutrition throughout the life cycle
Session 2-4 (Week 2-4)	1. Food and nutrition of Pregnant women <ol style="list-style-type: none"> i. Nutrition needs prepregnancy and during pregnancy ii. Weight gain during pregnancy iii. Diet for pregnancy with diabetes iv. Adolescence pregnancy v. dietary requirements during pregnancy
Session 5-7 (Week 3)	<ul style="list-style-type: none"> • nutrients deficiency during pregnancy • pregnancy complication related to nutrition • nutrition concerns during pregnancy
Session 8-9 (Week 8-9)	2. Feeding of Lactating mothers <ol style="list-style-type: none"> i. Energy requirements and intakes in lactation ii. Milk production and types of breast milk iii. nutrition concerns during lactation



	iv. advantage and stages of breastfeeding
Session 10-11 (Week 10-11)	3. Diet during infancy <ol style="list-style-type: none"> i. Infant birthweight ii. Breastfeeding iii. bottle-feeding or feeding breastmilk substitutes iv. Properties and value of breastmilk v. Supplementary foods vi. Special consideration for infant with altered nutrition needs.
Session 12 (Week 12)	• Feeding of young children
Session 13 (Week 13)	• Feeding of old children
Session 14 (Week 14)	• Feeding during school age
Session 15 (Week 15)	• Nutritional requirements for teenagers
Session 16 (Week 16)	• Dietary recommendations for macronutrients and micronutrients
Session 17 (Week 17)	• Energy balance and physical activity
Session 18 (Week 18)	• Diet and cognitive ability
Session 19 (Week 19)	• Nutrition related concerns for adolescents: Bone Density, Cigarette smoking, Use of alcohol and illegal drugs.
Session 20 (Week 20)	• Eating Disorders and behaviour of adolescents
Session 21 (Week 21)	• Adolescent Acne and Diet
Session 22 (Week 22)	• Theories of Aging (errors and Programmes theories)
Session 23 (Week 23)	• Age-Related Changes: Age-Related Changes in Gastrointestinal Function, Age-Related Changes in Body Composition, Age-Related Changes in Organ Function
Session 24 (Week 24)	• Lifestyle Factors Accelerate Aging
Session 25 (Week 25)	• Nutrients Needs for Older Adult's
Session 26 (Week 26)	• Nutritional Concerns Threaten the Health of Older Adult
Session 27 (Week 27)	• Social Concerns Affect the Nutrition of Older Adults
Session 28 (Week 28)	• case study and presentations.
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the skill of browsing the Internet. • The student earns teamwork. • The student gains the ability to debate and scientific dialogue • The student gains the ability to be self-reliant in self-education.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Dietary Requirements

1	Course name	Dietary requirements
2	Course Code	TN208



3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	None
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The course introduce student to knowledge about energy and nutrients requirements of optimum nutrition for individual and community. student could able to calculate the energy and protein requirements for different patients and health individuals. In addition, this course will study dietary standards, dietary guidelines, and use main food systems (pyramide guidelines, food exchange system and food groups) for planning healthy adequate diet.
Textbooks required for this Course:		<ul style="list-style-type: none"> • Ruth A. Roth (2011). Nutrition and Diet Therapy, (10 Ed.). Cengage Learning , USA. • Amin, A., and Shaheen F. (2005). Food and Nutrition. Academia International, Bierut, Lebanon. • Whitney E., Rolfes S., R. (2013). Understanding Nutrition, (13th Edition). Wadsworth, Cengage Learning, USA.
Course Duration		28 weeks
Delivery		Classroom Lectures. Discussion group.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Define the calorie and other units and the caloric content of different foods. • Know the food guides (Food pyramids) and use it in planning balanced meals. • Encourage an awareness of the relationship between diet and health in everyday life. • Know the dietary requirement of macro and micronutrients for individuals in different life cycle. • Define different methods used for determination of calculation of energy requirement. • Use food exchange list in planning balanced diets of individuals in different age group. • Develop skills necessary to provide well-balanced meals for all members of the family considering age, health, occupation etc.
Course Assessments		Assignment 1: 30%



	<p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1-2 (Week 1-2)	Orientation to course.
Session 3-4 (Week 3-4)	<ul style="list-style-type: none"> • Body composition and diet requirements at different stages of humans.
Session 5-6 (Week 5-6)	<ul style="list-style-type: none"> • Dietary Reference Values and Measurements
Session 7-8 (Week 7-8)	<ul style="list-style-type: none"> • Dietary constituents and the functions of food
Session 9-10 (Week 9-10)	<ul style="list-style-type: none"> • Simple classification of dietary constituents
Session 11-14 (Week 11-14)	<ul style="list-style-type: none"> • Optimal Requirements of Energy: <ol style="list-style-type: none"> 1. Basal metabolic rate (BMR) 2. Active Metabolic Rate (AMR). 3. The factors effecting on energy requirements by human 4. Estimated Energy Requirement calculation.
Session 15-18 (Week 15-18)	<ul style="list-style-type: none"> • Protein requirements (PER, NPU, BNB, P-Digestability) • prepare protein diets
Session 19-22 (Week 19-22)	<ul style="list-style-type: none"> • Meal planning and the main food systems <ol style="list-style-type: none"> 1. Food groups 2. Food Pyramide Guide System 3. Exchange Units system
Session 23-25 (Week 23-25)	<ul style="list-style-type: none"> • Food labels • preparing of diet for differents hospitalized patients • calculation of energy for truma and surgary
Session 26-28 (Week 26-28)	<ul style="list-style-type: none"> • Development of Nutritional and Dietary Guidelines <ol style="list-style-type: none"> 1. US nutritional guidlelines 2. Britain nutritional guidlelines • Other international nuritional guillelines
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the skill of browsing the Internet. • The student earns teamwork.



	<ul style="list-style-type: none"> • The student gains the ability to debate and scientific dialogue • The student gains the ability to be self-reliant in self-education.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Malnutrition diseases

1	Course name	Malnutrition diseases
2	Course Code	TN305
3	Course type	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	Nutrition biochemistry
7	Program offered the course	Therapeutic Nutrition
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course aims to introduce the student to the diseases that are caused by nutrients deficiency and the ways of preventing and treating these diseases. In addition to provide student with causes and who at risk for malnutrition. Topics covered include protein energy malnutrition (PEM), vitamin D deficiency, calcium deficiency, iron deficiency anemia, pernicious anemia, iodine deficiency, zinc deficiency, vitamin A deficiency and some diseases of B-vitamins deficiencies.
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Textbooks required for this Course:	Nikolaos K., and others (2010). Clinical Nutrition in practice, (1 st Ed.). Blackwell Publishing, USA. WHO (2004). Vitamins and Minerals requirements in human nutrition, (2 nd Ed). WHO Publication, Switzerland
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Course Duration	28 weeks
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Delivery	Classroom Lectures. Discussion group.
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Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Define the causatives of nutrition deficiency and excess diseases. • Identify the types of malnutrition and the predisposing factors for their causes. • Define the osteoporosis, osteomalacia, rickets and goiter diseases.
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	<ul style="list-style-type: none"> • Determine the different types of anemia which is linked to micronutrients deficiency. • Recognize the treatment and prevention of protein energy malnutrition (PEM) diseases. • Describe the mechanism of vitamin D synthesis in the body and its importance in maintaining bone health. • Recognize and explain the bad effect of vitamins and minerals deficiency on human health and how to treat and prevent them. • Define the obesity and overweight due to over intake of energy for prolong period.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Definition, causes and categories of people at high risk and susceptible to malnutrition
Session 2-3 (Week 2-3)	<p>Definitions of protein energy malnutrition</p> <p>Classifications of PEM</p> <p>Etiologies of Protein Energy Malnutrition (PEM)</p>
Session 4 (Week 4)	Kwashiorkor: etiologies, manifestations and treatment
Session 5 (Week 5)	Nutritional marasmus: etiology, manifestations and treatment
Session 6-7 (Week 6-7)	PEM in adults, complications, causes, accompany diseases, treatments
Session 8-9 (Week 8-9)	<p>Prevalence of PEM among children</p> <p>Clinical manifestation</p> <p>Laboratory investigation</p> <p>Treatment and prevention</p>
Session 10-11(Week 10-11)	<p>The different types of formula used by pediatric</p> <p>F 75</p> <p>F100</p> <p>Ready to use diet for malnutrition</p>
Session 12-13 (Week 12-13)	<p>Types of anemia</p> <p>Iron deficiency and other nutritional anaemias</p> <p>Classification of anemia</p> <p>Treatment approaches</p>



Session 14-15 (Week 14-15)	Vitamin A deficiency Complications Causes and prevalence Clinical manifestations Physiological changes Treatments methods
Session 16-18 (Week 16-18)	Iodine Deficiency Disorders (IDD) IDD complications Goiter classification Prevalence and identifications Clinical manifestations Treatment approaches Prevention programmes
Session 19 (Week 19)	Vitamin D synthesis and deficiency.
Session 20-21 (Week 20-21)	Calcium imbalance and osteoporosis, Osteomalacia and rickets diseases
Session 22-23 (Week 22-23)	Beriberi and thiamine deficiency Classifications Clinical manifestations Treatments methods
Session 24-25 (Week 24-25)	Pellagra diseases Causes and symptoms Treatments
Session 26 (Week 26)	Vitamin C deficiency and scurvy Clinical symptoms
Session 27 (Week 27)	Dental caries fluorosis and oral health
Session 28 (Week 28)	Obesity and overweight Classification Commorbidites Treatment and prevention
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • The student acquires the skill of browsing the Internet. • The student earns teamwork. • The student gains the ability to debate and scientific dialogue • The student gains the ability to be self-reliant in self-education.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The



instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

General Microbiology

1	Course name	General Microbiology
2	Course Code	TN201
3	Course type: /general/specialty/optional	General
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisites requirements	General biology
7	Program offered the course	Therapeutic nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		General Microbiology is an upper division course on Microbial Biology consisting of both lecture and laboratory. The course covers bereave identification of the microbial wards (bacteria, viruses, fungi and protozoa) , classification and morphology of microorganisms (size, shape, staining reaction and structure), physiology (reproduction, growth, nutrition, cultivation, metabolism, factors affecting growth, control of microbial growth especially in vivo i.e aspects of microbial therapy), mode of action, host parasite relationship, virulence factors, disease development and host response to microbial invasion or mechanisms of resistance. Relevant groups of microorganisms i.e. bacteria, fungi, viruses and parasites are considered.
Textbooks and References:		<ul style="list-style-type: none"> - Jacauelyng .Black microbiology – - Principles and Explorations- Gerard j .TortoraBerdellR.Funkechristineel.case Microbiology and Introduction . Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardiçoğlu, Atlas Kitapçılık, 2002, ISO 15189. - Kayser, Medical Microbiology © 2005 Thieme. - Greenwood et al: <i>Medical microbiology</i>, 2002. - Frances T Fischbach RN,; A Manual of Laboratory and Diagnostic Tests 7th edition; Lippincott Williams & Wilkins: 2003.
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> - Be familiar with the microbial world and its relation to human lives. - Know the methods and equipment used to investigate the microbial world. - Have a background about structure, metabolic pathways, and genetics of bacterial cells.



	<ul style="list-style-type: none"> - Understand the growth requirements of bacteria and how to control their growth. - Understand physical and chemical factors which affect microorganisms, principles of chemotherapy, microbial genetics, pathogenicity and microbial disease and mechanisms of resistance. - Know the basic principles of bacterial culture techniques and general biochemical tests. - Describe the morphological features of bacteria microscopically and on culture. - Describe different laboratory diagnostic test used
Course Assessments	Assignment 1: 10% Assignment 2: 30% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to microbiology The Microbial World Introduction and brief history of Microbiology. Classification of microorganisms.
Session 2 (Week 2)	General characters and classification of Bacteria. Bacterial Anatomy. Size, shape, and arrangement of bacterial cells, Structures external to the cell wall (glucocalyx, flagella, axial filaments, and Pili).
Session 3 (Week 3)	The cell wall, Structures internal to the cell wall (cytoplasm, nuclear, area, ribosomes, inclusions, and endospores). Capsule, Flagella, Inclusion, Granule, Spore
Session 4 (Week 4)	Microbial Growth Growth and nutrition of Microbes - Bacterial growth requirements. Bacterial division, Batch Culture, Continuous culture, bacterial growth- total count, viable count, bacterial nutrition, oxygen requirement, CO2 requirement, temperature, pH, light.
Session 5 (Week 5)	<ul style="list-style-type: none"> - Culturing of bacteria and media types - Preserving bacterial cultures and growth
Session 6 (Week 6)	-- Control of Microbial Growth Sterilization and Disinfection Physical agents- Sunlight, Temperature less than 1000C, Temperature at 1000C, steam at atmospheric pressure and steam under pressure, irradiation, filtration.
Session 7 (Week 7)	Chemical Agents- Alcohol, aldehyde, Dyes, Halogens, Phenols, Ethylene oxide.
Session 8 (Week 8)	Bacterial Genetics Genetic material Structure and function of the genetic material. Plasmids, replication. <ul style="list-style-type: none"> - Mutation: change in the genetic material. - Genetic transfer (transformation, conjugation, transduction, and recombination).
Session 9 (Week 9)	Microbial virulence factors and pathogenesis of bacterial infection.
Session 10 (Week 10)	Antibacterial antibiotics and their mode of action.



Session 11 (Week 11)	-Epidemiological aspects: Transmission, (sources and mode of infection), -Chemotherapy and antibiotic resistance. - Vaccination.
Session 12 (Week 12) Session 13 (Week 13)	Normal bacterial flora of human body.
Session 14(Week 14)	Midterm exam
Session 15(Week 15)	Parasitology Morphology and life cycle
Session 16 (Week 16)	Laboratory diagnosis of following parasites E. histolytica and Plasmodium
Session 17 (Week 17)	Tape worms and Intestinal nematodes
Session 18 (Week 18)	Mycology
Session 19 (Week 19)	Morphology, diseases and causes
Session 20 (Week 20)	Mycology Lab diagnosis of Fungi
Session 21 (Week 21) Session 22 (Week 22)	Virology General properties of viruses, diseases caused,
Session 22 (Week 22) Session 24 (Week 24)	Virology, lab diagnosis and prevention of following viruses, Herpes, Hepatitis, HIV, Rabies and Poliomyelitis.
Session 25 (Week 25) Session 26 (Week 26)	Virology, Rabies and Poliomyelitis.
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Anatomy and physiology:

1	Course name	Anatomy and physiology
2	Course Code	TN203
3	Course type: /general/specialty/optional	General
4	Accredited units	4
5	Educational hours	4



6	Pre-requisites requirements	None
7	Program offered the course	Therapeutic nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The introduction to anatomy course will study the shape and structure of the human body and its parts. Content includes: basic anatomy and structure of various organ systems of the body, neurons, cardio-vascular, respiratory, digestive and uro-genital systems. The practical part will be devoted to tutorials and studying on anatomical models of different body organs in each system that is mentioned above
Textbooks and References:		Anatomy & Physiology Coloring Workbook: A Complete Study Guide (11 th Edition) by Elaine N. Marieb (Author).
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 5. Explain interrelationships among molecular, cellular, tissue and organ functions in each system. 6. Describe the interdependency and interactions of the systems . 7. Explain contributions of organs and systems to the maintenance of homeostasis . 8. Identify causes and effects of homeostatic imbalances. <p>Upon the completion of this course student is expected:</p> <ol style="list-style-type: none"> 1. Cognitive <ol style="list-style-type: none"> a. Define Anatomy and Histology. b. Explain the importance of understanding Anatomy and Histology. c. Compare the normal macroscopic and microscopic structures with abnormal. 2. Affective <ol style="list-style-type: none"> a. Participate in learning process of different principles. b. Develop health consciousness to avoid homeostatic imbalance of the body. c. Develop caring attitude towards the human body. d. Use the different principles of human anatomy in their practice. 3. Psychomotor <ol style="list-style-type: none"> a. Express their understanding of the lesson by concept mapping. b. Develop basic science and laboratory skills by observing, experimenting, dissecting, recording etc. c. Draw and identify body part.
Course Assessments		Assignment 1: 40% Final Exam: 60 % 60% is required for a pass in this course.
Content Breakdown		Topical Coverage
Session 1 (Week 1)		Introduction to anatomy and human body. Organization of the human body Definition of Anatomy Level of organization



	Anatomical positions Body regions and cavities Terms used in Describing Body Structure Body planes and sections Directional terms
Session 2 (Week 2)	Cell Cycle 2. Epithelial Tissues a. Forms and characteristics of epithelial cells b. Specialization of the cell surface c. Types of epithelia
Session 3 (Week 3)	3. Connective Tissue a. Cells, fibers and ground substance b. Types of Connective tissues c. Adipose tissue d. Cartilage e. Bone tissue
Session 4 (Week 4)	4. Nerve Tissue a. Neurons and parts b. Glial cells and neuronal activity c. Synaptic communications
Session 5 (Week 5)	5. Blood Cells a. Composition of Plasma b. Red Blood Cells/Erythrocytes c. White Blood Cells/Leukocytes d. Hematopoiesis III. Integumentary System 1. Structure of the Skin a. Epidermis b. Dermis 2. Appendages of Skin a. Hair b. Nails C. Skin Glands
Session 6 (Week 6)	Body regions Upper limb Lower limb Thorax Abdomen Pelvis Head and neck
Session 7 (Week 7)	Body Systems Musculoskeletal system: Bones, joints and muscles Musculoskeletal system: Bones, joints and muscles -Function of urinary organs. -Fluid & electrolytes balances.
Session 8 (Week 8)	Digestive system Function of digestive organs. -Movements of alimentary canal -Role of enzymes in digestive process
Session 9 (Week 9)	Digestive system II: Accessories and glands
Session 10 (Week 10)	Cardiovascular system: heart and blood vessels



Session 11 (Week 11)	-Function of heart -Cardiac cycle (blood circulation)
Session 12 (Week 12) Session 13 (Week 13)	-Blood pressure and its regulation -ECG: methods of recording, normal record and common abnormalities.
Session 14(Week 14)	Midterm Exam
Session 15 (Week 15)	Lymphatic system
Session 16 (Week 16) Session 17 (Week 17)	Respiratory system Physiology of respiration. -Control of respiration -Hypoxia, cyanosis and dyspnea -Pulmonary function tests
Session 18 (Week 18) Session 19 (Week 19)	Nervous system I: Central nervous system: brain and spinal cord Nervous system II: Peripheral nervous system and cranial nerves
Session 20 (Week 20)	Nervous system III: Autonomic nervous system Special senses
Session 21 (Week 21)	Special senses
Session 22 (Week 22)	Endocrine system
Session 23 (Week 23)	Urinary system
Session 24 (Week 24)	Reproductive system
Session 25 (Week 25)	Gynecology, pregnancy, and childbirth
Session 26 (Week 26)	Embryology
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medical Ethics and healthcare communication skills

1	Course name	Medical ethics and Healthcare Communication Skills
2	Course Code	TN206
3	Course type: /general/specialty/optional	General

4	Accredited units	4
5	Educational hours	4
6	Pre-requisites requirements	None
7	Program offered the course	Therapeutic nutrition
8	Instruction Language	English
9	Date of course approval	2022
Brief Description		The course teaches students the medical ethics and the healthcare communications skills.
Textbooks and References:		<p>-The Ethical Slut: A Practical Guide to Polyamory, Open Relationships & Other Adventures Mar 10, 2009 by Dossie Easton and Janet W. Hardy</p> <p>1.Principles of Ethics for The Health Profession 2nd Edition. Timby, and Black, Evolve</p> <p>2. Bioethics, 1st edition, Letty Kwan, C and E Publishing</p> <p>3. Tom L. Beauchamp (Author), James F. Childress (Author). Principles of Biomedical Ethics. 4th Edition. Oxford University Press. 1994. ISBN-10:019508537X</p> <p>4- Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardiçoğlu, Atlas Kitapçılık, 2002, ISO 15189</p> <p>5- Principles of Ethics for the Health Profession 2nd Edition. Tim by, and Black, Evolve</p> <p>6- Bioethics, 1st edition, Letty Kwan, C and E Publishing</p>
Course Duration		28 weeks
Delivery		Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play. Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Discuss ethical cases using ethical principles 2. Ensure a sound ethical dimension to all cases in health care; acknowledging that each case has its ethical component. 3. Understand and impart a proper informed consent process 4. Understand negligence and malpractice 5. Understand the principle of invoking double effect 6. Distinguish between utilitarian approaches to health care, and, deontological approaches. 7. Understand what we mean by respecting the autonomy of patients.
Course Assessments		<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p>
Content Breakdown		Topical Coverage



Session 1 (Week 1)	Orientation to course/Overview of medical ethics Rights & duties of doctors, patients, family and community
Session 2 (Week 2)	Inter professional relationships
Session 3 (Week 3)	Accountability & misconduct of profession
Session 4 (Week 4)	Rules & regulations of the medical profession
Session 5 (Week 5)	Islamic principles & jurisdiction related to disease and practice of profession
Session 6 (Week 6)	Ethical aspects of newer medical issues,
Session 7 (Week 7)	Ethical aspects of medical research
Session 8 (Week 8)	Patient's secrets, file and reassurance & other topics
Session 9 (Week 9)	The role of the laboratory in the health service -
Session 10 (Week 10)	Laboratory customers
Session 11 (Week 11)	
Session 12 (Week 12)	The organization of the hospital and the laboratory
Session 13 (Week 13)	
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	<ul style="list-style-type: none"> • Introduction to the Course • Why is Health Communication Important? • Sociohistorical Considerations • Public & Political Considerations • Social Considerations • Cultural Considerations
Session 16 (Week 16)	
Session 17 (Week 17)	<ul style="list-style-type: none"> • Stigma & Mental Health • Guest speaker: Elizabeth Flood Reading TBA
Session 18 (Week 18)	
Session 19 (Week 19)	<ul style="list-style-type: none"> • Interview Paper due Interpersonally & Narratively Making Sense of Health
Session 20 (Week 20)	<ul style="list-style-type: none"> • Patient Caregiver Communication
Session 21 (Week 21)	<ul style="list-style-type: none"> • Narrative Medicine, Perspective Taking, Patient Perspectives
Session 22 (Week 22)	<ul style="list-style-type: none"> • Communication in the Cancer Clinic • Narratives of Illness
Session 23 (Week 23)	
Session 24 (Week 24)	<ul style="list-style-type: none"> • Health Caregiver Perspectives • Family Caregiver Perspectives • Family caregivers: Social support & Silence
Session 25 (Week 25)	
Session 26 (Week 26)	<ul style="list-style-type: none"> • Death & Dying: Palliative Care • Death & Dying: Final Conversations
Session 27 (Week 27)	<ul style="list-style-type: none"> • Community based Participatory Research • Education Wittenberg • Health Campaigns.
Session 28 (Week 28)	
Session 26 (Week 26)	Communication Matters Campaign
Session 27 (Week 27)	Final exam
Session 28 (Week 28)	



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Basic Healthy Nutrition

1	Course name	Basic Healthy Nutrition
2	Course Code	TN200
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Biochemistry
7	Program offered the course	Therapeutic nutrition
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

This course introduces general nutritional concepts in health and disease and includes practical applications of that knowledge. Special emphasis is given to nutrients and nutritional processes including functions, food sources, digestion, absorption, and metabolism. Food safety, availability, and nutritional information including food labels, advertising, and nationally established guidelines are addressed.

Textbooks required for this Course:

1. Nutrition in the community- A textbook, Sharma S, Wadhwa, 2003 2nd Edition, Publishing House Pvt. Ltd, India
2. Krause's Food & Nutrition Therapy, L. Kathleen Mahan Sylvia Escott- Stump ,13th Edition, Saunders, Washington
3. Understanding Normal and Clinical Nutrition, Sharon Rady Rolfes Kathryn Pinna Ellie Whitney, 9th Edition, Brooks ole USA
4. Human Nutrition and Dietetics, J. S. Garrow W. P. T. James A. Ralph, 10th Edition, Churchill Livingstone USA



Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion
Course Objectives:	<p>This course fulfills the Life and Physical Sciences foundational component area of the core and addresses the following required objectives</p> <ol style="list-style-type: none"> 1. Apply nutritional knowledge to analyze personal dietary intakes, to plan nutritious meals using nationally established criteria to meet recommended goals, and to evaluate food labels and the validity of nutritional claims. 2. Trace the pathways and processes that occur in the body to handle nutrients and alcohol through consumption, digestion, absorption, transport, metabolism, storage and waste excretion. 3. Discuss functions, sources, deficiencies, and toxicities of macro- and micronutrients, including carbohydrates, lipids, proteins, water, vitamins, and minerals. 4. Apply the concept of energy balance and its influences at the physical, emotional, societal, and cellular level to evaluate advantages and disadvantages of various methods used to correct energy imbalances. 5. Understand the harmful effects of unhealthy and inappropriate eating and compare the roles of different macronutrients in the diet. 6. Understand the relationship between nutrition and human health. 7. The role of nutrition in maintaining the health of the body and how the body deals with nutrition in a balanced manner to maintain health
Course Assessments	<p>Assignment : 40%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction of Nutrition (vitamins and minerals, water),
Session 2 (Week 2)	•food pyramid and importance and of nutrition factors
Session 3 (Week 3)	•chemical structure, classification, functions, sources,
Session 4 (Week 4)	Recommended daily intake values, overdose and toxicities. Food Pyramid
Session 5 (Week 5)	Basic concepts in food and nutrition
Session 6 (Week 6)	Basic terms used in study of food and nutrition Understanding relationship between food, nutrition and health
Session 7 (Week 7)	Functions of food-Physiological, psychological and social Nutritional processes including functions,
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	food sources, digestion, absorption, and metabolism
Session 10 (Week 10)	Nutrients Functions, dietary sources and clinical manifestations of deficiency/ excess of the following nutrients Carbohydrates, lipids and proteins
Session 11 (Week 11)	Fat soluble vitamins-A, D, E and K •Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C •Minerals – calcium, iron and iodine.....
Session 12 (Week 12)	Nutrition during Lifecycle Physiological considerations and nutritional concerns for the following life stages: • Adult man / woman • Preschool children



Session 13 (Week 13)	<ul style="list-style-type: none"> • Adolescent children • Pregnant woman • Nursing woman and infant
Session 14 (Week 14)	Nutrition during childhood <ul style="list-style-type: none"> •Growth and development, growth
Session 15(Week 15)	reference/ standards, RDA, nutritional guidelines, nutritional concerns and healthy food choices
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • Identify the six classes of nutrients and their primary function • Construct a meal plan that meets nutritional guidelines • Recognize the cause of various nutritional diseases.
Course Change	At the end of the program, the student will be familiar with the basics of proper nutrition, the damages caused by improper nutritional programs, and the relationship between chronic diseases and nutritional programs. And the student gained a scientific base on which to build on the rest of the relevant programs

General Pathology

1	Course name	General Pathology
2	Course Code	TN205
3	Course type: /general/specialty/optional	Optional
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	None
7	Program offered the course	Therapeutic nutrition
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	The broad goal of the teaching of undergraduate students in pathology aims at providing comprehensive knowledge of the morbid anatomy, Histopathology, etiology and pathogenesis with the complications of various diseases to provide a basis for understanding the clinical correlation and the skills to practice as a qualified Physiotherapist.
	Textbooks required for this Course:	Text book of Pathology-by Harsh Mohan Pathologic basis of disease by Cotran, Kumar, Robbins.
	Course Duration	28 weeks
	Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.



Course Objectives:	<p>At the end of the course, the student will be able to :</p> <ul style="list-style-type: none"> • Acquire the knowledge of concepts of cell injury & changes produced thereby in different tissues & organs, capacity of the body in healing process. • Recall the etio -pathogenesis, the pathological effects & the clinico-pathological correlation of common infections & non-infectious diseases • Acquire the knowledge of concepts of neoplasia with reference to the etiology, gross & microscopic features, diagnosis & prognosis in different tissues & organs of the body. • Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinical significance [with special emphasis to neuro-musculoskeletal & cardio-respiratory systems] • Acquire knowledge of common immunological disorders & their resultant effects on the human body. • Understand in brief, about the Haematological diseases & investigations necessary to diagnose them & determine their prognosis.
Course Assessments	<p>Assignment 1: 30%. Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week):</p> <ul style="list-style-type: none"> • Cell injury-causes, mechanism & toxic injuries with special reference to Physical, Chemical & ionizing radiation. <p>b] Reversible injury [degeneration] - types, morphology, swelling, hyaline, fatty changes</p>
Session 2 (Week 2)	<p>Assignment 1 handed out</p> <p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Intra- cellular accumulation hyaline, mucin <p>Irreversible cell injury types of necrosis, apoptosis, calcification, dystrophic & metastatic.</p> <p>Extra-cellular accumulation amyloidosis, calcification-Pathogenesis, morphology.</p>
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <p>Inflammation & Repair:-</p> <p>a] Acute inflammation-features, causes, vascular & cellular events b] Morphologic variations</p>
Session 4 (Week 4)	<p>c] Inflammatory cells & mediators</p> <p>d] Chronic inflammation:-causes, types, non-specific & Graunulomatous – with examples</p>



	Wound healing by primary & secondary union, factors promoting & delaying healing process.
Session 5 (Week 5)	Topics to be covered in the session (week) • f] Healing at various sites-including bones, nerve & muscle g] Regeneration & repair
Session 6 (Week 6)	Topics to be covered in the session (week) • Immuno-pathology-[basic concepts] a] Immune system : organization, cells, antibodies, regulation of immune responses and Organ transplantation.
Session 7 (Week 7)	Topics to be covered in the session (week) Hyper-sensitivity c] Secondary immuno-deficiency including HIV
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) • Circulatory disturbances a] Edema-pathogenesis, types, transudates/exudates b] Chronic venous congestion-lung, liver, spleen c] Thrombosis-formation, fate, effects d] Embolism-types, clinical effects
Session 10 (Week 10)	Topics to be covered in the session (week) • e] Infarction-types, common sites f] Gangrene-types, aetiopathogenesis g] Shock-pathogenesis, types, morphologic changes
Session 11 (Week 11)	Deficiency disorders-Vitamin A, B, C, D.
Session 12 (Week 12)	Growth Disturbance a] Atrophy-malformation, agenesis, metaplasia, dysplasia, hypertrophy, hyperplasia b] Neoplasia, calcification, histogenesis, biologic behavior, difference between benign & malignant tumor c] Malignant neoplasms –grades, stages, local & distal spread d] Carcinogenesis-environmental carcinogens e] Chemical, Occupational, heredity, viral
Session 13 (Week 13)	Medical Genetics : a) Karyotypic abnormalities b) Mendelian disorders c) Inborn errors of metabolism
Session 14 (Week 14)	Specific Pathology:- A] CVS a] Arteriosclerosis-Ischemic heart diseases – angina, myocardial infarction Pathogenesis / Pathology b] Hypertension c] C.C.F. d] Rheumatic & Congenital H.D.
Session 16 (Week 16)	Final Exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Project Graduation

1	Course name	Project Graduation
2	Course Code	TN407
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Research Methodology
7	Program offered the course	Therapeutic nutrition
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Training on project establishment and methodology of execution including literature reviewed and use scientific information resources
Textbooks and References:	The students will use different resources.
Course Duration	28 weeks
Course Objectives:	<p>- KNOWLEDGE & UNDERSTANDING:</p> <p>a1-Define the Principles of research planning and design</p> <p>a2- Describe principles of basics of experimental design and analysis.</p> <p>b- INTELLECTUAL SKILLS</p> <p>b1- Identify suitable research topics.</p> <p>b2- Undertake independent research.</p> <p>b3- Be able to do Critical review and analysis of related literature.</p>



	<p>c-PROFESSIONAL AND PRACTICAL SKILLS</p> <p>c1- Design research study</p> <p>c2- Perform method validation and presentation of research report.</p> <p>c3- Write the research proposal and theses.</p> <p>d- GENERAL AND TRANSFERABLE SKILLS</p> <p>d1-Demonstrate appropriate communication skills.</p> <p>d2- Present clearly and effectively scientific topic in a tutorial or a staff meeting.</p> <p>d3- Work separately or in a team to research and prepare a scientific topic.</p>
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
<p>Session 1 (Week 1)</p> <p>Session 26 (Week 26)</p>	<p>Development of a research protocol</p> <p>Fieldwork and data analysis</p> <ul style="list-style-type: none"> - The research project course involves the generation of new scientific information and a review and understanding of the scientific literature. - The research may be conducted in a laboratory, hospital, community laboratories, different company, etc., depending on the project and the supervisor. - Students are divided into groups and each group is working together. - Students are expected to work approximately 56 hours. This will include working in the laboratory, etc., reading or searching literature, and writing up the research project. - Fields of study available may include: <ul style="list-style-type: none"> Biomedical genetics Immunogenic Cancer genetics Biochemistry Genetics Diagnosis Embryology
<p>Session 27 (Week 27)</p> <p>Session 28 (Week 28)</p>	Final Exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<p>The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer,</p>



	interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



4- قسم الأشعة التشخيصية و العلاجية



Radiological Imaging tech I

1	Course name	Radiological Imaging tech I
2	Course Code	RAD204
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st subject to pass max. 2subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	It is considered one of the most important subjects that provides the student with theoretical and practical information in terms of the conditions and the anatomical subject of the organ to be imaged from the human body. It represents the acquisition of the necessary basic technical skills that enable the student at the end of the program to perform the basic conditions for orthopedic examinations.
Textbooks required for this Course:	<p>1- Aunt Minnie's Atlas and Imaging-Specific Diagnosis 4th edition by Thomas L. Pope Call Number: e-book - multiple user license ISBN: 9781451172157 Publication Date: 2013-10-25 an excellent study tool</p> <p>2- Bontrager's Handbook of Radiographic Positioning and Techniques by John Lampignano; Leslie E. Kendrick Call Number: Circulation 616.0757 B644 ISBN: 9780323485258 Publication Date: 2017-03-01 NEW 8/2018</p> <p>3- radiography PREP (Program Review and Exam Preparation), Ninth Edition by D. A. Saia Call Number: Course Reserve ISBN: 9781259863578 Publication Date: 2018-01-01</p>



	<p>NEW 8/2021</p> <p>4- Radiological Sciences Dictionary by David J. Dowsett Call Number: e-book - one-user license ISBN: 9780340941676 Publication Date: 2009-05-17</p> <p>5- The Radiology Handbook by J. S. Benseler Call Number: e-book - Multiple-user license ISBN: 9780821417089 Publication Date: 2014</p>
Course Duration	<p>56 hours</p> <p>An additional hours of homework per day is expected during this course.</p>
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<p>The student should be able :</p> <p>1- To promote and develop for the public benefit the science and practice of radiography and radio therapeutic technology and allied subjects.</p> <p>2- To promote, study and research work in radiography and radio therapeutic technology and allied subjects and to publish the results of all such study and research.</p>
Course Assessments	<p>Midterm exam 40%</p> <p>Final Exam: 60%</p> <p>A 60 %is required to pass this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Introduction to diagnostic and therapeutic radiology
Session 2 (Week 2)	Introduction: General presentation of the course and the importance of linking it to other subjects
Session 3 (Week 3)	Objectives of the technology of examinations x-rays
Session 4 (Week 4)	General rules for taking x-rays
Session 5 (Week 5)	Good picture specifications
Session 6 (Week 6)	<p>Instructions for photographing: Definition (the organ to be photographed in terms of its anatomical location) Purpose (Purpose of Photography) Equipment (preparations for shooting) Prepare the patient - prepare the equipment - prepare the films.</p> <p>Exposure factors: fixed amps - kilovolts - - distance.</p> <p>Patient care before, during and after the scan.</p>
Session 7 (Week 7)	<p>Situations and Projections (Method)</p> <p>Radiation protection: patient protection - protection for technicians and workers - protection for patient companions</p> <p>Technical and anatomical terms used in photography.</p> <p>Contrast in X-rays</p>



Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Skeletal examinations, which include basic and additional examinations of the organs and the following parts: Upper limbs - fingers - hand - wrist joint - forearm - elbow joint - humerus - scapula - shoulder joint - collarbone - lower extremities - flat feet - foot - ankle joint - leg - knee joint - patella - thigh - pelvis - pelvic joint - abdomen
Session 16 (W16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
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Radiation protection

1	Course name	Radiation protection
2	Course Code	RAD201
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	None
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course provides information on radiation protection, including hazards and biological effects of ionizing radiation.



	The information on radiation protection will enable the student to ensure safe practice of radiological technology, for both patient and operator.
Textbooks required for this Course:	Barrett, A., Dobbs, J., Morris, S., & Roques, T. (2009). Practical Radiotherapy Planning. (4th Edition). London: Hodder education Bomford, C.K. & Kunkler, I.H. (2003) Walter and Miller's textbook of radiotherapy: radiation, physics, therapy and oncology. (6th ed.) Edinburgh, Churchill Livingstone. Bushberg, J. T. (2002) The essential physics of medical imaging. Philadelphia, Pa.; London: Lippincott Williams & Wilkins. Giancoli, D.C. (2005). Physics - Principles with Applications. (6th Edition). Prentice Hall, USA. Hass, M.L., Hogle, W.P., Moore-Higgs, G.J. & Gosselin-Acomb, T.K. (2007). Radiation Therapy: A guide to patient care. Mosby Elsevier, St Louis.
Course Duration	28 hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities.
Course Objectives:	By the end of this course the student should be able to: 1. Demonstrate knowledge and application of calculations used in radiation therapy; 2. Determine knowledge, application of principles and concepts of computer planning for critiquing standard techniques; 3. Demonstrate an understanding of imaging and anatomy, relevant to computer planning; 4. Discuss the effects of radiation on biological systems.
Course Assessments	Midterm exam 40% Final Exam: 60% A 60 % is required to pass this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Calibration conditions (b) Inverse square law (c) Attenuation factors for SSD and SAD techniques
Session 2 (Week 2)	Manual calculations of radiation therapy SSD and SAD treatment techniques including shielding and extended SSD (e) Justification of factors used and resulting MU
Session 3 (Week 3)	Consolidate knowledge of computer planning principles by producing a range of standard radiation therapy plans. Principles to include: - isodose distributions - ICRU 50/62
Session 4 (Week 4)	Consolidate knowledge of computer planning principles by producing a range of standard radiation therapy plans. Principles to include: exit dose and arrangement - inhomogeneities - wedges
Session 5 (Week 5)	Consolidate knowledge of computer planning principles by producing a range of standard radiation therapy plans. Principles to include: monitor units - field verification - organs at risk



Session 6 (Week 6)	Consolidate knowledge of computer planning principles by producing a range of standard radiation therapy plans. Principles to include: Contouring methods - volume transfer.
Session 7 (Week 7)	(a) Applied anatomy and imaging (b) Diagnostic imaging e.g. CT, SPECT, PET, MRI
Session 8 (W 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Radiation chemistry Mammalian cell sensitivity Physical modification of radiation exposure Acute radiation syndrome Late effects of radiation Image fusion Normalization - weighting - beam energy, d-max, Apply computer planning principles by students critiquing the plans produced.
Session 16 (W 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Patient care

1	Course name	Patient care
2	Course Code	RAD206
3	Course type: /general/specialty/optional	Specialty



4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st subject to pass max. 2subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Naturally, hospitals vary in the way patients are admitted, but in general, the procedures are similar. The patient's family or significant other is invited to accompany the patient as the interventional radiologist and radiology staff will meet with him or her and explain the details of what is to be performed, including the risks and potential complications of the procedure.
Textbooks required for this Course:	<ul style="list-style-type: none"> • Radiography Essentials for Limited Practice - E-Book <u>Bruce W. Long, Eugene D. Frank, Ruth Ann Ehrlich/ Sciences, 2014/04/14</u> <ul style="list-style-type: none"> • Introduction to Radiography and Patient Care/ Arlene McKenna Adler, Richard R. Carlton Saunders, 1999. • Torres' Patient Care in Imaging Technology <u>Andrea Dutton, TerriAnn Ryan</u> Wolters Kluwer Health
Course Duration	28 hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<p>student Learning Outcomes:</p> <ul style="list-style-type: none"> • Students will demonstrate confidence and knowledge in positioning skills. • Students will demonstrate the ALARA concept by practicing radiation protection to patients, self, and others. • Students will determine appropriate technical factors for a quality image. • Graduates will be prepared as entry-level radiographers.
Course Assessments	Midterm exam 40% Final Exam: 60% 60 %is required to pass this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	The concept of health - the concept of the patient



Session 2 (Week 2)	The relationship between the radiology technician and the patient in the radiology department
Session 3 (Week 3)	Responsibilities of the technician in the radiology department towards the patient (medically - ethical - legal - professionally)
Session 4 (Week 4)	Working with the portable or portable device inside the department in terms of sterilization (preventing pollution in the operating room - radiation protection).
Session 5 (Week 5)	Health care in radiological departments (non-transmission of infection)
Session 6 (Week 6)	Appointment system for patients in departments for colorant examinations
Session 7 (Week 7)	Medicines used in X-ray examinations Preparing and caring for the patient for X-ray examinations
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Preparing and caring for the patient for X-ray examinations. Oncology patient care in radiology and nuclear medicine departments Nursing care - nursing operations - first aid - blood circulation - wounds - burns - fractures - poisoning - entry of foreign bodies into the nose, ears and eyes.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Medical Terminology I

1	Course name	Medical Terminology I
2	Course Code	RAD207
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1st year subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	<p>The course is designed to enable students to enhance ability to comprehend spoken and written English required for effective communication in their professional work.</p> <p>Students will practice their skills in verbal and written English during clinical and classroom experience.</p>
Textbooks required for this Course:	<p>Medical Terminology: An Illustrated Guide: An Illustrated Guide 9th Edition by Barbara Janson Cohen, Shirley A Jones</p> <p>Quick & Easy Medical Terminology, 9th Edition by Peggy C. Leonard, MT, Med</p> <p>The Language of Medicine, 12e 12th Edition by Davi-Ellen Chabner</p>
Course Duration	<p>28 hours</p> <p>An additional hours of homework per day is expected during this course.</p>
Delivery	Lecture-based, Group interaction and discussion, self-directed activities.
Course Objectives:	<p>Upon successful completion of this course, students will be able to: 1. Analyze how medical terms are built using common word parts. 2. Properly spell, define, and pronounce medical terms associated with each of the major body systems. 3. Identify and define the word parts most frequently associated with the major body systems. 4. Interpret common abbreviations used in medical terminology and avoid errors when using them.</p>
Course Assessments	<p>Midterm Exam: 40%</p> <p>FinalExam: 60%</p> <p>A 60 %isrequiredtopassin this course</p>



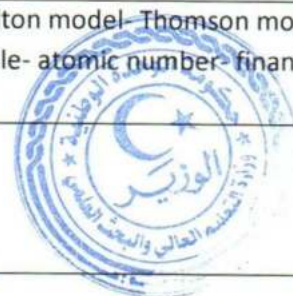
Topical Coverage	Topics Coverage
Session 1 (Week 1)	Body Structure
Session 2 (Week 2)	Integumentary System
Session 3 (Week 3)	Musculoskeletal System
Session 4 (Week 4)	Digestive System
Session 5 (Week 5)	Respiratory System
Session 6 (Week 6)	Cardiovascular System
Session 7 (Week 7)	Urinary System
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Female Reproductive System Male Reproductive System
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Radiological physics

1	Course name	Radiological physics
2	Course Code	RAD200
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2



6	Pre-requisite requirements	All 1 st subject to pass max. 2subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Radiologic Physics is the study of medical imaging components, technology, and parameters in an effort to produce optimal imaging results. The goal with studying radiologic physics is to ensure to get clear images while ensuring the patient is safe from radiation.
Textbooks required for this Course:		The Essential Physics of Medical Imaging. Bushberg. Duke Review of MRI Principles: Case Review Series, 1e. Physics in Nuclear Medicine. Simon R. Cherry, James A. Sorenson, Michael E. Phelps. Nuclear Medicine Physics: The Basics. Ramesh Chandra. Radiobiology for the Radiologist. Eric Hall.
Course Duration		28 hours An additional hour of homework per day is expected during this course.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:		Upon completion of this course, students will be able to: <ul style="list-style-type: none"> - Describe x-ray production. - Compare the factors that influence x-ray production and output. - Describe the characteristics of the x-ray beam produced in the various equipment energy ranges. - Explain the major influencing factors of proton beam attenuation. - Explain charged particle interactions with matter, describing dose deposition, energy loss and shielding requirements. - State the occupational and public recommended dose limits.
Course Assessments		Midterm exam 40% Final Exam: 60% A 60 % isrequired to pass this course.
Content Breakdown		Topics Coverage
Session 1 (Week 1)		Metter and energy - types of matter – types of energy – the relationship between matter and energy
Session 2 (Week 2)		Electromagnetic radiation – definitions- Electromagnetic radiation spectrum.
Session 3 (Week 3)		The structure of the atom- a brief history- Dalton model- Thomson model- Rutherford model- Boar's atoms- exclusion rule- atomic number- financial number- isobar- isotone- isomer- nuclide.



Session 4 (Week 4)	X-ray history – nucleus stability factors – radioactive decay method- radioactive decay equation – radioactive units- half –life of radioactive isotopes.
Session 5 (Week 5)	X-ray- installation of ray by losing focus- continuous spectrum of x-ray- heel effect- x-ray production efficiency – x ray distribution around the target.
Session 6 (Week 6)	The interaction of photons with matter- attenuation coefficients – half-value thickness — absorption.
Session 7 (Week 7)	Interaction of alpha and beta particles and electrons with matter.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	<ul style="list-style-type: none"> - neutrons interact with matter. -filtration and filters – definition – types of filters- radiation quality second thickness equal to the value - illumination phenomenon – deflection- alkaline – phosphorous- thermal.- - methods for measuring the amount of radiation- general characteristics of measuring devices- the most important methods of measurement – gas meters – flash number- calculating dose of absorbed radiation. - physics of radiography – structure and properties of the ray film as steps of image formation characteristic curve of the ray film- no sharpness (aberration)- geometric factors affecting the ray image- contrast – effect of scattered radiation on contrast – improving image contrast- calculating the contrast value. - intensive screens- their composition- their characteristic.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor’s note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.

Radiographic anatomy

1	Course name	Radiographic anatomy
2	Course Code	RAD202



3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course relates images on radiographs, and from other imaging modalities, to basic anatomical knowledge. It develops a fundamental understanding of medical imaging information, relative to radiographic positioning. The course also provides an awareness of common anomalies, which may be encountered in general radiographic practice.
Textbooks required for this Course:	Textbook of radiographic positioning and related anatomy Bontrager, Kenneth L., author. Lampignano, John P., author. Radiography, Medical -- Positioning , Human anatomy Applied Radiological Anatomy / 2nd Edition EDITORS: Paul Butler, The Royal London Hospital / Adam Mitchell, Charing Cross Hospital, London / Jeremiah C. Healy, Chelsea and Westminster NHS Foundation Trust. Carlton R.R. and Adler A.M. (2013), Radiographic Imaging Concepts and Principles (5 th edition), Delmar, ISBN 1473720524, Core text for Fundamentals of Radiographic Practice (PAM1020) and Medical Imaging Applications (PAM2013).
Course Duration	56 hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	By the end of this course the student should be able to: 1- Study of human skeleton. 2. Study with the help of charts and models of the following systems and organs. a) Digestive system b) Respiratory system c) Cardio-vascular system d) Urinary system 3. Microscopic examination of epithelial tissue, cardiac muscle, smooth muscle, skeletal muscle, connective tissue and nervous tissue. 4. Examination of blood films for TLC, DLC and malarial parasite. 5. Determination of clotting time of blood, erythrocyte sedimentation rate and hemoglobin value. 6. Recording of body temperature, pulse, heart rate, blood pressure and ECG.



Course Assessments	Midterm exam 40% Final Exam: 60% A 60 % is required to pass this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Structure of skeleton – structure of skeletal muscle – physiology of muscle contraction, Structure and classification of joints, movements at the joints. Bones & Joints of upper extremity, Bones of thoracic cage, Clavicle and scapula, Joints of shoulder girdle, Bones of pelvis, Bones & Joints of lower extremity, Bones of skull and Fontanelles, Base of skull, Bones of face, Cervical spine and atlanto axial joints, Dorsal spine, Lumbo Sacral spine, Mandible and TM joints, Mastoids and PNS. Anatomy
Session 2 (Week 2)	Elementary tissues of human body- Epithelial tissue, muscular tissue, connective tissues and nervous tissue
Session 3 (Week 3)	Respiratory System: various parts of respiratory system and their functions, Anatomy of upper respiratory tract, Structure and functions of lungs, Anatomy of bronchial tree, Physiology of Respiration
Session 4 (Week 4)	Cardio Vascular System - Anatomy of heart and functions- Structure and functions of various parts of the heart, arterial and venous system, brief account on common cardiovascular disorders. Blood pressure and its recording. Anatomy and function of arteries, capillaries and Arterial system, Venous system.
Session 5 (Week 5)	structure and function of kidneys- Anatomy of ureters, bladder and urethra - physiology of urine formation, its constituents- pathophysiology of renal disease and edema
Session 6 (Week 6)	Digestive System - names and various parts of digestive system-Buccal Cavity, Pharynx, Oesophagus, Stomach, intestine etc.-physiology of digestion and absorption, Structure functions salivary glands. Enzymes, Structure and functions of pancreas, Anatomy of teeth, Pharynx, Oesophagus, Functions of Stomach and duodenum, Small & Large intestine structure & functions. Anatomy and function of liver, LFT, Physiology of Jaundice. Anatomy of Portal circulation and portal hypertension. Gall bladder, structure and function, Physiology of digestion and food components.
Session 7 (Week 7)	Hematology-Composition of Blood - functions of blood elements –Blood Group and coagulation of blood, disorders of blood.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	General structure of the human body, anatomic terminology, planes of section-Structure and function of human cell with special reference to mitochondria and ribosomes. Reproductive System physiology and anatomy of Male & Female reproductive system-Prostate & Uterus & Ovaries etc. The Mammary glands – anatomy & physiology and & its importance in imaging.



	Lymphatic system - Name and function of lymph glands, Lymphatics and Lymphatic pathway outline
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Radiography Equipment I

1	Course name	Radiography Equipment I
2	Course Code	RAD205
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st year subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Equipment and physics of x-ray production. Includes basic xray Circuits. Also examines the relationship of conventional and digital equipment components to the imaging process.
Textbooks required for this Course:		1. X-Ray Equipment Maintenance and Repairs Workbook for Radiographers and Radiological Technologists Produced by the WHO Dept. of Essential Health Technology Series. Ian R McClelland, Publisher- WHO, 2004.



	2. Quality Assurance Workbook for Radiographers & Radiologic Technologists , Peter J. Lloyd, Nonserial Publication, WHO.
Course Duration	28 hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	By the end of this course the student should be able to: 1. Compare and contrast conventional and digital equipment. 2. Explain the physics of x-ray production. 3. Describe basic x-ray circuits. 4. Relate conventional and digital equipment components to the imaging process
Course Assessments	Midterm Exam: 25% Partical:35% FinalExam: 40% A 60 %isrequiredtopassin this course
Content Breakdown	Topics Coverage
Session 1 (Week 1)	1. X-ray machines – X-Ray tube: historical aspects - early X-Ray tubes (Coolidge tubes) - construction of X-Ray tubes,
Session 2 (Week 2)	voltage, current - space charge - tube envelop and housing - cathode assembly, X-ray production efficiency
Session 3 (Week 3)	advances in X-Ray tubes, Common factors affecting
Session 4 (Week 4)	2. Portable/Mobile X-ray units- Equipment for mobile radiography- principle uses- mobile image intensifiers
Session 5 (Week 5)	3. Fluoroscopy: Fluoroscopic equipment-Direct fluoroscopy – The serial changer(spot film device) - Fluoroscopic screen -fluoroscopic image
Session 6 (Week 6)	4. Computed Radiography (C.R) –equipment parts –advances
Session 7 (Week 7)	5. Digital Radiography– principle - photostimulable phosphors-image acquisition-digital spot imaging
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	6. Mammography 7. Dental Radiography 8. Tomography



	9. Computed Tomography- 10. Angiography Equipments-
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Radiographic Pathology

1	Course name	Radiographic Pathology
2	Course Code	RAD203
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology D.
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The broad goal of the teaching of undergraduate students in pathology aims at providing comprehensive knowledge of the morbid anatomy, Histopathology, etiology and pathogenesis with the complications of various diseases to provide a basis for understanding the clinical correlation and the skills to practice as a qualified Radiologist.



Textbooks required for this Course:	<ul style="list-style-type: none"> • Crowley, Leonard V. An introduction to human disease: pathology and pathophysiology correlations. 8th ed. (Sudbury, MA) Jones and Bartlett, 2014. • Eisenberg, Ronald Nancy Johnson. Comprehensive Radiographic Pathology. 6th ed. St. Louis, Mo. Mosby / Elsevier, 2015. • Mace, James Nina Kowalczyk. Radiographic Pathology for Technologists. 6th ed. St. Louis: Mosby, 2014. • Linn-Watson, TerriAnn. Radiographic Pathology. 2nd. Philadelphia: W.B. Saunders, 2014.
Course Duration	<p>28 hours</p> <p>An additional hours of homework per day is expected during this course.</p>
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<p>Upon completion of this course the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the pathology of physiologic processes and conditions that can affect tissues, organs, and body systems. 2. Utilize pathology and radiologic imaging principles to develop the technical competence to perform diagnostic imaging procedures on patients afflicted with disease. 3. Develop an understanding of the intricacies associated with providing direct patient care with patients afflicted with disease in today's health care setting. 4. Apply pathology principles to recognize the difference between abnormal and normal radiographic appearances. 5. Analyze the significance of the variety of imaging and medical procedures used in diagnosing diseases.
Course Assessments	<p>Midterm exam: 40%</p> <p>Final Exam: 60%</p> <p>A 60 % is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course.</p> <p>Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week):</p> <p>Define basic pathology related terms</p>



	Identify diseases caused by or contributed to by genetic factors. Identify diseases caused by or contributed to by environmental factors
Session 2 (Week 2)	The healing process. Examples of additive and destructive diseases and exposure technique alterations required by the radiographer.
Session 3 (Week 3)	NOVA's Cancer Warrior and describe the term angiogenesis.
Session 4 (Week 4)	common characteristics of benign and malignant neoplasms
Session 5 (Week 5)	Under instructor supervision, perform a core needle biopsy on an apple and examine the specimens obtained.
Session 6 (Week 6)	Multiple specialized imaging procedures used in diagnosing disease processes (US, CT, MRI, NM, PET, angiography, cardiology and mammography).
Session 7 (Week 7)	Anatomic structures on diagrams and radiographs of the chest, skeletal system, GI system, and urinary system.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	The physiology and function of the respiratory system, skeletal system, GI system, and urinary system.
Session 10 (Week 10)	common pathologic disorders and identify radiographic manifestations presented in chapters
Session 11 (Week 11)	the use of non-ionizing imaging modalities such as MRI or US when clinically appropriate
Session 12 (Week 12)	Anatomic structures on diagrams and radiographs of the cardiovascular system, nervous system, hematopoietic system, endocrine system, and reproductive system.
Session 13 (Week 13)	The physiology and function of the cardiovascular system, nervous system, hematopoietic system, endocrine system, and reproductive system.
Session 14 (Week 14)	<ul style="list-style-type: none"> • Common pathologic disorders and identify radiographic manifestations presented in chapters • Cardiac CT for calcium scoring • The use of non-ionizing imaging modalities such as MRI or US when clinically appropriate.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.



Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Cross Sectional Anatomy

1	Course name	Cross sectional anatomy
2	Course Code	RAD300
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology D.
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course was developed for the student to learn the essentials of sectional anatomy in an easy-to-follow format with the online modules developed by the ASRT. Students will solidify concepts learned from the modules with hands-on learning in occasional labs using the Anatomage table. Students will compare planar anatomy to sectional anatomy and recognize anatomical structures in computed tomography and magnetic resonance imaging. Modules include the introduction to sectional anatomy, cranium and facial bones, brain, spine, neck, thorax, abdomen, pelvis, and extremities.
Textbooks required for this Course:	<ul style="list-style-type: none"> Kelley, L.L., Petersen, C.M. Sectional Anatomy for Imaging Professionals, 2013, 3rd ed., Mosby, St. Louis.
Course Duration	56 hours An additional hours of homework per day is expected during this course.



Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	By the end of this course the student will be able to: <ul style="list-style-type: none"> • Correlate gross anatomy with imaging anatomy, including congenital and anatomic variations. • Review anatomy pertinent to diagnostic radiology, with emphasis on the following areas: <ol style="list-style-type: none"> 1. Neuroanatomy, including head and neck (includes face, skull base, cranial nerves).. 2. Body Cavities: mediastinum, abdomen, pelvis, and all constituent organs and spaces. 3. o Extremities: Upper and lower limbs, girdles and neurovascular paths
Course Assessments	Midterm exam: 40% Final Exam: 60% A 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	The surface anatomy of the brain, including the structure of the meninges. • Locate the structures of the brain's ventricular system. • The arterial blood supply to the brain. • The major venous sinuses that carry blood from the brain to the internal jugular veins. • The lobes of the cerebrum. • The location and structure of the cerebellum. • The components and explain the function of the limbic system. • The relationships of the basal ganglia. • Locate and identify the anatomical structures of the brainstem. • The 12 cranial nerves, state the foramina that serve as passageways for each pair of nerves and describe the function of each nerve.
Session 2 (Week 2)	The components of the spine. • The features of the vertebrae. • The differences between cervical, lumbar and thoracic vertebrae. • The major curves found in the vertebral column. • The major ligaments found in the spinal column. • The major muscle groups supporting the spine. • The major components of the spinal cord.
Session 3 (Week 3)	The features of the larynx. • The features of the pharynx. • the relationship of the esophagus and trachea as they descend through
Session 4 (Week 4)	The anatomical surface landmarks of the chest. • The Addison planes. • the skeletal components located in the chest The major muscles of the neck and their functions. • locate the lymph nodes in the neck. • The major arteries and veins of the neck.
Session 5 (Week 5)	The major muscles of the chest, locate their insertion points and describe their function. • The levels of the 3 parts of the sternum with respect to the viscera or thoracic vertebrae. • The structures separating the mediastinum and the pleural cavities. • Label the chambers of the heart on sectional images. • The airway structures within the chest.



Session 6 (Week 6)	The course of blood as it passes through the pulmonary circulation system. • The major arteries and veins located within the chest and upper arm. • The vertebral level of the suprasternal notch, the sternal angle and the xiphisternal junction. • The components that make up the breast. • The anatomical structures of the thorax on applicable cross-sectional imaging studies.
Session 7 (Week 7)	The anatomical surface landmarks and regions of the abdomen. • The Addison planes. • The vertebral structures of the abdomen. • The major muscles of the abdomen, locate their insertion points and describe their function. • identify the lobes of the liver. • The biliary system.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	The location and general function of the stomach, gall bladder, pancreas, spleen, adrenal glands and kidneys. • The significance of the peritoneal and retroperitoneal spaces. • each anatomical structure on computed tomography (CT), magnetic resonance (MR), and ultrasound images in the transverse axial, coronal, sagittal and orthogonal (oblique) cross-sectional imaging planes.
Session 10 (Week 10)	The 3 bones that form the pelvic girdle. • The contents of the lower abdominal cavity. • The function of the pelvic muscles.
Session 11 (Week 11)	The location and function of the pelvic organs. • The flow of urine within the pelvic region. • The location and function of the components of the male reproductive system.
Session 12 (Week 12)	The location and function of the components of the female reproductive system. • The course of arterial and venous blood flow within the pelvis.
Session 13 (Week 13)	The bones that make up the shoulder, elbow, wrist, hip, knee and ankle joints. • The origin, insertion and action of the muscles of the shoulder, elbow, wrist, hip, knee and ankle joints. • the major ligaments and tendons of the shoulder, elbow, wrist, hip, knee and ankle joints
Session 14 (Week 14)	• The anatomical structures displayed on radiographic scans of the shoulder, elbow, wrist, hip, knee and ankle joints. • The modalities used to image upper and lower extremity joints, as well as their advantages and disadvantages.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To



	ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Radiography Equipment II

1	Course name	Radiography Equipment II
2	Course Code	RAD303
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The program educates and prepares the student to perform radiographic examinations, provide quality patient care, and assist the radiologist with diagnostic procedures. This program promotes clinical experience and procedures help provide graduates the skills necessary to obtain entry-level radiography positions in the field.
Textbooks required for this Course:		1.Clark's Handbook for Radiographers – Charles Sloane, Ken Holmes & Craig Anderson, Hodder Educations, UK 2. Diagnostic Radiography – A concise practical Manual – Glenda J. Bryan (4th edn), Churchill Livingstone.
Course Duration		28 hours An additional hours of homework per day is expected during this course.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:		1. Discuss the use of medical devices used in patient care. 2. Apply proper body mechanics and transfer techniques.



	<p>3. Compare radiographic procedures used for patients of diverse populations.</p> <p>4. Perform mathematical calculations to determine specific receptor exposure factors.</p> <p>5. Describe factors which influence and control radiographic qualities of density/brightness, contrast, spatial resolution, dynamic range, and exposure latitude.</p> <p>6. Discuss basic knowledge in radiographic, fluoroscopic, and mobile equipment.</p>
Course Assessments	<p>Midterm1: 25%. Practical: 35%.</p> <p>FinalExam: 40%</p> <p>A 60 %isrequiredtopassin this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Detectors
Session 2 (Week 2)	Evaluation of detector characteristics
Session 3 (Week 3)	Dynamic range
Session 4 (Week 4)	Exposure indicators and deviation index 1. Preprocessing 2. Image Analysis
Session 5 (Week 5)	Exposure indicators and deviation index 3. Rescaling 4. VOI
Session 6 (Week 6)	Exposure indicators and deviation index 5. LUT 6. Noise reduction
Session 7 (Week 7)	Exposure indicators and deviation index 7. Smoothing
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Exposure indicators and deviation index 8. Edge enhancement 9. Equalization c. Post Processing d. Image Acquisition Errors e. Image Display f. Data Management VII. Digital Image Appearance Characteristics a. Bightness b. Noise c. Contrast (Grayscale) d. SNR e. CNR f. Spatial resolution g. Contrast resolution h. Exposure indicator appropriateness
Session 16 (Week 16)	Final Exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<p>The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and</p>



	numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Imaging technology II

1	Course name	Imaging technology II
2	Course Code	RAD204
3	Course type: <i>/general/specialty/optional</i>	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English
9	Date of course approval	2022

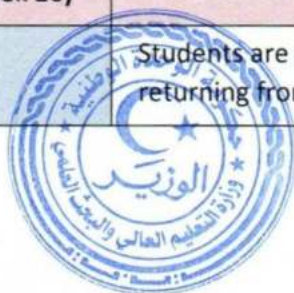
Brief Description:	The program educates and prepares the student to perform radiographic examinations, provide quality patient care, and assist the radiologist with diagnostic procedures. This program promotes clinical experience and procedures help provide graduates the skills necessary to obtain entry-level radiography positions in the field.
Textbooks required for this Course:	Reference Books 1.X-Ray Equipment Maintenance and Repairs Workbook for Radiographers and Radiological Technologists Produced by the WHO Dept. of Essential Health Technology Series. Ian R. McClelland, Publisher-WHO, 2004. 2. Quality Assurance Workbook for Radiographers & Radiologic Technologists, Peter J. Lloyd, Nonserial Publication, WHO.
Course Duration	56hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	Determine appropriate patient interaction and preparation for all Radiographic examinations. Critique Radiographs for applicable anatomy, proper position and correct exposure index.



	Formulate appropriate technical factors for radiographic procedures. Explain the required breathing instructions, patient position, usable surface landmarks and suitable radiation protection during radiographic procedures.
Course Assessments	Midterm1: 25%. Practical: 35%. FinalExam: 40% A 60 %isrequiredtopassin this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Urinary system imaging (IVU, MCU, RGU) Revision of anatomy and physiology, clinical indications and contraindications - patient preparation -contrast media used and dosage - physiological process by which urinary tract is outlined.
Session 2 (Week 2)	Urinary system imaging: Film sequence (projection and timing), normal anatomy on films, additional techniques, radiation protection, care of patient during and after examination. Pathological conditions of urinary system: kidneys, ureter, urinary bladder, urethra.
Session 3 (Week 3)	Gastrointestinal tract imaging (Barium swallow, Barium meal upper GI, Barium meal follow through, Barium enema, small bowel enema, distal colography, defaecography). Revision of anatomy and physiology - clinical indications and contraindications.
Session 4 (Week 4)	Gastrointestinal tract imaging: contrast media used : preparation and dosage - patient preparation – preparation of equipment – control of radiographic and fluoroscopic equipment – film sequence – radiographic projections – radiation protection – patient management – after care of patient – radiographer’s role in the team. Pathological conditions of the GI tract.
Session 5 (Week 5)	Biliary system (PTC, ERCP, T-Tube cholangiography, per-op. cholangiography) Revision of anatomy and physiology – clinical indications and contraindications – contrast media – patient preparation – film series - radiation protection – patient care - normal anatomy. Pathological conditions of biliary system.
Session 6 (Week 6)	Sialography and sinography Anatomy - Clinical indications and contraindications – patient preparation – contrast media and dosage Injection procedure – techniques for radiographic projections - radiographic appearances – radiation protection – patient care. Pathological conditions
Session 7 (Week 7)	Hysterosalpingography (HSG) Revision of anatomy and physiology – clinical indications and contraindications – contrastinjection-258 6. Procedures which are obsolete or rarely used : An overview • Myelography – indications and contraindications – contrast used – patient preparation – injection technique – film sequence – projections – patient



	care • Pelvimetry • Oral cholecystography/intravenous cholangiography • Dacrocystography • Arthrography • Discography
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Conventional – non-contrast - special situations 1.Paediatic Radiography Special needs of patient and radiographer – equipment considerations
Session 11 (Week 11)	(use of dedicated equipment and accessories) Technical considerations - the need to modify “adult” techniques – selection of exposure factors – image quality considerations – radiation protection of the patient - special techniques peculiar to children as follows : – Anorectal malformation – contrast study – intersex disorders - contrast study – esophageal atresia – pre/post op. – intussusception – congenital dislocation of hip – scoliosis – Leg–length measurements – assessment of bone age – non accidental injury – radiography of babies in incubators.
Session 12 (Week 12)	Geriatric radiography Understanding patient profile - possible difficulties during radiography – Technical considerations – need to carry out standardised projections in unconventional position – equipment and accessories – exposure factor considerations in view of variations in skeletal tissue – special care. 3. Trauma/Emergency Radiography Limb fractures - Fracture of thoracic
Session 13 (Week 13)	cage, spine, and skull – GIT obstruction – lung collapse – pleural effusion – pneumo-thorax. Selection of suitable X-Ray equipment – patient position - radiographic projections and sequence for each patient – modification of routine positioning, X-Ray tube and film – radiation protection – patient care.
Session 14 (Week 14)	4. Operation theatre radiography Operative cholangiography – orthopaedic procedures – pre-operative chest. Strict observation of asepsis – preparation of radiographer and equipment/accessories – careful safe use of mobile and fluoroscopic equipment – radiation protection – patient care – protection of theatre staff – rapid availability of radiographic image. 5. Mammography Anatomy and Physiology of female breast – knowledge about the nature of X-Ray beam suitable for breast imaging – equipment suitable for generating such X-radiation –
Session 15 (Week 15)	Image recording devices – accessories for immobilisation and identification, positioning, techniques for various projection ; exposure factors, radiation protection – technique of biopsy procedure – characteristics of benign and malignant lesions – patient care – female attendant.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed.



	Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Imaging Technology III

1	Course name	Imaging Technology III
2	Course Code	RAD400
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	The program educates and prepares the student to perform radiographic examinations, provide quality patient care, and assist the radiologist with diagnostic procedures. This program promote clinical experience and procedures help provide graduates the skills necessary to obtain entry-level radiography positions in the field.
	Textbooks required for this Course:	1.Clark's Handbook for Radiographers – Charles Sloane, Ken Holmes & Craig Anderson, Hodder Educations, UK 2.Diagnostic Radiography – A concise practical Manual – Glenda J. Bryan (4th edn), Churchill Livingstone.
	Course Duration	56 hours An additional hours of homework per day is expected during this course.



Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	By the end of this course the student should be able to: <ul style="list-style-type: none"> • Demonstrate clinical competence. • Properly patient's position for radiographic procedures. • Practice radiation protection. • Provide quality patient care.
Course Assessments	Midterm1: 25%. Practical: 35%. FinalExam: 40% A 60 %isrequiredtopassin this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topicstobecovedinthesession (week): Extremities Radiography – Hand- Finger –MCP- Wrist joint- Forearm -Elbow joint – humerus - shoulder joint.
Session 2 (Week 2)	Assignment1handedout Topicstobecovedinthesession (week) Extremities Radiography: Foot – Toes- Tarsal bones -Ankle joint - Knee joint – patella – tibia- femur – Hip joint – pelvis -sacroiliac joint.
Session 3 (Week 3)	Topics to be covered in the session (week) Spine Radiography -Vertebral column – Atlanta occipital articulation- cervical spine.
Session 4 (Week 4)	Spine Radiography - dorsal spine - lumbar spine – sacrum -vertebral canal- vertebral foramen.
Session 5 (Week 5)	Topicstobecovedinthesession (week) Skull Radiography – general, sella – temporal bone – mastoid – optic foramen – Internal auditory canal.
Session 6 (Week 6)	Topicstobecovedinthesession (week) Skull Radiography –Superior and inferior orbital fissure – base of skull – facial bones – petrous apex – Zygomatic bone, nasal bone, sinuses of skull – mandible
Session 7 (Week 7)	Topicstobecovedinthesession (week) Skull Radiography – Tempro-mandibular joint – Paranasal sinuses Radiography.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Chest Radiography –Basic views (PA & AP) - inspiratory & expiratory filmsspecial chest views & their significance – larynx- trachea- thoracic



Session 10 (Week 10)	inlet -Sternum Ribs – Heart and great vessels – mediastinum -Diaphragm – double exposure technique. Abdomen & Pelvic Radiography – all projection – the acute abdomen investigation. Soft tissue radiography:
Session 11 (Week 11)	Preparations, Instructions, Various techniques, positioning digital mammography, High and low KV Technique – radiography – technique for steep range radiography – intensifying screen. Stereo Radiography of patient for conventional and differential filtration – multiple Duplication –
Session 12 (Week 12)	arrangement of Principle – tube shifting relation of patient – correct making and viewing of stereo radiographs – application. Macro radiography: Principle sizes of focal spot its limitation.
Session 13 (Week 13)	High kv technique: technique & usefulness. Foreign body localization: Preparation – Anatomical localization – various projections –
Session 14 (Week 14)	use of skin markers – Tangential projection – uses – opaque – foreign bodies. Dental radiography-types of equipment's –techniques- indications- films-dental radiography in trauma patients.
Session 15 (Week 15)	Practical involving patients not less than 10 numbers must be prescribed to students. The title and nature of practical may be framed by the respective institution conducting the course
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Radiotherapy Fundamentals

1	Course name	Radiotherapy fundamentals
2	Course Code	RAD305
3	Course type: /general/specialty/optional	specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1st and second year subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Dept.
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<p>Nuclear medicine is a medical specialty involving the application of <u>radioactive</u> substances in the diagnosis and treatment of <u>disease</u>. Nuclear medicine imaging, in a sense, is "<u>radiology</u> done inside out" or "endoradiology" because it records radiation emitting from within the body rather than <u>radiation</u> that is generated by external sources like <u>X-rays</u>.</p> <p>Nuclear medicine uses radioactive material inside the body to see how organs or tissue are functioning (for diagnosis) or to target and destroy damaged or diseased organs or tissue (for treatment).</p>
Textbooks required for this Course:		<ol style="list-style-type: none"> 1. Technical basics of Radiation Therapy Levitt S H, Purdy J A 2. Radiation Oncology –Rationale, technique, & results – Moss. 3. Short text book of radiotherapy; Walter and Miller 4. Principles and practice of Radiation Oncology= Perez & Brady 5. Radiation Oncology –Rationale, technique, & results – Moss. 6. Radiation therapy in the management of cancers; Fletcher, Gilbert
Course Duration		<p>56 hours</p> <p>An additional hours of homework per day is expected during this course.</p>
Delivery		Lecture-based and practical
Course Objectives:		<p>At the completion of this course, the student should be –</p> <ol style="list-style-type: none"> 1. Able to execute all routine radio therapeutic procedures as per prescription and direction of Radiation Oncologist.



	<p>2. Able to operate the radiotherapy equipment used in treatment of cancer patient independently and maintain the equipment under the guidance of Medical Physicist.</p> <p>3. Able to demonstrate and apply adequate knowledge about the safe handling of medical radiation sources, keeping in mind the radiation protection of staff, patients and public.</p> <p>4. Able to demonstrate patient management skills.</p>
Course Assessments	<p>Med-term examination 40%</p> <p>Final examination 60%</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Importance of Immobilization in radiotherapy
Session 2 (Week 2)	Body in homogeneities
Session 3 (Week 3)	Beam modifying and shaping devices
Session 4 (Week 4)	Electron Beam Therapy
Session 5 (Week 5)	External beam therapy practical experience
Session 6 (Week 6)	CT planning MRI planning
Session 7 (Week 7)	Mould room technique
Session 8 (Week 8)	Midterm Exam
<p>Session 9 (Week 9)</p> <p>.....</p> <p>Session 14 (Week 14)</p>	<p>Chemotherapy Chemoradiation concepts of combined modality treatment and the Significance of radiation and chemotherapy in comprehensive management of cancer.</p> <p>Sequelae associated with multimodality therapy and their management</p>
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<p>The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.</p>
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to

	ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Research Methodology

1	Course name	Research Methodology
2	Course Code	RAD302
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course advances the student's understanding of health-related research methods and concepts. The course will explore human research ethics, qualitative research methods, and quantitative research methods. Students will read and critique both qualitative and quantitative published research.
Textbooks required for this Course:	1] Methods in Biostatistics - B.K. Mahajan 3] Foundations of clinical research: Applications to practices – L.G. Portney 4] Research Methodology - Methods & Techniques – C.R. Kothar.
Course Duration	28 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities.
Course Objectives:	On successful completion of the course students will be able to: 1. Describe ethical considerations pertaining to human research, and be able to apply knowledge of research ethics principles and processes to their own research proposal 2. Compare and contrast the similarities and differences between common qualitative, quantitative and mixed methods research methodologies 3. Evaluate the appropriateness of common qualitative, quantitative and mixed methods research methodologies and research design issues, both from a theoretical principles and applied construct 4. Recognise the differences between research questions and a testable hypothesis relevant to their discipline of study, and demonstrate



	<p>understanding of the differences based on critical appraisal of current literature.</p> <p>5. Further develop critical appraisal skills for both qualitative, quantitative and mixed methods research.</p>
Course Assessments	<p>Assignment: 40%.</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week):</p> <ul style="list-style-type: none"> • Meaning of Research, Research Approaches, Significance of Research, Research Process, Criteria of Good Research
Session 2 (Week 2)	<p>Assignment 1 handed out</p> <p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Defining the Research Problem, Selecting the Research Problem, Necessity & Technique in defining the problem. Research Design: Developing a Research Plan.
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Data Collection: Collection of primary data, observation method, interview method
Session 4 (Week 4)	<p>Geriatric Conditions</p> <ul style="list-style-type: none"> • Data Collection: data through questionnaires & schedules, collection of secondary data
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Data Collection: selection of appropriate method of data collection, guidelines for developing questionnaire,
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Data Collection: Survey vs. Experimental method
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Processing & Analysis of data: Data analysis, Statistics
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Processing & Analysis of data: measures of central tendency, Dispersion, Asymmetry, Relationship, and Regression Analysis • Testing of Hypothesis: Parametric tests, Non Parametric tests (Distribution free tests), Design & Analysis of Experiments. • Ethical Concepts in Research • Role of Computer in Research
Session 16 (Week 16)	Final Exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Hospital Training I

1	Course name	Hospital Training I
2	Course Code	RAD308
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The material will be assessed in the test and the examination. Professional skills and their appropriate application Provide Time management, personal organization and teamwork skills, and communication skills will be developed through the presentation projects. Engagement with the needs of society The subject will enhance the capacity of the students to respond to the needs and grapple with ethical concerns that accompany the practice of Medical Imaging (e.g. the balance between diagnostic accuracy and radiation dose to the patient, the staff and population as a whole). Program objectives will aim at making the students being able to: Perform objective self-assessments of their knowledge and skills learn and
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	refine existing skills and acquire new skills. Social Accountability and Responsibility the students will recognize that allied and healthcare professionals need to be advocates within the health care system, to judiciously manage resources and to acknowledge their social accountability. They have a mandate to serve the community, region and the nation and will hence direct all research and service activities towards addressing their priority health concerns.
Textbooks required for this Course:	Textbook of radiographic positioning and related anatomy Bontrager, Kenneth L., author. Lampignano, John P., author. Radiography, Medical -- Positioning , Human anatomy Applied Radiological Anatomy / 2nd Edition EDITORS: Paul Butler, The Royal London Hospital / Adam Mitchell, Charing Cross Hospital, London / Jeremiah C. Healy, Chelsea and Westminster NHS Foundation Trust. Carlton R.R. and Adler A.M. (2013), Radiographic Imaging Concepts and Principles (5th edition), Delmar, ISBN 1473720524, Core text for Fundamentals of Radiographic Practice (PAM1020) and Medical Imaging Applications (PAM2013).
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<ol style="list-style-type: none"> 1. Determine appropriate patient interaction and preparation for all Radiographic examinations and procedures. 2. Demonstrate the proper use of radiographic equipment. 3. Recognize the importance of being a team player. 4. Implement the use of appropriate radiation protection procedures including: collimation, time, distance and shielding. 5. Demonstrates interpersonal and organizational skills when conducting radiographic procedures.
Course Assessments	Midterm1: 25%. Practical: 35%. FinalExam: 40% A 60 % is required to pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	General X-Ray Experiential Training Requirements <ul style="list-style-type: none"> • Appropriateness of positioning and views (e.g. erect abdominal, lateral chest X-ray) • Fluoroscopic studies • Barium studies
Session 2 (Week 2)	General X-Ray Experiential Training Requirements <ul style="list-style-type: none"> • Intravenous Urogram (IVU) • Tubograms • Spinal access
Session 3 (Week 3)	Breast Imaging Experiential Training Requirements <ul style="list-style-type: none"> • Mammogram-standard views, extra views (diagnostic and screening) • Special Views – o Extended CC o Lateral o Cleopatra o Spot Compression o Magnification

Session 4 (Week 4)	Breast Imaging Experiential Training Requirements <ul style="list-style-type: none"> • Biopsy (ultrasound, stereotactic and MRI guidance) • US • MRI (diagnostic and screening)
Session 5 (Week 5)	Interventional Radiology Experiential Training Requirements <ul style="list-style-type: none"> • Ultrasound, Fluoroscopy and Computerised Tomography guided procedures • Vascular access – Arterial and Venous • Drainage – Effusions / Ascites / Abscess / Nephrostomy / Biliary • Biopsy and FNA targeted and general
Session 6 (Week 6)	Interventional Radiology Experiential Training Requirements <ul style="list-style-type: none"> • Musculoskeletal biopsy and intervention • Angioplasty and stent (Understand principles and method and assist) • Embolisation (Understand principles and method and assist)
Session 7 (Week 7)	Obstetrics & Gynecology Experiential Training Requirements <p>Pelvic Scans (transabdominal (TA) and transvaginal (TV)) • Early pregnancy and complication scans • Nuchal Translucency scans • Obstetric Morphology scans</p>
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Obstetric & Gynecology Experiential Training Requirements <ul style="list-style-type: none"> • Obstetric Growth Scans • Relevant MRI (foetal, placental, ovarian and uterine) • Body CT Paediatric & Neonatal Experiential Training Requirements <p>CXR • AXR • Extremity XRs • Abdominal US • Neonatal head US • Hip US • Barium Swallow and meal • TPT placement under fluoroscopy</p> Paediatric & Neonatal Experiential Training Requirements <ul style="list-style-type: none"> • Contrast enema • IVU • MCU • Fluoroscopy for line checks • Nuclear Medicine Experiential Training Requirements <ul style="list-style-type: none"> • Sentinel lymph node mapping • White Cell / Gallium • CT/PET – NSCLC, Colorectal Cancer, Lymphoma, head and neck tumours
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and



	numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Radiology Administration

1	Course name	Radiology Administration
2	Course Code	RAD402
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subject to pass max. 2subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

This is an introductory course to manage (leadership and governance) in a broad sense in healthcare. The course provides an overview of various planning and management issues in healthcare. The following topics are introduced: management and leadership; decision-making and resource allocation; organization and organizational development; quality improvement and change; collaboration and communication; working environment issues and conflict management. All subjects are discussed from an international perspective. Students are encouraged to contribute to the course content richness by relating to healthcare in their own country.

Textbooks required for this Course:

William J. Callaway and Laverne Tolley Gurley, Introduction to Radiologic Technology, latest edition, G. V. Mosby Co., St. Louis, Mo.
Peggy C. Leonard, Quick and Easy Medical Terminology, latest edition, W.B. Saunders Co., Philadelphia, PA.

Course Duration

28 hours

An additional hours of homework per day is expected during this course.

Delivery

Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.



Course Objectives:	<p>Graduates completing the program will accomplish the following outcomes:</p> <ol style="list-style-type: none"> 1. Students will be able to demonstrate practical knowledge of the functional areas of business. 2. Students will be able to integrate current technology in support of business operations. 3. Students will be able to demonstrate highly developed communication skills. 4. Students will be able to evaluate strategic objectives that enhance organizational effectiveness and operational performance. 5. Students will evaluate complex financial and operational data and information for decision making. 6. Students will be able to demonstrate collaboration for effective leadership and decision making.
Course Assessments	<p>Midterm exam 40%</p> <p>Final Exam: 60%</p> <p>A 60 %is required to pass this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Quality Patient Care & Services</p> <p>A. Technical and personal aspects of radiology B. The healthcare service environment C. The patient's perspective D. Benefits of high-quality service</p>
Session 2 (Week 2)	<p>Quality Patient Care & Services</p> <p>E. Attitude and self-worth F. Physical Needs. G. Physiological Needs H. Critical Thinking G. Medical Language I. Suffixes and Combining forms</p>
Session 3 (Week 3)	<p>Evolution of Medicine A. Prehistoric and Primitive Medicine B. Ancient Egypt, Greece, India and China C. Pioneers of Radiography</p>
Session 4 (Week 4)	<p>Evolution of Medicine D. Wilhelm Reontgen E. Discovery of X-rays F. Nuclear Medicine G. Modern Medicine H. Prefixes</p>
Session 5 (Week 5)	<p>Radiography Education and Medicolegal</p> <p>A. The patient as a guest B. Responsibilities in Health Care C. Radiologic Technology Curriculum D. Professional image</p>
Session 6 (Week 6)	<p>Radiography Education and Medicolegal</p> <p>E. Personal obligations F. Medical malpractice G. Diagnostic procedures and interventions H. The body as a whole</p>
Session 7 (Week 7)	<p>Basic Image Production A. X-ray tube and energy conversion B. Film-screen system C. Fluoroscopy D. Specialized Imaging equipment E. Density F. Factors affecting density G. Contrast H. Musculoskeletal system</p>
Session 8 (Week 8)	Midterm Exam



<p>Session 9 (Week 9)</p> <p>Session 14 (Week 14)</p>	<p>The Healthcare Environment</p> <p>A. The economics of the department B. Revenue production C. Quality assurance programs D. Continuing Education for techs E. Respiratory system</p> <p>Standards of Practice for Radiologic Technology A. ARRT history and organization B. Examination procedures C. Certification of Technologists D. Educational requirements E. Circulatory system</p> <p>Professional organizations A. ASRT and other professional organizations B. Benefits of being an ASRT member C. Compliance with continuing education D. Probation for non-compliance of continuing education E. Digestive and Urinary system</p>
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Imaging Technology III

1	Course name	Imaging technology III
2	Course Code	RAD400
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English



9	Date of course approval	2022
Brief Description:	The program educates and prepares the student to perform radiographic examinations, provide quality patient care, and assist the radiologist with diagnostic procedures. This program promote clinical experience and procedures help provide graduates the skills necessary to obtain entry-level radiography positions in the field.	
Textbooks required for this Course:	Reference Books 1.X-Ray Equipment Maintenance and Repairs Workbook for Radiographers and Radiological Technologists Produced by the WHO Dept. of Essential Health Technology Series. Ian R. McClelland, Publisher-WHO, 2004. 2. Quality Assurance Workbook for Radiographers & Radiologic Technologists, Peter J. Lloyd, Nonserial Publication, WHO.	
Course Duration	56 hours An additional hours of homework per day is expected during this course.	
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.	
Course Objectives:	By the end of this course the student will be able to: <ul style="list-style-type: none"> • Determine appropriate patient interaction and preparation for all Radiographic examinations and procedures. • Critique skull images for positioning, anatomy, centering, baselines and technical factors. • Demonstrate appropriate shielding techniques and radiation protection. • Specify various advanced procedures. 	
Course Assessments	Midterm1: 25%. Practical: 35%. FinalExam: 40% A 60 %isrequiredtopassin this course.	
Content Breakdown	Topics Coverage	
Session 1 (Week 1)	Urinary system imaging (IVU, MCU, RGU) Revision of anatomy and physiology, clinical indications and contraindications - patient preparation -contrast media used and dosage - physiological process by which urinary tract is outlined.	
Session 2 (Week 2)	Urinary system imaging: Film sequence (projection and timing), normal anatomy on films, additional techniques, radiation protection, care of patient during and after examination. Pathological conditions of urinary system: kidneys, ureter, urinary bladder, urethra.	
Session 3 (Week 3)	Gastrointestinal tract imaging (Barium swallow, Barium meal upper GI, Barium meal follow through, Barium enema, small bowel enema, distal colography, defaecography). Revision of anatomy and physiology - clinical indications and contraindications.	



Session 4 (Week 4)	Gastrointestinal tract imaging: contrast media used : preparation and dosage - patient preparation – preparation of equipment – control of radiographic and fluoroscopic equipment – film sequence – radiographic projections – radiation protection – patient management – after care of patient – radiographer’s role in the team. Pathological conditions of the GI tract.
Session 5 (Week 5)	Biliary system (PTC, ERCP, T-Tube cholangiography, per-op. cholangiography) Revision of anatomy and physiology – clinical indications and contraindications – contrast media – patient preparation – film series - radiation protection – patient care - normal anatomy. Pathological conditions of biliary system.
Session 6 (Week 6)	Sialography and sinography Anatomy - Clinical indications and contraindications – patient preparation – contrast media and dosage Injection procedure – techniques for radiographic projections - radiographic appearances – radiation protection – patient care. Pathological conditions
Session 7 (Week 7)	Hysterosalpingography (HSG) Revision of anatomy and physiology – clinical indications and contraindications – contrastinjection-274 6. Procedures which are obsolete or rarely used : An overview • Myelography – indications and contraindications – contrast used – patient preparation – injection technique – film sequence – projections – patient care • Pelvimetry • Oral cholecystography/intravenous cholangiography • Dacrocystography • Arthrography • Discography
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Conventional – non-contrast - special situations 1.Paediatric Radiography Special needs of patient and radiographer – equipment considerations (use of dedicated equipment and accessories) Technical considerations -
Session 10 (Week 10)	the need to modify “adult” techniques – selection of exposure factors – image quality considerations – radiation protection of the patient - special techniques peculiar to children as follows : – Anorectal
Session 11 (Week 11)	malformation – contrast study – intersex disorders - contrast study – esophageal atresia – pre/post op. – intussusception – congenital dislocation of hip – scoliosis – Leg-length measurements – assessment of bone age – non accidental injury – radiography of babies in incubators 2.Geriatric radiography Understanding patient profile - possible
Session 12 (Week 12)	difficulties during radiography – Technical considerations – need to carry out standardised projections in unconventional position – equipment and accessories – exposure factor considerations in view of variations in skeletal tissue – special care. 3. Trauma/Emergency Radiography Limb



Session 13 (Week 13)	fractures - Fracture of thoracic cage, spine, and skull – GIT obstruction – lung collapse – pleural effusion – pneumo-thorax. Selection of suitable X-Ray equipment – patient position - radiographic projections and sequence for each patient – modification of routine positioning, X-Ray tube and film – radiation protection – patient care. 4. Operation theatre radiography Operative cholangiography – orthopaedic procedures – pre-operative chest. Strict observation of asepsis – preparation of radiographer and equipment/accessories –
Session 14 (Week 14)	careful safe use of mobile and fluoroscopic equipment – radiation protection – patient care – protection of theatre staff – rapid availability of radiographic image. 5. Mammography Anatomy and Physiology of female breast – knowledge about the nature of X-Ray beam suitable for breast imaging –
Session 15 (Week 15)	equipment suitable for generating such X-radiation – image recording devices – accessories for immobilisation and identification, positioning, techniques for various projection ; exposure factors, radiation protection – technique of biopsy procedure – characteristics of benign and malignant lesions – patient care – female attendant.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Computed Tomography

1	Course name	Computed Tomography
2	Course Code	RAD405



3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Computerized tomography (CT) scan combines a series of X-ray images taken from different angles around your body and uses computer processing to create cross-sectional images (slices) of the bones, blood vessels and soft tissues inside your body. CT scan images provide more-detailed information than plain X-rays do
Textbooks required for this Course:		1] computed tomography for technologist – a comprehensive text 2] Human sectional anatomy atlas of body sections, CT and MRI images 3] Step by Step CT; Step by Step MRI and MRI made Easy for beginners – Govind B.
Course Duration		56 hours An additional hours of homework per day is expected during this course.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:		Describe the various generations of Computed Tomography Scanners. Define the CT imaging system components and their functions. Discuss image quality as it relates to spatial resolution, contrast resolution, noise, linearity, and uniformity. Define contrast media's role in CT imaging and how it may affect patient care. Explain the application of pharmacology as it pertains to CT. Identify the major organs as seen in cross sectional anatomy/ pathology of the head, neck, chest, abdomen and pelvis.
Course Assessments		Midterm Exam: 25% Partical: 35% Final Exam: 40% A 60 % is required to pass in this course
Content Breakdown		Topics Coverage
Session 1 (Week 1)		History- generations of scanners-CT technology
Session 2 (Week 2)		helical/spiral & multi slice C.T. Ultra fast scanners-system components



Session 3 (Week 3)	- performance parameters - image quality and methods of image reconstruction
Session 4 (Week 4)	radiation dose measurements and technical aspects of Q.A
Session 5 (Week 5)	-calibration and image acquisition
Session 6 (Week 6)	CT of head and neck – thorax – abdomen
Session 7 (Week 7)	Pelvis – musculo skeletal system – spine – PNS. Anatomy – clinical indications and contraindications
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	– patient preparation – technique – contrast media-types, dose, injection technique; timing, sequence - image display – patient care – utilization of available techniques & image processing facilities to guide the clinician-CT anatomy and pathology of different organ systems
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor’s note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Magnetic Resonance Imaging

1	Course name	Magnetic Resonance Imaging
2	Course Code	RAD404
3	Course type: /general/specialty/optional	Specialty



4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	MRI is performed using a specialized scanner, a patient table, systems that generate radio waves and magnetic fields, and a computer workstation. The scanner, which is usually shaped like a large rectangle with a hole in the center, contains the systems that generate the magnetic field. A motorized and computer-controlled patient table moves into the scanner's center hole during the scan. A technologist operates the MRI scanner from an adjacent control room that contains a computer system and an intercom system for communicating with the patient during the scan.
Textbooks required for this Course:	Step by Step MRI and MRI made Easy for beginners – Govind B. Chavhan – Jaypee brothers and Medical Publishers (p) Ltd, New Delhi CT & MRI protocol – Satish K. Bhargava, CBS publishers.
Course Duration	56 hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	By the end of this course the student should be able to: <ul style="list-style-type: none"> • Apply knowledge of anatomy, physiology, positioning, and MRI sequence parameters to accurately demonstrate anatomical structures. • Determine imaging parameters to achieve optimum imaging. • Evaluate images for appropriate positioning, coil selection, and image quality. • Apply the principles of ferromagnetic safety and contrast application for the protection of the patient, technologist, and others. • Recognize emergency patient conditions and initiate life-saving first aid and basic life-support procedures. • Evaluate the performance of MRI systems, know the safe limits of equipment operation, and report malfunctions to the proper authority.



Course Assessments	Midterm Exam: 25% Partical:35% FinalExam: 40% A 60 %isrequiredtopassin this course
Content Breakdown	Topics Coverage
Session 1 (Week 1)	History - basic physical principle - Physical principles
Session 2 (Week 2)	-NMR signals– instrumentation
Session 3 (Week 3)	hard ware-MR system components- magnet system- Magnetic shielding- RF shielding
Session 4 (Week 4)	shielding- bioeffects of MRI- site selection and safety -reconstruction system
Session 5 (Week 5)	- different coils used -NMR signals advantage -imaging methods
Session 6 (Week 6)	– pulse imaging sequences - spectroscopy parameters
Session 7 (Week 7)	-calibration and image acquisition - reconstructions
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	3D images- - image contrast – factors affecting image quality - artifacts - difference between CT and MRI images- host computer -viewing archiving- hard copy - image formation and storage device.
Session 16 (W16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor’s note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Radiotherapy Planning

1	Course name	Radiotherapy Planning
2	Course Code	RAD401
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subject to pass max. 2subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		To enable students to apply their understanding of computers, radiation therapy equipment, radiation therapy physics and imaging to the planning and delivery of radiation therapy.
Textbooks required for this Course:		Principles and Practice of Radiation Therapy 5th Edition Washington/Leaver ISBN-13./ Portal Design in Radiation Therapy - 2nd Edition Dasher ISBN: Rad Science for Technologists: Physics, Biology, Protection 11th edition Bushor Radiation Therapy Physics 3rd editionHendee ISBN
Course Duration		28 hours An additional hours of homework per day is expected during this course.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities.
Course Objectives:		By the end of this course the student should be able to: 1. demonstrate knowledge and application of calculations used in radiation therapy; 2. demonstrate knowledge, application of principles and concepts of computer planning for critiquing standard techniques; 3. demonstrate an understanding of imaging and anatomy, relevant to computer planning; 4. Discuss the effects of radiation on biological systems.
Course Assessments		Midterm exam 40% Final Exam: 60% A 60 % is required to pass this course.
Content Breakdown		Topical Coverage
Session 1 (Week 1)		Historical background



Session 2 (Week 2)	Radiation sources - natural sources - modified natural sources - artificial sources
Session 3 (Week 3)	The biological effect of ionizing radiation - the direct and indirect effect on DNA such as physical and biological factors affecting the sensitivity of tissues to radiation, acute effects of radiation, delayed effects of radiation, estimation of radiation hazard, absorbed radiation dose.
Session 4 (Week 4)	Maximum limits, radiation doses for workers in the field of radiation to the general public, equivalent to the effective absorbed dose.
Session 5 (Week 5)	External radiation protection methods - Using a distance from the barriers to protect the general radiation particles - Respiration and regular monitoring - Dosimetry for workers in the radiation field.
Session 6 (Week 6)	Diagnostic and therapeutic radiology room design, design of barriers in nuclear medicine department, thickness of major and secondary barriers.
Session 7 (Week 7)	Radiation dosimetry devices, general characteristics, mid-ray meter
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Prevention of internal pollution by radiation, pollution methods, and half-effect, maximum limits of internal pollution, dealing with radiation accidents in hospitals. Scientific methods of radiation protection for patients and workers in the departments of radiology, radiotherapy - nuclear medicine.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Emergency Imaging Technology

1	Course name	Emergency Imaging Technology
2	Course Code	RAD403
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Trauma care & Emergency Radiography: procedures in the event of an accident Special positioning procedures & projections - modification of techniques needed for seriously injured patients. Radiographic factors - patient care & responsibilities-Search of profession confidence-maintenance decorum of the job responsibility - the importance of records maintenance. Fluoroscopy and its application in emergency radiology - Medicolegal aspects of the radiographers work. Common medical emergencies-helping in first aids & zero hour care / know to help in critical hour care -Trauma patients handling – trauma ward bed X-rays – mass casualty managements-selection of study / procedures & radiographic views. Knowing the emergency care places in the hospital & preplanning checking & readiness of mobile units in functioning status -screening of the high risk patients in various procedure-supportive facilities to encounter emergency practical training.
Textbooks required for this Course:		Reference Books: 1. Notes on Radiological Emergencies – Ansell and Churchill 2. Care of patient in diagnostic Radiography – Chesney & Chesney. 3. First Aid – Haugher and Gardner. 4. Practical Nursing and First Aid – Ross and Wilson.
Course Duration		56 hours An additional hours of homework per day is expected during this course.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:		By the end of this course the student should be able to: Apply knowledge and skills performing radiographic procedures at a new clinical site.




	<p>Determine appropriate patient interaction and preparation for all Radiographic examinations and procedures.</p> <p>Perform routine pediatric (ages 6 and under) examinations.</p> <p>Perform Operating Room procedures maintaining the principles of sterile technique, applying knowledge of C-arm operation and manipulation.</p> <p>Demonstrate interpersonal and organizational skills when conducting radiographic procedures in emergency cases.</p>
Course Assessments	<p>Midterm Exam: 25%</p> <p>Partical:35%</p> <p>FinalExam: 40%</p> <p>A 60 %isrequiredtopassin this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Extremities Radiography – Hand- Finger - Wrist joint- Forearm -Elbow joint
Session 2 (Week 2)	Humerus - shoulder joint. Foot – Toes- Tarsal bones -Ankle joint - Knee joint
Session 3 (Week 3)	Patella – tibia- femur – Hip joint – pelvis -sacroiliac joint.
Session 4 (Week 4)	Spine Radiography -Vertebral column – Atlanta occipital articulation- cervical spine- dorsal spine
Session 5 (Week 5)	lumbar spine – sacrum -vertebral canal- vertebral foramen
Session 6 (Week 6)	Skull Radiography – general, sella – temporal bone – mastoid – optic foramen – Internal auditory canal
Session 7 (Week 7)	Superior and inferior orbital fissure – base of skull – facial bones – petrous apex
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	<p>Zygomatic bone, nasal bone, sinuses of skull – mandible –</p> <p>Temporo-mandibular joint – Paranasal sinuses Radiography.</p> <p>Chest Radiography –Basic views (PA & AP) - inspiratory & expiratory filmsspecial</p> <p>chest views & their significance – larynx- trachea- thoracic inlet -Sternum -</p> <p>Ribs – Heart and great vessels – mediastinum -Diaphram – double exposure technique.</p>
Session 16 (Week 16)	Final Exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Hospital Training II

1	Course name	Hospital Training II
2	Course Code	RAD406
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description: 	<p>The material will be assessed in the test and the examination. Professional skills and their appropriate application Provide Time management, personal organization and teamwork skills, and communication skills will be developed through the presentation projects. Engagement with the needs of society The subject will enhance the capacity of the students to respond to the needs and grapple with ethical concerns that accompany the practice of Medical Imaging (e.g. the balance between diagnostic accuracy and radiation dose to the patient, the staff and population as a whole). Program objectives will aim at making the students being able to: Perform objective self-assessments of their knowledge and skills learn and refine existing skills and acquire new skills. Social Accountability and</p>
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	Responsibility the students will recognize that allied and healthcare professionals need to be advocates within the health care system, to judiciously manage resources and to acknowledge their social accountability. They have a mandate to serve the community, region and the nation and will hence direct all research and service activities towards addressing their priority health concerns.
Textbooks required for this Course:	Textbook of radiographic positioning and related anatomy Bontrager, Kenneth L., author. Lampignano, John P., author. Radiography, Medical -- Positioning , Human anatomy Applied Radiological Anatomy / 2nd Edition EDITORS: Paul Butler, The Royal London Hospital / Adam Mitchell, Charing Cross Hospital, London / Jeremiah C. Healy, Chelsea and Westminster NHS Foundation Trust. Carlton R.R. and Adler A.M. (2013), Radiographic Imaging Concepts and Principles (5 th edition), Delmar, ISBN 1473720524, Core text for Fundamentals of Radiographic Practice (PAM1020) and Medical Imaging Applications (PAM2013).
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	Determine appropriate patient interaction and preparation for all Radiographic examinations and procedures. Operate radiographic equipment appropriately. Demonstrate appropriate interpersonal relations, organizational skills and professional ethics when interacting with staff and patients. Employ the use of appropriate radiation protection procedures including: collimation, time, distance and shielding. Demonstrate interpersonal and organizational skills when conducting radiographic procedures. Demonstrate assertiveness in seeking out diagnostic exams for increased levels of proficiency. Determine appropriate patient interaction and preparation for all Radiographic examinations and procedures. Critique skull images for positioning, anatomy, centering, baselines and technical factors. Demonstrate appropriate shielding techniques and radiation protection. Specify various advanced procedures.
Course Assessments	Midterm1: 25%. Practical: 35%. FinalExam: 40% A 60 % is required to pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Magnetic Resonance Imaging Experiential Training Requirements



	Brain • Spine • Head and Neck • Musculoskeletal
Session 2 (Week 2)	Magnetic Resonance Imaging Experiential Training Requirements • Body • Cardiovascular • Breast
Session 3 (Week 3)	Nuclear Medicine Experiential Training Requirements • Bone • Thyroid •
Session 4 (Week 4)	Nuclear Medicine Experiential Training Requirements • GI Bleed scan • Renal: DTPA / MAG 3 • Renal: DMSA • Liver colloid
Session 5 (Week 5)	Nuclear Medicine Experiential Training Requirements • Liver Haemangioma • MIBG / OCTREOTIDE
Session 6 (Week 6)	Nuclear Medicine Experiential Training Requirements • Cardiac (including performing exercise and pharmacological stress tests under supervision – also expect correlation of at least 2 cases with an anatomical modality such as CTCA or Catheter Angiography)
Session 7 (Week 7)	MRI Training
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Nuclear Medicine Experiential Training Requirements Paediatric Nuclear Medicine, ESP Renal, (obstruction, infection, reflux) bone, (fracture, non-accidental injury, infection) Liver,-biliary atresia versus neonatal hepatitis Therapy-Iodine 131 for thyrotoxicosis or thyroid CT Coronary Angiography CTCA CT Colonography
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing



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Graduation Project

1	Course name	Graduation project
2	Course Code	RAD407
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Radiology Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Research is what allows doctors to decide how to best treat patients. It is what makes the development of new medicines, new procedures and new tools possible. Without clinical research, we would not be able to decide if new treatments are better than our current treatments. It is how doctors find the most effective methods of care for our patients. Student must be pass in order to investigate radiology related research.
Textbooks and References:	Research Methods in Radiology: A Practical Guide 2018.
Course Duration	28 H
Course Objectives:	By the end of this course the student should be able to: 1-Define the Principles of research planning and design 2- Describe principles of basics of experimental design and analysis. 3- Identify suitable research topics. 4- Undertake independent research. 5- Be able to do Critical review and analysis of related literature. 6- Design research study 7- Perform method validation and presentation of research report. 8- Write the research proposal and theses. 9-Demonstrate appropriate communication skills. 10- Present clearly and effectively scientific topic in a tutorial or a staff meeting. 11- Work separately or in a team to research and prepare a scientific topic.
Course Assessments	PPT Slides -End of semester after presentation
Content Breakdown	Topical Coverage
Session 1 (Week 1) Session 14 (Week 14)	Development of a research protocol Fieldwork and data analysis - The research project course involves the generation of new scientific information and a review and understanding of the scientific literature.



	<ul style="list-style-type: none"> - The research may be conducted in a laboratory, hospital, community laboratories, different company, etc., depending on the project and the supervisor. - Students are divided into groups and each group is working together. - Students are expected to work approximately 56 hours. This will include working in the laboratory, etc., reading or searching literature, and writing up the research project. - Fields of study available may include: <ul style="list-style-type: none"> o Biomedical genetics o Immunogenic o Cancer genetics o Biochemistry o Genetics Diagnosis o Embryology
Session 15 (Week 15) Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



5- قسم العلاج الطبيعي



Physiotherapy for plastic surgery & burns

1	Course name	Physiotherapy for plastic surgery & burns
2	Course Code	PT301
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st 2 subjects to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Describe pre-operative evaluation, surgical indications & various surgical approaches & post operative management in various abdominal/ thoracic/peripheral vascular conditions/ENT conditions / Opthal conditions/ Plastic Surgery conditions
Textbooks required for this Course:	Standard surgical techniques- Shriram Bhatt Manipal Manual Surgery- K. Rajgopal Shenoy Short Practice of surgery – Bailey & Love
Course Duration	42hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ol style="list-style-type: none"> 1. Describe the effects of surgical trauma & Anaesthesia 2. 2] Classify, clinically evaluate & describe the surgical management in brief in a] Wounds & Ulcers b] Burns c] Head injuries 3. 3] Describe pre-operative evaluation, surgical indications & various surgical approaches & post operative management in various abdominal/ thoracic/peripheral vascular conditions/ENT conditions / Opthal conditions/ Plastic Surgery conditions 4. 4] Recall the surgical approaches in the form of line diagram & will be able to describe the components of soft tissues cut to reach the target tissue & the possible Post operative complications 59 5. 5] Be able to read & interpret findings of the X ray-chest.
Course Assessments	Assignment1: 15%. Assignment2:15% Partical:20% FinalExam: 40%DailyAssessments:10% 60 %to pass.
Content Breakdown	Topics Coverage



Session 1 (Week 1)	1] Effect of Anesthesia & surgical trauma: Hemorrhage (Clinical Manifestations and types) Shock (Neurogenic , septic etc.) Water & Electrolyte imbalance : Basic physiology, clinical manifestations
Session 2 (Week 2)	2] Inflammation-acute & chronic-signs, symptoms, complications & management 3] Wounds/ ulcers-classification, healing process, management
Session 3 (Week 3)	4] Common abdominal surgeries for G.I.tract, Genito-urinary system Scar during surgical approach through abdominal wall. Scar management in brief - Level 2 : Surgical Procedure 5] Modified Radical mastectomy-complications & management 6] Amputation-types, sites, complications & management 7] Burns-causes, classification complications & management
Session 4 (Week 4)	2] Neuro Surgery 1] Head Injury – types, clinical features, management 2] Intra cranial & spinal tumors - Types, Locations, Clinical Picture - Level 2 : Surgical Management 3] Surgeries of Head & neck in neurosurgical conditions & post operative care
Session 5 (Week 5)	4] Congenital & childhood disorders of nervous system- Hydrocephalus, spina bifida etc. Clinical features, surgical management & post operative care 3] Cardio vascular -thoracic surgery 1] Surgical approach 2] Post operative complications & management- in Thoracotomy, Thoracoplasty, Lobectomy, Pneumonectomy, Decortication, CABG, Valvular Surgery, Congenital Heart Disease Surgeries and Surgery for Peripheral Vascular Diseas
Session 6 (Week 6)	4) E.N. T. Surgery 61 1] Upper respiratory tract surgery & post operative care- Level 2 2] Tracheostomy – indications, surgical approach & management 3] Surgery for cancer – indications & post operative care- Level 2 4] Surgical procedures in VII th cranial nerve palsy 5) Ophthalmic Surgery
Session 7 (Week 7)	1] Surgeries for III, IV & VI cranial nerve palsy- Level 2 6) Plastic Surgery 1] Skin grafts & flaps-Types, indications with special emphasis to burns, wounds, ulcers
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	2] Tendon transfers, with special emphasis to hand, foot & facial paralysis 3] Keloid & Hypertrophied scar management 4] Reconstructive surgery of peripheral nerves 5] Surgeries for PVD (arterial & lymphatic dysfunction)
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Physiotherapy for Orthopedic

1	Course name	Physiotherapy for Orthopedic
2	Course Code	PT304
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	<p>The study focused on the physical therapy and treatment of the musculoskeletal system its means muscles and bones of the body, includes injury on the treatment related to sprains, strains, post fracture, post-surgery, and repetitive of the patient.</p> <p>The master study deals with both surgery and non-surgery to treat and care sports persons, degenerative disease, infection and tumors and congenital disorder and all manner of bones and muscles in the human body. The course prepares candidates with knowledge, skills and abilities to provide relief the pain of orthopedics or musculoskeletal problems like chronic joint pain, joint stiffness, poor mobility, arthritis and back or neck pain with the help to assist the medical service in dealing with different aspects of treatment, rehabilitation and prevention of disorder utilizing exercise and electrotherapy procedures.</p>
Textbooks required for this Course:	<ol style="list-style-type: none"> 1. Outline of Fractures 8th edition - Adams 2. Outline of Orthopaedics 8th edition - Adams 3. System of Ortho - Apley 4. Essentials of Orthopaedics for Physiotherapists- John Ebnezar 5. Essential Orthopaedics – Maheshwari 6. Mercer’s Orthopedic Surgery- Duthie, R.B. &Bently G
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<p>-At the end of the course, the candidate will :</p> <ol style="list-style-type: none"> 1] Be able to discuss the Pathophysiology, clinical manifestations & conservative /Surgical management of various traumatic & cold cases of the Musculoskeletal Conditions 2] Gain the skill of clinical examination & interpretation of the preoperative cold cases & all the post- operative cases 3] Will



	<p>be able to read & interpret a]- salient features of the X-ray of the spine & Extremities b]- pathological/ biochemical studies pertaining to Orthopedic condition</p> <p>4] Will be able to correlate the radiological findings with the clinical findings</p>
Course Assessments	<p>Assignment1: 30%. Assignment2:10% FinalExam: 60% 60 %isrequiredforapassin this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Post trauma Pathology, clinical manifestations, healing process in bone & intra articular & extra articular soft tissues& introduction to implants & prosthesis - Level 1: stages of healing process, assessment, conservative & surgical management, complications & their management - Level 2: recent advances in surgical management,</p>
Session 2 (Week 2)	<p>Fractures & dislocations of upper extremity & lower extremity & spine. i) Classification ii) Pathology iii) Conservative treatment iv) Surgical intervention - a) Surgical approach b) soft tissue section / repair c) internal / external fixation / arthroplasty d) post-operative complications e) post-operative management & management of complications - Level 2: diagnostic methods - Level 3: surgical advances</p>
Session 3 (Week 3)	<p>Fractures & dislocations of spine, fractures of thoracic cage, shoulde girdle & pelvisi) Classification ii) pathology iii) Conservative treatment iv) Surgical intervention - a) Surgical approach b) Soft tissue section / repair c) Internal / external fixation / arthroplasty d) Post-operative complications e) Post-operative management & management of complications - Level 2: diagnostic methods - Level 3: surgical advances</p>
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Management of Metabolic disorders a) Osteoporosis b) Osteomalacia, rickets Classification, type, assessment, management, complications • Level 2 : diagnostic methods (MRI, CT Scan, USG)
Session 5 (Week 5)	<ul style="list-style-type: none"> • Brachial Plexus / Lumbo Sacral Plexus & Peripheral nerve injuries Nerve course, mechanism of injury, types of nerve injury, diagnostic methods & assessment, conservative & surgical management - Level 2 : diagnostic methods (MRI, CT Scan, USG)
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <p>Deformities a)spine – scoliosis / kyphosis b) Deformities of extremities like Varus / Valgus, Torsion, Deformities of hands & feet aetiopathology, assessment, investigations ,conservative & surgical management.</p>
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Common Congenital Malformation like CTEV, Developmental dysplasia of hip, torticollis etc. pathogenesis, clinical manifestation, assessment, investigations ,conservative& surgical management
Session 8 (Week 8)	Midterm Exam



Session 9 (Week 9)	Vascular Disorders like Avascular Necrosis, Perthe's Disease, and Compartmental Syndrome aetiopathogenesis, clinical manifestation, assessment, investigations ,conservative & surgical management.
Session 10 (Week 10)	Soft tissue lesions Pathology, clinical manifestation, investigation, conservative & surgical management, complications & their management a) Sport injuries b) Overuse injuries.
Session 11 (Week 11)	Arthritis of spine & extremity a) degenerative-OA b) infectious-septic, TB C) inflammatory-RA, Ankylosing spondylitis Pathology, clinical manifestation, risk factor, investigation, conservative & surgical management, complications & their management - Level 2: other types of arthritis like gout, haemophilic, neuropathic etc.
Session 12 (Week 12)	Reconstructive surgery a) Reconstructive surgery for bone lengthening b) Reconstructive surgery in Polio & Cerebral Palsy c) Soft tissue lesions of Shoulder, Knee & Ankle. Osteomyelitis Pathology, clinical manifestation, investigation, conservative & surgical management, complications & their management.
Session 13 (Week 13)	Tumors of bone & management Classification Pathology, clinical manifestation, risk factor, investigation, conservative & surgical management, complications & their management. Traumatic Amputation & management Level of amputation, assessment, management. Hand injury & management Common fractures & dislocations of hand, soft tissue involvement related to tendon injury, crush injury of hand Classification Pathology, clinical manifestation, risk factor, investigation, conservative & surgical management, complications & their management.
Session 14 (Week 14)	X-rays of extremities & spine - Level 2: CT/MRI/USG findings. Relevant biochemical investigations - Level 2 Bed side clinic based on: a) acute soft tissue lesion [including nerve injury] b) Degenerative arthritis of extremity joint c) Degenerative arthritis of spine d) Acute P.I. e) Chronic backaches f) Post-operative case of fractures of extremities g) Traumatic paraplegia /quadriplegia
Session 15 (Week 15)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.



Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Pediatric Pathologies, Surgery & Physiotherapy managements

1	Course name	Pediatric Pathologies, Surgery & Physiotherapy managements
2	Course Code	PT401
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course will provide students with a fundamental understanding of the broad range of activity and skill disorders including Anatomical and physiological issues, developmental delays, orthopaedic/musculoskeletal anomalies, respiratory conditions, neuromuscular and neurological disorders in varying domain working in preposition of their purview of enactment.
Textbooks required for this Course:	Stuart Porter, et al. Tidy's Physiotherapy, Chapter 8 "Paediatric Physiotherapy". 2003 Edition 13. Paediatric Physiotherapy. In: Schmidt R., Willis W. 2007 (eds) Encyclopaedia of Pain. Springer, Berlin, Heidelberg.
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	Upgrade the student's ability to: <ul style="list-style-type: none"> • Improves posture and reflexes of child • Make movement easier by training normal pattern of movements • Improves gross motor skills. Improves functional mobility • Improves muscle imbalance and muscle strength • Improves balance and coordination • Improves range of motion. Improves muscle tone • Improved gait/gait training
Course Assessments	Assignment1: 30%. Assignment2:10%



	Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week): • Normal intra-uterine development of fetus
Session 2 (Week 2)	Assignment 1 handed out Topics to be covered in the session (week) • Normal development & growth: Normal & abnormal reflexes in neonate & child
Session 3 (Week 3)	Topics to be covered in the session (week) • Immunization, Handling of the child, Significance of breast-feeding • Chronic pain • Differentiation of pain
Session 4 (Week 4)	Geriatric Conditions • Common causes for Developmental disorders like Sepsis, Prematurity, Asphyxia & • Hyperbilirubinemia. Rheumatic & Congenital heart disease CLINICAL- 1] Examination of the nervous system
Session 5 (Week 5)	Topics to be covered in the session (week) • Brain damage-Cerebral Palsy-types & Medical Management
Session 6 (Week 6)	Topics to be covered in the session (week) • Spinal Cord Disorders like Poliomyelitis, Spinal Dysraphism, Spina Bifida, Meningocele, Myelomeningocele
Session 7 (Week 7)	Topics to be covered in the session (week) • Common infections of C.N.S. & peripheral nervous system • Malnutrition related conditions
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topics to be covered in the session (week) • Epilepsy • Mental Retardation. Genetically transmitted neuro-muscular conditions • CLINICAL-
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Pain Management

1	Course name	Pain Management
2	Course Code	PT400
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the nature of pain and to give physicians the competence in recognizing and understanding the unique needs of pain patients
Textbooks required for this Course:		Butler, D.S, Moseley, L. (2003). Explain Pain. Adelaide. Noigroup Publications. Merskey H, Bogduk N. Classification of chronic pain. 2nd ed. Seattle: IASP Press; 1994. Many other learning materials.
Course Duration		56 hours An additional hours of homework per day is expected during this course.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Manage patient's pain and their ability to justify. • Demonstrate an ability to integrate the patient assessment into an appropriate management plan using the concepts and strategies of clinical reasoning • Understand the principles of an effective therapeutic /professional relationship to reduce pain. • Promote optimal function and reduce disability through the use of active and where appropriate, passive pain management approaches • Use a patient-centred perspective to formulate collaborative intervention strategies consistent with a physical therapy perspective. • Proof of work experience
Course Assessments		Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.



Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week): • Introduction to pain • Types of pain
Session 2 (Week 2)	Assignment 1 handed out Topics to be covered in the session (week) • Pain perceptions • Risk factors Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) • Pain Mechanisms • Sorts of pain mechanism Assignment 1 due
Session 4 (Week 4)	Geriatric Conditions <ul style="list-style-type: none"> • Acute pain • Chronic pain • Differentiation of pain
Session 5 (Week 5)	Topics to be covered in the session (week) • Causes of Acute & Chronic pain • Related conditions of acute and chronic pain
Session 6 (Week 6)	Topics to be covered in the session (week) • Pain receptors inside body & brain • Pain receptors types
Session 7 (Week 7)	Topics to be covered in the session (week) A. Pain assessment, measures & Scales. Pain analogue scale. B. Case scenarios C. Self report measures.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topics to be covered in the session (week) • Biopsychosocial approach. Cognitive Behavioral Therapy • Pain flags. Therapeutic Neuroscience Education
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Pharmacology

1	Course name	Pharmacology
2	Course Code	PT201
3	Course type: /general/specialty/optional	optional
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy D.
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course will provide students with a fundamental understanding of the Pharmacology effects of commonly used drugs by patients referred for Physiotherapy. list their adverse reaction, precautions to be taken and contra – indication, formulation and route of administration.
Textbooks required for this Course:	Pharmacology by Gaddum. Pharmacology & Pharmacotherapeutics Revised 19th Edition 2005 by Dr.S.D.Satoskar & Dr.S.D. Bhandarkar . Essential of Medical Pharmacology 5th Edition 2003 By Dr.K.D.Tripathi
Course Duration	28 hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Describe Pharmacology effects of commonly used drugs by patients referred for Physiotherapy • Identify whether the pharmacological effects of the drug interferes with Therapeutic response of Physiotherapy & vice a versa • Indicate the use of analgesics & anti-inflammatory agents with the movement disorders with consideration of cost efficiency & safety for individuals need. • Get the awareness of other essential & commonly used drug by patients –The basis for their use & common as well as serious adverse reaction.
Course Assessments	Assignment 1: 30%. Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage



Session 1 (Week 1)	Topics to be covered in the session (week): • Drug Pharmacokinetics, Pharmacology adverse reaction, Factors modifying drug effects, sources & routes of administration.
Session 2 (Week 2)	Assignment 1 handed out Topics to be covered in the session (week) • Drug acting on CNS : · Introduction, Alcohols, · Sedatives & Hypnotics - Anti-convulsants
Session 3 (Week 3)	Topics to be covered in the session (week) • Immunization, Handling of the child, Significance of breast-feeding Drug acting on CNS : · Analgesics & Antipyretics · Gout & R.A.
Session 4 (Week 4)	Drug acting on CNS : - Psycho Therapeutics · General anaesthetic, Local anaesthetic · Drug therapy in PARKINSONISM.
Session 5 (Week 5)	Topics to be covered in the session (week) • Drugs acting on Autonomic nervous system i) Cholinergic Agonist ii) Cholinergic Antagonist
Session 6 (Week 6)	Topics to be covered in the session (week) • Drugs acting on Autonomic nervous system iii) Adrenergic Agonist iv) Adrenergic Antagonist
Session 7 (Week 7)	Topics to be covered in the session (week) Skeletal muscle relaxants
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) • Drugs acting on CVS : i) Hypertension ii) Diuretics iii) CCF iv) Angina
Session 10 (Week 10)	Topics to be covered in the session (week) • Drugs acting on CVS : i) Hypertension ii) Diuretics iii) CCF iv) Angina
Session 11 (Week 11)	Drugs acting on CVS : - Level 2: v) Antiarrhythmia - Level 2: vi) Shock - Level 2: vii) Drug satisfying Homeostasis
Session 12 (Week 12)	Drug acting on Respiratory system 1) cough & Bronchial asthma
Session 13 (Week 13)	Chemotherapy



	i) General principles ,Sulphonamides& Cotrimoxazole ii) Broad Spectrum Antibiotics, Aminoglycosides, Macrolides.
Session 14 (Week 14)	iii) Beta lactams, Quinolones iv) Anti Tuberculosis
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Pathology

1	Course name	Pathology
2	Course Code	PT202
3	Course type: /general/specialty/optional	Optional
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy D.
8	Instruction Language	English
9	Date of course approval	2022

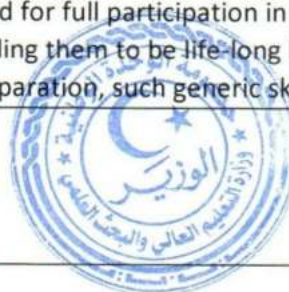
Brief Description:	The broad goal of the teaching of undergraduate students in pathology aims at providing comprehensive knowledge of the morbid anatomy, Histopathology, etiology and pathogenesis with the complications of various diseases to provide a basis for understanding the clinical correlation and the skills to practice as a qualified Physiotherapist.
Textbooks required for this Course:	Text book of Pathology-by Harsh Mohan Pathologic basis of disease by Cotran, Kumar, Robbins.



Course Duration	28 hours.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<p>At the end of the course, the student will be able to :</p> <ul style="list-style-type: none"> • Acquire the knowledge of concepts of cell injury & changes produced thereby in different tissues & organs, capacity of the body in healing process. • Recall the etio -pathogenesis, the pathological effects & the clinico-pathological correlation of common infections & non-infectious diseases • Acquire the knowledge of concepts of neoplasia with reference to the etiology, gross & microscopic features, diagnosis & prognosis in different tissues & organs of the body. • Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinical significance [with special emphasis to neuro- musculoskeletal & cardio-respiratory systems] • Acquire knowledge of common immunological disorders & their resultant effects on the human body. • Understand in brief, about the Haematological diseases & investigations necessary to diagnose them & determine their prognosis.
Course Assessments	<p>Assignment 1: 30%. Assignment 2: 10% Final Exam: 60% 60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week):</p> <ul style="list-style-type: none"> • Cell injury-causes, mechanism & toxic injuries with special reference to Physical, Chemical & ionizing radiation. <p>b) Reversible injury [degeneration] - types, morphology, swelling, hyaline, fatty changes</p>
Session 2 (Week 2)	<p>Assignment 1 handed out</p> <p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Intra- cellular accumulation hyaline, mucin <p>Irreversible cell injury types of necrosis, apoptosis, calcification, dystrophic & metastatic.</p> <p>Extra-cellular accumulation amyloidosis, calcification-Pathogenesis, morphology.</p>
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <p>Inflammation & Repair:-</p> <p>a) Acute inflammation-features, causes, vascular & cellular events b) Morphologic variations</p>
Session 4 (Week 4)	<p>c) Inflammatory cells & mediators</p> <p>d) Chronic inflammation:-causes, types, non-specific & Graunulomatous – with examples</p> <p>e) Wound healing by primary & secondary union, factors promoting & delaying healing process.</p>
Session 5 (Week 5)	Topics to be covered in the session (week)



	<ul style="list-style-type: none"> f] Healing at various sites-including bones, nerve & muscle g] Regeneration & repair
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Immuno-pathology-[basic concepts] <p>a] Immune system : organization, cells, antibodies, regulation of immune responses and Organ transplantation.</p>
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <p>Hyper-sensitivity</p> <p>c] Secondary immuno-deficiency including HIV</p>
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Circulatory disturbances a] Edema-pathogenesis, types, transudates/exudates b] Chronic venous congestion-lung, liver, spleen c] Thrombosis-formation, fate, effects d] Embolism-types, clinical effects
Session 10 (Week 10)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> e] Infarction-types, common sites f] Gangrene-types, aetiopathogenesis g] Shock-pathogenesis, types, morphologic changes
Session 11 (Week 11)	Deficiency disorders-Vitamin A, B, C, D.
Session 12 (Week 12)	<p>Growth Disturbance</p> <p>a] Atrophy-malformation, agenesis, metaplasia, dysplasia, hypertrophy, hyperplasia b] Neoplasia, calcification, histogenesis, biologic behavior, difference between benign & malignant tumor</p> <p>c] Malignant neoplasms –grades, stages, local & distal spread</p> <p>d] Carcinogenesis-environmental carcinogens e] Chemical, Occupational, heredity, viral</p>
Session 13 (Week 13)	<p>Medical Genetics :</p> <p>a) Karyotypic abnormalities</p> <p>b) Mendelian disorders</p> <p>c) Inborn errors of metabolism</p>
Session 14 (Week 14)	<p>Specific Pathology:-</p> <p>A] CVS</p> <p>a] Arteriosclerosis-Ischemic heart diseases – angina, myocardial infarction Pathogenesis / Pathology</p> <p>b] Hypertension</p> <p>c] C.C.F.</p> <p>d] Rheumatic & Congenital H.D.</p>
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy



	and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Therapeutic Exercise

1	Course name	Therapeutic exercise
2	Course Code	PT203
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022

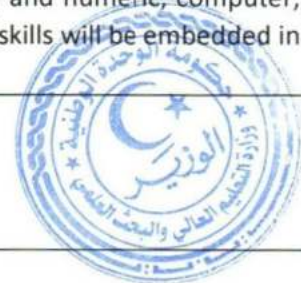
Brief Description:	This course include the text therapeutic Exercise Prescription which serve as a thorough and practical treatment ,manual, providing detailed instructions on exercise prescription to address specific problems in the lower extremity ,upper extremity and spine , specific exercises are described along with modifications progressions ,alternatives, teaching tips ,and common compensations , case studies are presented ,with explanations of choices and application of concepts and principles, this course is a detailed practical application guide for a therapeutic exercise prescriptions.
Textbooks required for this Course:	Butler, D.S, Moseley, L. (2003). Explain Pain. Adelaide. Noigroup Publications. Merskey H, Bogduk N. Classification of chronic pain. 2nd ed. Seattle: IASP Press; 1994. Many other learning materials.
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities. Laboratory experiments.
Course Objectives:	At the end of the course, the candidate will be able to– 1] Define the various terms used in Mechanics, Biomechanics & Kinesiology, Recall the basic principles of Physics related to mechanics of movement/ motion 2] Describe & acquire the skill of use of various tools of the Therapeutic gymnasium



	<p>3] Acquire knowledge of Movements – Classification, Principles, and Techniques & Uses.</p> <p>4] Acquire knowledge of different starting & derived positions</p> <p>5] Acquire the skill of application of various massage manipulations & Describe Principles, Physiological effects, Therapeutic use, Merits & Demerits.</p> <p>6] Acquire skill of assessment -Sensations, Superficial & Deep Reflexes, Pulse rate/ Heart rate, Blood Pressure, Chest Expansion, Respiratory Rate, Limb Length & Girth Measurement on Models</p> <p>7] Acquire knowledge & skill of Relaxation</p> <p>8] Describe the skill & significance of Group & Recreational Exercises & their Advantages & Disadvantages</p> <p>9] Be able to describe Principles of Yoga, its types, its physiological & psychosomatic effects & demonstrate standard yoga postures used by the beginners</p> <p>10] Be able to demonstrate General Fitness exercises & understand principles of General Fitness</p> <p>11] Understand biomechanics of joints of the skeletal system</p>
Course Assessments	<p>Assignment1: 30%.</p> <p>Assignment2: 10%</p> <p>FinalExam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>General Biomechanics</p> <ul style="list-style-type: none"> · Force – Analysis of Force · Internal & External force, Resolution of force, force vectors, force systems. Level 3- Calculation of force: Parallelogram of forces, use of coordinates · Mechanics of Position-Gravity, Center of Gravity, Line of Gravity, Base of support, Equilibrium, Fixation &Stabilisation - Level 3- deviations with respect of center of mass, line of gravity & stability · Introduction to statics & dynamic, Newton laws of motion · Mechanics of Movements- Axes & Planes, Speed, velocity, work, mechanical advantage, energy, power, acceleration, Momentum, Inertia & Friction, - Level 3- friction types · Simple Machine - a) Levers – Types, mechanical advantage & Uses, Angle of Pull b) Pulleys- Types (single & multiple) mechanical advantage & Uses c) Pendulum d) Elasticity – Springs, stress, strain, Hooke’s Law - Level 2- behavior under stress · Types of muscle work
Session 2 (Week 2)	<p>Starting & derived positions</p> <ul style="list-style-type: none"> · Description of position, Muscle Work & Effects & Uses: · Lying, sitting, kneeling, standing, hanging, positions derived by moving arm, legs & trunk - Level 3- positions in water



Session 3 (Week 3)	Movement · Classification, Principles, Techniques & Uses - Level 3- trick movements
Session 4 (Week 4)	Range of Motion – · Goniometry (Technique, Uses & Types of Goniometry) - Level 2- Other methods of range of motion assessment (tape) - Level 3- trick movements, range of motion of spine especially lumbar & cervical, · Inclinator, motion analysis, C-ROM, B-ROM
Session 5 (Week 5)	Limb length measurement (only lower limb - apparent, true) - Level 2- supra- trochanteric) - Level 3- other methods, clinical aspects · girth measurements: upper limb & lower limb(tape). · Level 2- volumetric assessment, girth measurements of fingers. - Level 3- girth measurements of ankle
Session 6 (Week 6)	Assessment of Sensations & Reflexes, - Level 2- assessment of sensations dermatome wise & peripheral nerve distribution, monofilament testing, algometer - Level 3- grades of deep tendon reflexes, clinical application in UMN & LMN lesion Blood Pressure, Pulse Rate, Respiratory Rate & Chest Expansion (in normals) - Level 3- Blood Pressure, Pulse Rate, Respiratory Rate & Chest Expansion Variations in normal & abnormal
Session 7 (Week 7)	General Relaxation- Principles, methods & effects/ uses - Level 2- Biofeedback - Level 3- clinical applications.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topic to be covered in this session (week) Introduction to Manual Therapy* i) Peripheral joint mobilization- accessory movements, oscillations, concave-convex rule ii) Soft tissue mobilization- Massage (Principles, Classification, Effects, Merits, Demerits, Skills on extremities, scalp, spine, abdomen, face), - Level 2- Myofascial release, muscle energy technique, - Level 3- Cyriax
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.



Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Neurology, Neurosurgery & Physiotherapy managements

1	Course name	Neurology, Neurosurgery & Physiotherapy managements
2	Course Code	PT403
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This program integrates the clinical & academic and research components of Neuro-physiotherapy Practice, with an emphasis on the management of patients with Neurological disorders. You will develop an understanding of evidence based practice and develop as an advanced physiotherapy practitioner. Student will be able to select from a wide range of modules according to your interest and complete at least one clinical placement.
Textbooks required for this Course:	1. Cash's Textbook for Physiotherapists in Neurological conditions- Patricia Downie 2. Physical Rehabilitation – O'Sullivan 3. Steps to follow – Patricia Davies 4. Motor Control theory& practical Application- Shumway Cook 5. Treatment of CP & motor delay - Sophie Levitt 6. Neurological Rehab – Darcy Umphred 7. Normal Child –Illingworth
Course Duration	28hours An additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	By the end of this course the student will be able to: 1] detect abnormalities in neurodevelopment. 2] assess, identify &analyze neuro-motor & psychosomatic dysfunction in adult &



	<p>paediatric & co-relate the finding with provisional diagnosis, interpretation of routine neurological investigations & arrive at functional diagnosis with clinical reasoning</p> <p>3] understand the principles & acquire Neuro therapeutics skills</p> <p>4] plan, prescribe & execute short term & long term goals with appropriate therapeutic interventions & be able to modify treatment techniques according to stage of disease.</p>
Course Assessments	<p>Assignment1: 30%.</p> <p>Assignment2:10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>1] Understanding theories of motor control & motor learning</p> <p>2] Understanding sensory system & organization of sensory strategies for efficient motor output.</p> <p>3] Skills of sensory-motor learning & neuro-muscular skeletal training</p>
Session 2 (Week 2)	<p>A) Pediatric</p> <ul style="list-style-type: none"> · Detection of abnormalities in Neurodevelopment in terms of Maturational Reflexes, Reactions, Tone, Movement, Motor age, Posture, Balance & Locomotion & identification of Primary & Secondary dysfunction · Screening for high risk babies & role of early intervention · Plan short & long term goals based on ICF and implement appropriate treatment programme. <p>- Level 2: Detection of abnormalities in Neurodevelopment in terms of mental age, Recent advances in treatment in the above mentioned conditions</p>
Session 3 (Week 3)	<p>i] Upper Motor Neuron Lesions</p> <ol style="list-style-type: none"> 1] Different types of Cerebral Palsy 2] Head Injury <p>- Level 2: Infective diseases of CNS- Meningitis, Encephalitis, Tetanus, Space Occupying Lesions etc.,</p> <p>ii] Lower Motor Neuron lesions –</p> <ol style="list-style-type: none"> 1] Spinal dysraphism, hydrocephalus, SMA etc. 2] Polio myelitis- Level 2 <p>iii] Muscle disease</p> <p>Musculo dystrophies (Duchenne Muscular Dystrophy, Becker Muscular Dystrophy)</p> <p>iv] ADHD, Autism, Down 's syndrome, Learning disability- Level 2</p>
Session 4 (Week 4)	<p>B) Adult</p> <p>Planning short term & long term goals & formulating treatment programme based on ICF for all the topics given as follows</p> <p>80</p> <ul style="list-style-type: none"> - Level 2: Recent advances in treatment · Central Nervous System 1] Disorders of circulation 2] Space occupying lesions- Cortical, Cerebellar, Thalamic & Brain-stem <p>-Level 2</p>



	<p>3] Head injury</p> <p>4] Cranial nerves-emphasis on 5th & 7th & 8th nerves</p> <p>5] Demyelinating diseases of the CNS-Multiple sclerosis</p> <p>6] Lesions of Extra-pyramidal system & Basal ganglia-Parkinsonism and Parkinson's disease, Cerebellar Ataxia</p> <p>- Level 2: Chorea, Athetosis, Dystonia, Spasmodic torticollis.</p>
Session 5 (Week 5)	<p>Spinal Cord</p> <p>1] Infective disorders of spinal cord – Transverse myelitis, - Level 2: Tabes Dorsalis, Meningitis, Encephalitis etc. 2] Degenerative disorders- Motor Neuron Disease, Alzheimer 's disease 3] Traumatic – Paraplegia etc.</p> <p>4] Space Occupying Lesions</p> <p>5] Polyneuropathy - Sub-acute combined degeneration, Guillain Barre Syndrome, Alcoholic, Diabetic neuropathy, Leprosy</p> <p>6] Syringomyelia Hereditary Ataxia, Peroneal muscular atrophy, S.M.A</p> <p>7] Disorders of peripheral nerves - tumours, infective & metabolic lesions of nerves</p>
Session 6 (Week 6)	<p>Muscle Diseases</p> <p>1] Limb girdle dystrophy, facioscapulohumeral dystrophy</p> <p>2] Myopathies</p> <p>Psycho-somatic Pain</p> <p>Treatment programme includes</p> <p>a) Application of appropriate Electro-therapeutic modes for relief of pain & functional restoration</p> <p>b) Application of neuro therapeutic skills like PNF, NDT, Carr & Shepherd, Brunnstrom & Rood's</p> <p>c) Co ordination & balancing exercises by using techniques based on neuro physiological principles</p> <p>d) Tools used for neuro rehabilitation like vestibular balls, tilt board etc.</p> <p>e) Application of transfer & functional re-education exercises, postural exercises & gait training</p> <p>f) Bladder training</p> <p>g) Developing a philosophy for caring</p> <p>h) Prescription for appropriate orthotic devices & fabrication of temporary splints.</p> <p>i) Ergonomic advice for prevention / rehabilitation & parents / care givers' education about handling of a patient</p> <p>j) Applied Psychology for Physiotherapists.</p>
Session 7 (Week 7)	<p>CLINICAL</p> <p>Evaluation & treatment planning; documentation & presentation of minimum Four cases</p> <p>in-1]- Paediatric neuro case ,Three cases each in 2] U.M.N.lesion (Adult) 3] L.M.N. lesion (Adult)</p>
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Muscle Diseases • Psycho-somatic Pain
Session 16 (Week 16)	Final Exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Graduation Project

1	Course name	Graduation project
2	Course Code	PT404
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Training on project establishment and methodology of execution including literature reviewed and use scientific information resources
Textbooks and References:		The students will use different resources.
Course Duration		56 weeks
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1- Define the Principles of research planning and design 2- Describe principles of basics of experimental design and analysis. 3- Identify suitable research topics. 4- Undertake independent research.



	<p>5- Be able to do Critical review and analysis of related literature.</p> <p>6- Design research study</p> <p>7- Perform method validation and presentation of research report.</p> <p>8- Write the research proposal and theses.</p> <p>9-Demonstrate appropriate communication skills.</p> <p>10- Present clearly and effectively scientific topic in a tutorial or a staff meeting.</p> <p>11- Work separately or in a team to research and prepare a scientific topic.</p>
Course Assessments	PPT Slides -End of semester after presentation
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Development of a research protocol
Session 14 (Week 14)	<p>Fieldwork and data analysis</p> <ul style="list-style-type: none"> - The research project course involves the generation of new scientific information and a review and understanding of the scientific literature. - The research may be conducted in a laboratory, hospital, community laboratories, different company, etc., depending on the project and the supervisor. - Students are divided into groups and each group is working together. - Students are expected to work approximately 56 hours. This will include working in the laboratory, etc., reading or searching literature, and writing up the research project. - Fields of study available may include: <ul style="list-style-type: none"> o Biomedical genetics o Immunogenic o Cancer genetics o Biochemistry o Genetics Diagnosis o Embryology
Session 15 (Week 15)	Final Exam
Session 16 (Week 16)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The



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General Rehabilitation

1	Course name	General Rehabilitation
2	Course Code	PT402
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of Rehabilitation basics. Rehabilitation is founded on the philosophy that every individual has the inherent tendency and right to be an expert in their own health care. This, therefore, marks the distinction between acute care and rehabilitation, where acute care is concerned with an individual's survival, while rehabilitation is concerned with the education and training of individuals to be able to carry out activities of daily living by themselves, thus promoting self-care and functional independence. Despite this there is currently no universal definition or understanding of rehabilitation, and it is portrayed in many ways depending on the context, including as a development issue, disability issue, health issue, human rights issue, substance abuse issue, and security issue, to name a few. As such there are a broad range of definitions for rehabilitation used by different authorities.
Textbooks required for this Course:		Butler, D.S, Moseley, L. (2003). Explain Pain. Adelaide. Noigroup Publications. Merskey H, Bogduk N. Classification of chronic pain. 2nd ed. Seattle: IASP Press; 1994. Many other learning materials.
Course Duration		28 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:		Rehabilitation objectives include: 1. Students can identify strategies for self-awareness and self-development that will promote coping and adjustment to disability. 2. Students can practice rehabilitation in a legal and ethical manner, adhering to the Code of Professional Ethics and Scope of Practice for the profession.



	<p>3. Students can integrate into practice an awareness of social issues, trends, public policies and developments as they relate to rehabilitation.</p> <p>4. Students can assist employers to identify, modify, or eliminate, architectural, procedural and/or attitudinal barriers.</p>
Course Assessments	<p>Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topicstobecovedinthesession (week):</p> <ul style="list-style-type: none"> •Introduction to Rehabilitation
Session 2 (Week 2)	<p>Assignment1handedout</p> <p>Topicstobecovedinthesession (week)</p> <ul style="list-style-type: none"> • Delivery of Rehabilitation Care: The Team • Therapeutic Exercises and Other Alternative Techniques in Treatment
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Sociolegal Aspects of Rehabilitation • Principles in Management of Communication Impairment • Behavioral and Learning Problems in the Disabled
Session 4 (Week 4)	<p>Geriatric Conditions Orthotics Amputation and Prosthetics Mobility Aids</p>
Session 5 (Week 5)	<p>Topicstobecovedinthesession (week)</p> <ul style="list-style-type: none"> • Architectural Barriers • Activities of Daily Living • Vocational Rehabilitation
Session 6 (Week 6)	<p>Topicstobecovedinthesession (week)</p> <ul style="list-style-type: none"> •Physical Agents Used in the Management of Pain and Paralysis
Session 7 (Week 7)	<p>Topicstobecovedinthesession (week)</p> <p>Congenital Malformations Rehabilitation of Cerebral Palsy</p>
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	<p>Topicstobecovedinthesession (week/s)</p> <ul style="list-style-type: none"> • Rehabilitation of Poliomyelitis • Rehabilitation of Brain Injury • Stroke Rehabilitation • Peripheral Nerve Injuries • Common Deformities and the Role of Surgery in Rehabilitation • Rehabilitation of Muscular Dystrophy • Rehabilitation of Spinal Cord Injury • Sports Rehabilitation and Exercises for Positive Health • Other Neurological Conditions • Cardiac and Pulmonary Rehabilitation • Vascular and Hematological Conditions • Rehabilitation of Burns • Rehabilitation of Arthritis



	<ul style="list-style-type: none"> • Rehabilitation of Fractures • Common Pain Syndromes
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
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Cardio -Respiratory & Physiotherapy Management

1	Course name	Cardio -Respiratory & Physiotherapy Management
2	Course Code	PT302
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st 2 subjects to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

Heart and lung Health is an important topic especially because your heart is one of the vital organs keeping you alive and active. The link between heart health and physiotherapy is still one being researched today, however, there has been enough studies completed to prove that the heart greatly depends on the activity levels in one's body, which is true before and after any cardiovascular problems arise. Physiotherapy can help the blood flow more easily through the heart, can help open up vessels, and overall strengthens the muscles in the heart. For those who are at high risk of developing Heart Disease, it is important to seek physiotherapy. The main goal of this subject is to help student to good knowledge of patients rehabilitate and get their bodies



	and hearts back to their best performance. We take a thorough approach to all physiotherapy and can also recommend other therapies,
Textbooks required for this Course:	Chaves GS, Freitas DA, Santino TA, Nogueira PA, Fregonezi GA, Mendonça KM. Chest physiotherapy for pneumonia in children. Cochrane Database of Systematic Reviews. And other text books.
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<p>Learning Outcomes and Objectives</p> <p>Student should be able to:</p> <ol style="list-style-type: none"> 1. Understand and explain the physiological responses and adaptations of muscle to exercise and training. 2. Apply clinical reasoning to problems with cardiac rehabilitation exercise programmes for patient with cardiac disease. 3. Integrate and evaluate evidence in relation to the design of phase IV exercise programmes for cardiac disease patients. 4. Evaluate problem scenarios in relation to exercise programmes for CVD patients. 5. Implement emergency procedures for cardiac patients. 6. Conducting motivational interviews with respect to exercise and other health behaviours.
Course Assessments	<p>Assignment1: 30%.</p> <p>Assignment2:10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<ul style="list-style-type: none"> • Anatomy of the Human Heart • Cardiac Depression Scale • Cardiac Rehabilitation
Session 2 (Week 2)	<ul style="list-style-type: none"> • Assessment of Breathing Pattern Disorders • ICU Acquired Weakness • ICU Delirium
Session 3 (Week 3)	<ul style="list-style-type: none"> • Physiotherapists Role in ICU • Assisted Coughing • Asthma
Session 4 (Week 4)	<ul style="list-style-type: none"> • Cardiopulmonary Exercise Testing (CPET) In Adults <ul style="list-style-type: none"> • Cardiovascular Considerations in the Older Patient
Session 5 (Week 5)	<ul style="list-style-type: none"> • Postural Drainage • Postural Tachycardia Syndrome (POTS) • Pulmonary Embolism
Session 6 (Week 6)	<ul style="list-style-type: none"> • Cardiovascular Disease • Percussion • Peripheral Arterial Disease
Session 7 (Week 7)	<ul style="list-style-type: none"> • Cardiovascular Exercises For Elderly • Chest Drains

	<ul style="list-style-type: none"> • Rehabilitation of Fractures • Common Pain Syndromes
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Cardio -Respiratory & Physiotherapy Management

1	Course name	Cardio -Respiratory & Physiotherapy Management
2	Course Code	PT302
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st 2 subjects to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

Heart and lung Health is an important topic especially because your heart is one of the vital organs keeping you alive and active. The link between heart health and physiotherapy is still one being researched today, however, there has been enough studies completed to prove that the heart greatly depends on the activity levels in one's body, which is true before and after any cardiovascular problems arise. Physiotherapy can help the blood flow more easily through the heart, can help open up vessels, and overall strengthens the muscles in the heart. For those who are at high risk of developing Heart Disease, it is important to seek physiotherapy. The main goal of this subject is to help student to good knowledge of patients rehabilitate and get their bodies

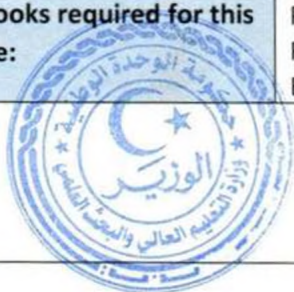


	<ul style="list-style-type: none"> • Physical Activity and Cardiovascular Disease • Physical Activity and Respiratory Conditions • Improve Pulmonary Function & Physiotherapy and Pilates to • Physiotherapy in Palliative Care • Pleural Effusion
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Anatomy & physiology

1	Course name	Anatomy & physiology
2	Course Code	PT204
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy D.
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The broad goal of the teaching of undergraduate students in Anatomy aims at providing comprehensive knowledge of the gross anatomy, microscopic structures, development of human body and principles of genetics to provide a basis for understanding the clinical correlation of organs or structure involved and the skills to practice as a qualified Physiotherapist.
Textbooks required for this Course:	Pharmacology by Gaddum. Pharmacology & Pharmacotherapeutics Revised 19th Edition 2005 by Dr.S.D.Satoskar & Dr.S.D. Bhandarkar . Essential of Medical Pharmacology 5th Edition 2003 By Dr.K.D.Tripathi



Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<ul style="list-style-type: none"> • At the end of the course, the student should be able to: • Comprehend the normal disposition, inter-relationships, gross, functional and applied anatomy of the musculoskeletal system, locomotion, posture, gait and various organs in the body. • Comprehend the basic structure and connections between the various parts of the central nervous system so as to analyze the integrative and regulative functions of the organs and systems. • He/she should be able to locate the site of gross lesions according to the deficits encountered. • Identify the microscopic structures of various tissues and organs in the human body and correlate the structure with the functions. • To understand the basic principles of embryology including genetic inheritance and stages involved in development of the organs and systems from the time of conceptions till birth. • To study the basic principles of radiology and for comprehending deeper structures in the human body.
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week): GENERAL ANATOMY: · Introduction to the subject, Subdivisions of anatomy, Anatomical positions, Descriptive terms. Bones: Definition of bone, Classification – Morphological , structural- Macroscopic & Microscopic, Developmental, Regional, Structure of long Bone , Parts of long bone- epiphysis, diaphysis, metaphysis.
Session 2 (Week 2)	Assignment 1 handed out Topics to be covered in the session (week) <ul style="list-style-type: none"> • Types of epiphysis, Ossification- Primary and secondary centers, Law of ossifications, Blood supply, Functions, – Level 2: Medico-legal importance & applied anatomy.
Session 3 (Week 3)	Topics to be covered in the session (week) Cartilage : Definition, classification, structure distribution, Applied Anatomy · Joints : Definition, classification, fibrous, cartilaginous & synovial Nerve supply, blood supply of joints
Session 4 (Week 4)	Drug acting on CNS : Level 2: Factors limiting, range of movement, Joint Position- Loose packed, close packed – Level 3: Osteoarthritis, dislocation. · Muscles: Definition, Types- skeletal, cardiac, visceral.
Session 5 (Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Skeletal muscle – Origin, insertion, Morphological Classification, Functional classification - Prime movers, fixators, antagonists,



	synergists. Red and white muscle fibres. Action of muscles – Isotonic, isometric, eccentric.
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Level 2: Power of muscle, range of contraction, active Insufficiency, passive insufficiency, structural and functional correlation, hypertrophy, hyperplasia, Shunt, swing and spin components of muscle. Distribution, structure, blood supply, nerve supply, Neuromuscular junctions, Body lever system.
Session 7 (Week 7)	Topics to be covered in the session (week) Level 3: Paralysis, atrophy, myasthenia gravis · Skin – Thin & thick, appendages, dermatomes – Level 2: Tension lines, flexure lines Langer's lines – Level 3: Skin grafts
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) • REGIONAL ANATOMY: UPPER LIMB: · Regions- Breast, Shoulder region, Axilla, Arm, Cubital fossa, Forearm, Hand. – Level 2: Grips of hand, forearm spaces, radial bursa, ulnar bursa, palmar spaces, Dupuytren's contracture, carpal tunnel syndrome, breast cancer
Session 10 (Week 10)	Topics to be covered in the session (week) • – Level 3: Axilla- abscess drainage. Fascial spaces- Surgical significance · Bones: Scapula, Clavicle, Humerus, Radius, Ulna, Articulated hand – Level 3: Fractures of clavicle, humerus, scaphoid Colles fracture, mallet finger, trigger finger · Joints - shoulder girdle, shoulder joint, Elbow, radioulnar joints, Wrist, first carpometacarpal joint – Level 2 : Dislocation of shoulder, carrying angle
Session 11 (Week 11)	Drugs acting on CVS : - Blood vessels-Arteries Axillary, brachial, radial, ulnar · Veins – cephalic, basilic, median cubital · Lymphatics – Axillary lymph nodes – Level 3 : Veins- thrombosis; intravenous injection, Lymphangitis, lymphadenitis · Nerves- Brachial plexus, axillary, median, ulnar, musculocutaneous, Radial nerves, Dermatomes.
Session 12 (Week 12)	Drug acting on Respiratory system LOWER LIMB: · Regions: Compartments of thigh, femoral triangle, adductor canal, Gluteal region, Popliteal fossa, Leg, arches of foot, sole. – Level 2 : Pes cavus, pes planus, club foot. Walking cycle. · Bones – Hip, Femur, Tibia, Fibula, Patella, Articulated foot, – Level 2: Blood supply to head of femur, fracture neck of femur.
Session 13 (Week 13)	Muscles :Quadriceps femoris, sartorius, Psoas major, Iliacus, Gluteus maximus: medius and minimus, quadratus femoris, Biceps femoris, Semitendinosus, Semimembranosus, Popliteus, Adductor longus brevis and magnus, Soleus, Gastrocnemius, Tibialis anterior



Session 14 (Week 14)	VERTEBRAL COLUMN: Normal curvatures, abnormal curvatures, intervertebral disc, Posture and Gait, line of gravity ,centre of gravity, Weight, transmission, postural muscles.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Gynecology & Obstetrics

1	Course name	Gynecology & Obstetrics
2	Course Code	PT300
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

The course focuses on the women's health issues including pre and post natal women.

The bachelor course emphasized in a subspecialty in physiotherapy concerned with the promotion of health throughout the childbearing period and helps the mother to adjust advantageously to the physical and psychological changes of pregnancy and the postnatal period. The role of the therapist in Obstetrics and Gynecology, Involves throughout the period of pregnancy, labour and puerperium and the preoperative and postoperative periods.



Textbooks required for this Course:	Text Book of Gynaec- Dutta Text Book of Obs- Dutta
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	At the end of the course, the candidate will <ul style="list-style-type: none"> • Be able to describe the normal & abnormal physiological events during the Puberty, Pregnancy, Labor, Puerperium & Pre, Peri & Post Menopause. • Be able to discuss common complications during Pregnancy, Labour, Puerperium & Pre, Peri & Post-Menopausal stage & various aspects of Pelvic floor Dysfunction & the management in brief. • Demonstrate an ability to integrate the patient assessment into an appropriate management plan using the concepts and strategies of clinical reasoning • Proof of work experience
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topicstobecoveredinthesession (week): <ul style="list-style-type: none"> • Physiology of Puberty & Menstruation, Abnormalities &common problems of Menstruation
Session 2 (Week 2)	Assignment1handedout Topicstobecoveredinthesession (week) <ul style="list-style-type: none"> • Pregnancy—Fertilization, Development of the foetus, Normal gestations, Abnormal/Multiple gestations
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> •Common Complications during pregnancy like P I H, Eclampsia, Diabetes, Hepatitis, German Measels, TORCH infection.
Session 4 (Week 4)	Geriatric Conditions <ul style="list-style-type: none"> • Labor: Normal-Events of Ist, IInd&IIIrd Stages of labor
Session 5 (Week 5)	Topicstobecoveredinthesession (week) <ul style="list-style-type: none"> •Common Complications during labor & management. • Caesarian section
Session 6 (Week 6)	Topicstobecoveredinthesession (week) <ul style="list-style-type: none"> • Post Natal –Puerperium, lactation, Overview of Contraception
Session 7 (Week 7)	Topicstobecoveredinthesession (week) D. Post Natal –Overview of complications of repeated child bearing with small gaps
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topicstobecoveredinthesession (week) E. Overview of family planning F. Uro-genital dysfunction <ol style="list-style-type: none"> 1. Uterine prolapse-classification &management (Conservative /Surgical) 2. Cystocoele, Rectocoele, Enterocoele <ul style="list-style-type: none"> • Neoplasm of Female reproductive organs-surgical management - Level 3



	<ul style="list-style-type: none"> Pre, Peri & Post Menopause-Physiology, Complications & management Pelvic Inflammatory Diseases with special emphasis to backache due to CLINICAL- Evaluation & presentation of two cases each in a) Pelvic floor dysfunction b) Antenatal care c) Postnatal care i) Following normal labor ii) Following Caesarean section d) Pelvic Inflammatory Diseases OBSERVATION- One Normal & One Caesarian delivery, one case of Tubectomy & One Hysterectomy /Repair of the Uro-genital Prolapse.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Hospital Placement & Training 2

1	Course name	Hospital Placement & Training 2
2	Course Code	PT405
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	4
6	Pre-requisite requirements	All 1 st , 2 nd & 3 rd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	Increase the ability to: 1). Identify, discuss & analyze the Musculoskeletal Dysfunction in terms of Biomechanical, Kinesiological & Biophysical bases & correlate the same with the provisional diagnosis & arrive at appropriate Functional Diagnosis with Clinical Reasoning. 2). Plan & prescribe as well as acquire the skill of executing short & long term Physiotherapy treatment by selecting appropriate modes of Mobilization / Manipulations, Electro Therapy, Therapeutic exercises & appropriate Ergonomic Advise for the relief of pain, restoration / maintenance of function & rehabilitation for maximum functional independence in A.D.L at home & work place.
Textbooks required for this Course:	1. Cash's Textbook of Orthopedics & Rheumatology for PTists – Patricia Downie 2. Therapeutic exercise – Kisner 3. Essentials of Orthopedics & Applied Physiotherapy – Jayant Joshi 4. Physical Rehabilitation – O'Sullivan 5. Manual Mobilisation of extremity joints- Freddy Kalterborne 6. Orthopedic Physical Therapy – Donatelli 7. Neural tissue mobilization – Butler 8. Manual Therapy – Maitland 9. Manual of Myofascial Release – Carol Manhein 10. Muscle energy techniques – Leon Chaitow 11. Taping Tech - Mac Donald Rose 12. Essentials of Orthopedics for PTists- Ebenezer 13. Callietseries 14. Clinical Ortho Rehab - Brotzman
Course Duration	56 hours No additional hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	The aim of practice education is to offer a range of practice-based learning experiences that encourage the application and development of theoretical knowledge and practical skills learned during academic modules, transforming it into the deep contextual knowledge required within professional practice: 1. The student will have an identified clinical educator within a health care setting where they will have the opportunity to use and develop clinical knowledge and skills acquired during the previous modules. 2. The student should have the opportunity to identify learning needs from previous clinical experiences and attempt to address these needs within a different health care situation. 3. The opportunity will exist to learn new profession specific skills and to acquire new knowledge. Where possible, a key feature of these modules will be the development of learning sets whereby students will facilitate each others' learning.
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Evaluation, interpretation of investigations & functional diagnosis with appropriate clinical reasoning for planning & implementation of management techniques. Planning, Prescription & Implementation of short term & long term goals with clinical reasoning.



	Documentation. Application of appropriate electro therapeutic modes for relief of acute & chronic pain & swelling; wound healing, re-education etc with clinical reasoning.
Session 2 (Week 2)	Application of Simple therapeutic modes for muscle strength & joint mobility. Advanced therapeutic modes of mobility like Mobilization . Techniques [Techniques covered in III rd B.P.T.], Friction Massage, Myofascial Release, Muscle Energy Techniques & Neuro Dynamic Techniques on patients. Application of various taping methods for support & relief of pain
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Posture Correction & Gait Training • Prescription of appropriate orthotic & prosthetic devices & fabrication of simple temporary splints. 10] Application of appropriate Therapeutic exercises using therapeutic gymnastic tools as and when necessary, for the relief of pain, structural stability, strength & endurance & functional restoration including gait training and exercises for the preventive measures. 11] Appropriate Home Programme & Ergonomic advise for preventive measures & functional efficiency at home &work place, advice to Parents & Care Givers.
Session 4 (Week 4)	Spine – Conditions related to thoracic spine /cervical spine /lumbar spine Eg. torticollis, radiculopathy, myelopathy, mechanical pain, T.M.syndrome,Thoracic outlet syndrome, disc prolapse, lysis, listhesis, SI joint dysfunction(level I) Manual Therapy
Session 5 (Week 5)	Surface Anatomy. Examination of joint integrity , Contractile tissues ,non contractile tissues. Mobility – osteokoinematics, arthrokinematics & end feel.
Session 6 (Week 6)	Topics to be covered in the session (week) Neurodynamic techniques
Session 7 (Week 7)	Mobility – osteokoinematics, arthrokinematics & end feel . Evaluation & treatment of soft tissue structures a) Skin & superficial fascia b) body contour c) Myofascial structures - Level 2 –Trigger point assessment & treatment. Pain – Original & Referred. Tissue Response to immobilization &remobilizationpics to be covered . Overuse injuries Pathomechanics, types, assessment, functional diagnosis based on ICF, surgical &physiotherapy management
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Clinical Reasoning Process in Manual Therapy. Basic principles, indications & contraindications of mobilization skills for extremity joints & soft tissues:
Session 14 (Week 14)	i) Maitland . ii) Kaltenborn . iii) Mulligan. iv) McKenzie. e) MET. f) Myofascial release. g) Cyriax. h) Neuro-Dynamic Testing. Basics in Neuro Therapeutics Skills & Applications with Clinical reasoning :



	i) Principles of Neuro Developmental Technique, Rood's Technique (only theory), PNF, Brunnstrom . ii) Technique (Demonstration on patients, practice on models) . iii) Indications for Application Assessment of Movement Dysfunction.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Hospital Placement & Training 1

1	Course name	Hospital Placement & Training 1
2	Course Code	PT306
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:



Increase the ability to: 1). Identify, discuss & analyze the Musculoskeletal Dysfunction in terms of Biomechanical, Kinesiological & Biophysical bases & correlate the same with the provisional diagnosis& arrive at appropriate Functional Diagnosis with Clinical Reasoning.2). Plan & prescribe as well as acquire the skill of executing short & long term Physiotherapy treatment by selecting appropriate modes of Mobilization

	/ Manipulations, Electro Therapy, Therapeutic exercises & appropriate Ergonomic Advise for the relief of pain, restoration /maintenance of function & rehabilitation for maximum functional independence in A.D.L at home & work place.
Textbooks required for this Course:	1. Cash's Textbook of Orthopedics & Rheumatology for PTists – Patricia Downie. 2. Therapeutic exercise – Kisner. 3. Essentials of Orthopedics & Applied Physiotherapy – Jayant Joshi. 4. Physical Rehabilitation – O'Sullivan. 5. Manual Mobilization of extremity joints- Freddy Kalterborne. 6. Orthopedic Physical Therapy – Donatelli. 7. Neural tissue mobilization – Butler. 8. Manual Therapy – Maitland. 9. Manual of Myofacial Release – Carol Manhein.10. Muscle energy techniques – Leon Chaitow.11. Taping Tech - Mac Donald Rose 12. Essentials of Orthopedics for PTists- Ebnezer. 13. Calliet series.14. Clinical Ortho Rehab - Brotzman
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	Evaluation, interpretation of investigations & functional diagnosis with appropriate clinical reasoning for planning & implementation of management techniques. Planning, Prescription & Implementation of short term & long term goals with clinical reasoning. Documentation. Application of appropriate electro therapeutic modes for relief of acute & chronic pain & swelling; wound healing, re-education etc with clinical reasoning. Application of Simple therapeutic modes for muscle strength & joint mobility. Application of Advanced therapeutic modes of mobility like Mobilization Techniques [Techniques covered in III rd B.P.T.], Friction Massage, Myofascial Release, Muscle Energy Techniques & Neuro Dynamic Techniques on patients. Application of various taping methods for support & relief of pain. Posture Correction & Gait Training. Prescription of appropriate orthotic & prosthetic devices & fabrication of simple temporary splints. Application of appropriate Therapeutic exercises using therapeutic gymnastic tools as and when necessary, for the relief of pain, structural stability, strength & endurance & functional restoration including gait training and exercises for the preventive measures. Appropriate Home Programme & Ergonomic advise for preventive measures & functional efficiency at home & work place, advice to Parents & Care Givers.
Course Assessments	FinalExam: 100% A 60 % is required for a pass in this course
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<ul style="list-style-type: none"> • FRACTURE AND DISLOCATION I) Upper extremity II) Lower extremity III) Spine – Cervical, Thoracic & Lumbar
Session 2 (Week 2)	Traumatic amputation, Overuse injuries, Crush injuries Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Lumbar plexuses injuries & peripheral nerve injuries



Session 4 (Week 4)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Sports injuries: Classification of sports injuries, risk factors for sport injuries, assessment, functional diagnosis based on ICF, preventive measures.
Session 5 (Week 5)	Topics to be covered in the session (week) Continue Sports injuries: Surgical & physiotherapy management, Objective Outcome measures & recent advances in rehabilitation
Session 6 (Week 6)	Topics to be covered in the session (week) Neurodynamic techniques
Session 7 (Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Overuse injuries Pathomechanics, types, assessment, functional diagnosis based on ICF, surgical & Physiotherapy management
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topics to be covered in the session (week) Epilepsy Mental Retardation Genetically transmitted neuro-muscular conditions
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Electrotherapy & therapeutic

1	Course name	Electrotherapy & therapeutic
2	Course Code	PT200
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4



6	Pre-requisite requirements	All 1 st subject to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The broad goal of the teaching of undergraduate students in Fundamentals of Electro Therapy aims at providing comprehensive knowledge of the physics, principles & Laws of Electricity & Electro , magnetic spectrum, understand the fundamental principles and uses of various modalities based on the type of energy utilized by each. Analyze the relationship between wavelength and frequency for electromagnetic energy. To acquire skills required to practice and use superficial thermal agents.
Textbooks required for this Course:	<ol style="list-style-type: none"> 1] Clayton's Electro therapy – Kitchen-3RD Ed 2] Clayton's Electro therapy – Kitchen-10th Ed 3] Electro therapy explained –by Low & Reed 4] Electrotherapy: Evidence Based Practice- Kitchen 11th Ed 5] Clayton's Electro therapy – Kitchen-3RD Ed 6] Clayton's Electro therapy – Kitchen-10th Ed 7] Electro therapy explained –by Low & Reed 8] Electrotherapy: Evidence Based Practice- Kitchen 11th Ed REFERENCE BOOK 1] Principles & Practice of Electro Therapy –Joseph Kahn 2] Clinical Electro Therapy-by Nelson & Currier 3] Thermal Agents – by Susan L. Michlovitz 4] Principles & Practice of Electro Therapy- Dr Saeed Anwar
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> a. Understand the physics, principles & Laws of Electricity & Electro-magnetic spectrum b. Describe in brief, certain common electrical components such as transistors, valves, capacitors, transformers etc c. Describe the mains electrical supply, Electric shock & precautions, Basic electrical components & their functions d. Explain the various ways electrical energy can be used to produce a therapeutic effect. e. Enumerate types of currents & describe production of High Frequency, Medium Frequency & Low Frequency electrical currents. f. Describe various types of electrodes used in therapeutics, describe electrical skin resistance & significance of various media used to reduce skin resistance g. Acquire knowledge of various superficial thermal agents, their physiological & therapeutic effects, Merits & Demerits.



	h. Describe effects of environmental & man-made electro- magnetic field at the cellular level & risk factors on prolonged exposure.
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	1] Physics And Basic Electrical Components A. Conductors & Insulators, Static Electricity- Electric Field, Potential difference & Capacitance. Current Electricity – E.M.F., Ohm’s Law, Thermal Effects of Electrical Currents. Magnetism – Properties of Magnet, Electromagnetic Induction, Lenz’s Law B. Rheostat- Types, Potentiometer, Ammeter, Oscilloscope, Transformer-Types, Capacitor, Inductor, Thermionic Valves, Transistors, - Level 2- Pulse Generator – Astable Multivibrator C. Mains Supply – Fuse, Plug, Switch, Wiring of the house, Dynamo. Shock – Types, Effects, Precaution & Treatment 2] Cellular Biophysics Reception & Emission of E.M.F. signals
Session 2 (Week 2)	3] E.M. spectrum Wavelength, Velocity & Frequency. Laws governing Radiation. 4] Fundamentals of Low frequency currents i] Types of Currents-applications in brief ii] Characteristics of Currents – Pulse- Types of Pulses, Phase, Waveform, Interpulse interval & Frequency iii] Polarity testing iv] Types of electrodes, Galvanic Skin Resistance –Significance & Methods to reduce GSR
Session 3 (Week 3)	5] Fundamentals of Medium frequency currents Physical Principles, Components of Panel, Testing of ApparatusInterferential Therapy, - Level 2- Russian currents 6] Fundamentals of High frequency currents— i] Pulse Generator, Circuit of Short Wave Diathermy & Ultrasound Machine ii] Physical Principles, Components of Panel, Testing of Apparatus– Continuous & Pulsed Short Wave Diathermy, Ultrasound, Ultra Violet Rays, LASER (Only Physical Principles & Types) iii] Hazards of environmental currents
Session 4 (Week 4)	7] Biophysics of Superficial heat Physical principles, components of panel, Physiological effects, Therapeutic Effects /uses, Merits & Demerits, Indications & Contra-indications, Skills of Application in- 12 i] Paraffin wax bath, ii] Whirl Pool, iii] Contrast bath iv] Hydro-collator / Hot packs v] Infra Red vi] Home remedies
Session 5 (Week 5)	8] Direct current (Constant) – Polarity Testing, Physiological & Therapeutic Effects Of D.C.& Safety measures, - Level 2: Cathode /Anodal Galvanism, Iontophoresis using various ions & pharmacotherapeutic drugs- Effects & concentration of Ions, Tap water Iontophoresis
Session 6 (Week 6)	9] Low Frequency CurrentsPhysiological& Therapeutic Effects/ Uses of Faradic-type Current, Techniques Of Application Interrupted Direct Current – Pulse Duration & Type of Pulse, Physiological & Therapeutic Effects/ Uses of Interrupted D.C., Technique of Application, Definition & Stimulation of Motor Points on Models T.N.S.-
Session 7 (Week 7)	10] Medium Frequency CurrentsElectro Physiological Effects & Uses, Contra Indications, Techniques of Application, Endovac attachment, Advantage of I.F.T. over low frequency currents - Level 2: Russian current



Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	11] Electro Magnetic Fields Production of Heat, S.W.D.-Continuous/Pulsed, Physiological Effects & therapeutic effects, Contraindications, Techniques of Application, Types of Electrodes. - Level 3: Long Wave Diathermy 12] Therapeutic Ultra Sound-pulsed/continuous, Physiological Effects & therapeutic effects, Contra Indications, Techniques of Application - Level 2: Dosimetry 13] Ultra Violet Rays Types of UVR, Physiological & Therapeutic Effects, Contra Indications, Test dose, Local & General Applications 14] Laser Properties, Types of Cold Laser, Physiological & Therapeutic Effects, Contra Indications
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Research Methodology

1	Course name	Research Methodology
2	Course Code	PT303
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2 subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	This course advances the student's understanding of health-related research methods and concepts. The course will explore human research ethics, qualitative research methods, and quantitative research methods. Students will read and critique both qualitative and quantitative published research.
Textbooks required for this Course:	1] Methods in Biostatistics - B.K. Mahajan 2] Research for Physiotherapists, project design & Analysis- Hicks, Carolyn D.M. 3] Foundations of clinical research: Applications to practices – L.G. Portney 4] Research Methodology - Methods & Techniques – C.R. Kothar.
Course Duration	28 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities.
Course Objectives:	On successful completion of the course students will be able to: 1. Describe ethical considerations pertaining to human research, and be able to apply knowledge of research ethics principles and processes to their own research proposal 2. Compare and contrast the similarities and differences between common qualitative, quantitative and mixed methods research methodologies 3. Evaluate the appropriateness of common qualitative, quantitative and mixed methods research methodologies and research design issues, both from a theoretical principles and applied construct 4. Recognise the differences between research questions and a testable hypothesis relevant to their discipline of study, and demonstrate understanding of the differences based on critical appraisal of current literature. 5. Further develop critical appraisal skills for both qualitative, quantitative and mixed methods research.
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topicstobecoveredinthesession (week): • Meaning of Research, Research Approaches, Significance of Research, Research Process, Criteria of Good Research
Session 2 (Week 2)	Assignment1handedout Topicstobecoveredinthesession (week) •Defining the Research Problem, Selecting the Research Problem, Necessity & Technique in defining the problem. Research Design: Developing a Research Plan.
Session 3 (Week 3)	Topics to be covered in the session (week) •Data Collection: Collection of primary data, observation method, interview method
Session 4 (Week 4)	Geriatric Conditions • Data Collection: data through questionnaires & schedules, collection of secondary data
Session 5 (Week 5)	Topicstobecoveredinthesession (week) •Data Collection: selection of appropriate method of data collection, guidelines for developing questionnaire,
Session 6 (Week 6)	Topicstobecoveredinthesession (week) •Data Collection: Survey vs. Experimental method



Session 7 (Week 7)	Topicstobecoveredinthesession (week) Processing & Analysis of data: Data analysis, Statistics
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topicstobecoveredinthesession (week) <ul style="list-style-type: none"> •Processing & Analysis of data: measures of central tendency, Dispersion, Asymmetry, Relationship, and Regression Analysis • Testing of Hypothesis: Parametric tests, Non Parametric tests (Distribution free tests), Design & Analysis of Experiments. • Ethical Concepts in Research • Role of Computer in Research
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Therapeutic Testing & Measurement

1	Course name	Therapeutic testing & measurement
2	Course Code	PT205
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st subjects to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description: Effective measurement of clinical outcomes is dependent on reliable outcome instruments. Measurement error and reliability testing are



	fundamental underpinnings of reliability. This article defines and illustrates sources of measurement error, outlines strategies for error minimization, and gives an overview of the types of reliability studies
Textbooks required for this Course:	Barrow, H. M., & McGhee, R. (1997). A practical approach to measurement in physical education. Philadelphia: Lea and Febiger .Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi: D.V.S. Publications. Mathews, D.K., (1973). Measurement in physical education, Philadelphia: W.B. Saunders Company. Phillips, D. A., & Hornak, J. E. (1979). Measurement and evaluation in physical education. New York: John Willey and Sons.
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	The student should be able to: 1. Use the appropriate measurement physiotherapy tool during the assessment process. 2. Use the appropriate measurement physiotherapy tool during the re-assessment process. 3. practice all the previous using an evidence-based practice protocol
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Introduction to Test, Measurement & Evaluation • Meaning of Test, Measurement & Evaluation in Physical Education • Need & Importance of Test, Measurement & Evaluation in Physical Education • Principles of Evaluation Unit-II Criteria: Classification and Administration of test.
Session 2 (Week 2)	• Criteria of good Test • Criteria for selection of a tests, scientific authenticity (reliability, objectivity, validity and availability of norms), Economy of tests,
Session 3 (Week 3)	Type and classification of Test • Administration of test, advance preparation–Duties during testing–Duties after testing. Unit- III Physical Fitness,
Session 4 (Week 4)	AAHPER youth fitness test, • JCR test, Indiana Motor Fitness Test
Session 5 (Week 5)	Methney & Johnson General motor Educability test
Session 6 (Week 6)	Unit- IV Sports Skill Tests • Lockhart & McPherson badminton test, Miller wall volley test
Session 7 (Week 7)	• Johnson basketball test, Knox test McDonald soccer test,
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Motor Fitness & General motor Educability Tests & Other Tests • Brady volleyball test, Russel Lange volleyball test • Harbans Singh Hockey test • Henry Friedel Field Hockey test • Kraus-Weber muscular test. • Stork Balance Test

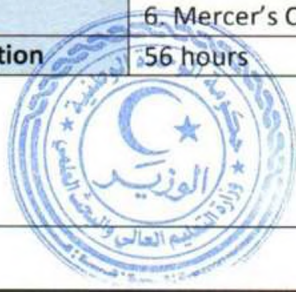


	<ul style="list-style-type: none"> • Yo-Yo Test • Johnson soccer test
(Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Physiotherapy for Internal Medicine

1	Course name	Physiotherapy for Internal medicine
2	Course Code	PT305
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	All 1 st & 2 nd subjects to pass max. 2subjects for reset.
7	Program offered the course	Physiotherapy Department
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course must promote the capability of the student to describe Etiology, Pathophysiology, Signs & Symptoms & Management of the various Endocrinal, Metabolic, Geriatric & Nutrition Deficiency conditions
Textbooks required for this Course:	<ol style="list-style-type: none"> 1. Outline of Fractures 8th edition - Adams 2. Outline of Orthopedics 8th edition - Adams 3. System of Ortho - Apley 4. Essentials of Orthopedics for Physiotherapists- John Ebnezar 5. Essential Orthopedics – Maheshwari. 6. Mercer's Orthopedic Surgery- Duthie, R.B. & Bently G
Course Duration	56 hours



Delivery	Lecture-based, Group interaction and discussion, self-directed activities, Laboratory experiments.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Demonstrate knowledge, clinical and technical skills and decision-making capabilities pertinent • management of patients with medical problems • Evaluate and manage common medical conditions in order to provide appropriate preoperative care to surgical patients who happen to have medical co-morbidities
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topicstobecoveredinthesession (week): i) Diabetes. ii) Thyroid. iii) Calcium Metabolism, Disorders of Cerebellar function,
Session 2 (Week 2)	Assignment1handedout Topics to be covered in the session (week) pituitary & Adrenal conditions, Epilepsy, Tetanus, Disorders of Cranial Nerves & Special Senses
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Degenerative / Rheumatological Conditions: i) Rheumatoid Arthritis, ii) Osteo Arthritis
Session 4 (Week 4)	Geriatric Conditions i) Aging Process, ii) Osteoporosis iii) General Health Care, Wellness clinic, Alzheimer's disease
Session 5 (Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Nutrition Deficiency Diseases, Drug Abuse / Intoxication / HIV
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Geriatric Conditions, i) Aging Process, ii) Osteoporosis, iii) General Health Care, Wellness clinic, Alzheimer's disease.
Session 7 (Week 7)	Topics to be overed in the session (week) Cerebro-vascular accidents – Thrombosis, Embolism, Haemorrhage, Extra Pyramidal lesions – Basal Ganglia, Parkinsonism
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)- Session 14 (Week 14)	Topics to be covered in the session (week) Evaluation & presentation of Two cases Each in i) U.M.N.lesion. ii) L.M.N.lesion iii) Respiratory Condition. iv) Cardio Vascular Condition
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives,



	including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



6- قسم الصحة العامة



Anatomy

1	Course name	Anatomy
2	Course Code	PH202
3	Course type: general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<p>anatomy is a field in the biological sciences concerned with the identification and description of the body structures of living things. Gross anatomy involves the study of major body structures by dissection and observation and in its narrowest sense is concerned only with the human body. "Gross anatomy" customarily refers to the study of those body structures large enough to be examined without the help of magnifying devices. In contrast, microscopic anatomy is concerned with the study of structural units small enough to be seen only with a light microscope. Dissection is fundamental to all anatomical research. The Greeks made the earliest record of its use, and Theophrastus called dissection "anatomy," from ana temnein, meaning "to cut up."</p> <p>Comparative anatomy, the other major subdivision of the field, compares similar body structures in different species of animals in order to understand the adaptive changes they have undergone in the course of evolution.</p>
Textbooks required for this Course:		Book Title & AITBS: Anatomy and Physiology Additional Resources: 1 st addition
Course Duration		56 / hours
Delivery		Group interaction and discussion during the lecture and practical programs by visual projectors, laboratories and classrooms.
Course Objectives:		<p>The student should be able to:</p> <ol style="list-style-type: none"> Describe the general structure of a bone and list the functions of its parts. Distinguish between intramembranous and endochondral bones and explain how such bones develop and grow. Describe how connective tissue is included in the structure of skeletal muscle Name four types of neurological cells and describe the functions of each. Distinguish between endocrine and exocrine glands. Name the organs of the urinary system and list their general functions. Name the parts of the male reproductive system and describe the general functions of each part. List the general functions of the respiratory system.



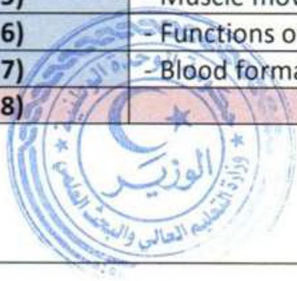
Course Assessments	Assignment 1: 40% Final Exam: 60% 60 % is required for a pass in this cours
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to anatomy
Session 2 (Week 2)	Systematic of anatomy
Session 3 (Week 3)	- systems and part of body -directional of anatomy
Session 4 (Week 4)	- organization of the body
Session 5 (Week 5)	- skeletal system
Session 6 (Week 6)	- muscular system
Session 7 (Week 7)	- respiratory system
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	- digestive system
Session 10 (Week 10)	- Cardiovascular system
Session 11 (Week 11)	- excretory system
Session 12 (Week 12)	- nervous system
Session 13 (Week 13)	- endocrine system
Session 14 (Week 14)	- reproductive system
Session 15 (Week 15)	- senses of organ
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arrive on time, return from breaks promptly, and remain until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. The timetable may also be revised.

Physiology

1	Course name	Physiology
2	Course Code	PH202
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	
5	Educational hours	



6	Pre-requisite requirements	Anatomy
7	Program offered the course	Health sciences
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Physiology is the study of how the human body works. It describes the chemistry and physics behind basic body functions, from how molecules behave in cells to how systems of organs work together. It helps us understand what happens in a healthy body in everyday life and what goes wrong when someone gets sick. Most of physiology depends on basic research studies carried out in a laboratory. Some physiologists study single proteins or cells, while others might do research on how cells interact to form tissues, organs, and systems within the body. While human anatomy is the study of the body's structures, physiology is the study of how those structures work. An imaging scan like an X-ray or ultrasound can show your anatomy, but doctors use other tests -- like urine and blood tests or electrocardiograms (EKGs) - to reveal details about your body's physiology. Doctors use physiology to learn more about many different organ systems.
Textbooks required for this Course:		Book Title & AITBS: Anatomy and Physiology Additional Resources: 1 st addition
Course Duration		56 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		The student should be able to: 1. Provide a course of study in mammalian, principally human, systems physiology, building on knowledge of basic physiological principles established in the Part IA Physiology of Organisms course; 2. Expand on some areas touched on in 1A Physiology of Organisms and to introduce new and more complex physiological functions; 3. Develop further practical biological skills introduced in 1A Physiology of Organisms; 4. Prepare students for a number of Part II Natural Science courses, principally Physiology, Development & Neuroscience, but also Pharmacology, Pathology and Zoology, among others.
Course Assessments		Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown		Topics Coverage
Session 1 (Week 1)		Introduction to Physiology
Session 2 (Week 2)		-Tissue-formation-repair
Session 3 (Week 3)		- Membranes & glands – functions
Session 4 (Week 4)		- Bones – Functions and movements of the axial and appendicular skeleton, bone healing
Session 5 (Week 5)		- Muscle movements, Muscle tone, Physiology of muscle contraction
Session 6 (Week 6)		- Functions of the brain, spinal cord, renal and spinal nerves
Session 7 (Week 7)		- Blood formation, composition, blood groups, blood coagulation
Session 8 (Week 8)		Midterm Exam



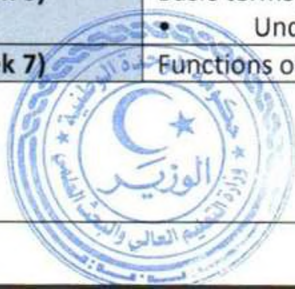
Session 9 (Week 9)	- Functions of respiratory organs
Session 10 (Week 10)	- Exchange of gases in tissues
Session 11 (Week 11)	- Metabolism of carbohydrates. Protein and fat
Session 12 (Week 12)	- Functions of kidneys, ureters, urinary bladder & urethra
Session 13 (Week 13)	- Functions of skin, eye, ear, nose, tongue.
Session 14 (Week 14)	- Functions of Pituitary, pineal body, thymus, thyroid, parathyroid, pancreas, Suprarenal, Placenta and ovaries & Testes
Session 15 (Week 15)	- Functions of female reproductive organs; Functions of the breast, female sexual cycle.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arrive on time, return from breaks promptly, and remain until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. The timetable may also be revised.

Basic Healthy Nutrition

1	Course name	Basic Healthy Nutrition
2	Course Code	PH305
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Biochemistry
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course introduces general nutritional concepts in health and disease and includes practical applications of that knowledge. Special emphasis is given to nutrients and nutritional processes including functions, food sources, digestion, absorption, and metabolism. Food safety, availability, and nutritional information including food labels,



	<p>advertising, and nationally established guidelines are addressed. This course fulfills the Life and Physical Sciences foundational component area of the core and addresses the following required objectives</p> <ol style="list-style-type: none"> 1. Apply nutritional knowledge to analyze personal dietary intakes, to plan nutritious meals using nationally established criteria to meet recommended goals, and to evaluate food labels and the validity of nutritional claims. 2. Trace the pathways and processes that occur in the body to handle nutrients and alcohol through consumption, digestion, absorption, transport, metabolism, storage and waste excretion. 3. Discuss functions, sources, deficiencies, and toxicities of macro- and micronutrients, including carbohydrates, lipids, proteins, water, vitamins, and minerals. 4. Apply the concept of energy balance and its influences at the physical, emotional, societal, and cellular level to evaluate advantages and disadvantages of various methods used to correct energy imbalances
Textbooks required for this Course:	<ol style="list-style-type: none"> 1. Nutrition in the community- A textbook, Sharma S, Wadhwa, 2003 2nd Edition, Publishing House Pvt. Ltd, India 2. Krause's Food & Nutrition Therapy, L. Kathleen Mahan Sylvia Escott-Stump ,13th Edition, Saunders, Washington 3. Understanding Normal and Clinical Nutrition, Sharon Rady Rolfes Kathryn Pinna Ellie Whitney, 9th Edition, Brooks ole USA 4. Human Nutrition and Dietetics, J. S. Garrow W. P. T. James A. Ralph, 10th Edition, Churchill Livingstone USA
Course Duration	28 hours
Delivery	Lecture-based, Group interaction and discussion
Course Objectives:	<ol style="list-style-type: none"> 4. Understand the harmful effects of unhealthy and inappropriate eating and compare the roles of different macronutrients in the diet. 5. Understand the relationship between nutrition and human health. 6. The role of nutrition in maintaining the health of the body and how the body deals with nutrition in a balanced manner to maintain health
Course Assessments	<p>Assignment1: 30%.</p> <p>Assignment2:10%</p> <p>Final Exam: 60%</p> <ul style="list-style-type: none"> • 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction of Nutrition (vitamins and minerals, water),
Session 2 (Week 2)	•food pyramid and importance and of nutrition factors
Session 3 (Week 3)	•chemical structure, classification, functions, sources,
Session 4 (Week 4)	Recommended daily intake values, overdose and toxicities. Food Pyramid
Session 5 (Week 5)	Basic concepts in food and nutrition
Session 6 (Week 6)	Basic terms used in study of food and nutrition
Session 7 (Week 7)	<ul style="list-style-type: none"> • Understanding relationship between food, nutrition and health Functions of food-Physiological, psychological and social



	Nutritional processes including functions,
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	food sources, digestion, absorption, and metabolism
Session 10 (Week 10)	Nutrients Functions, dietary sources and clinical manifestations of deficiency/ excess of the following nutrients <ul style="list-style-type: none"> • Carbohydrates, lipids and proteins
Session 11 (Week 11)	Fat soluble vitamins-A, D, E and K <ul style="list-style-type: none"> • Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C • Minerals – calcium, iron and iodine.....
Session 12 (Week 12)	Nutrition during Lifecycle Physiological considerations and nutritional concerns for the following life stages: <ul style="list-style-type: none"> • Adult man / woman • Preschool children
Session 13 (Week 13)	<ul style="list-style-type: none"> • Adolescent children • Pregnant woman • Nursing woman and infant
Session 14 (Week 14)	Nutrition during childhood <ul style="list-style-type: none"> • Growth and development, growth
Session 15(Week 15)	reference/ standards, RDA, nutritional guidelines, nutritional concerns and healthy food choices
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • Identify the six classes of nutrients and their primary function • Construct a meal plan that meets nutritional guidelines • Recognize the cause of various nutritional diseases.
Course Change	At the end of the program, the student will be familiar with the basics of proper nutrition, the damages caused by improper nutritional programs, and the relationship between chronic diseases and nutritional programs. And the student gained a scientific base on which to build on the rest of the relevant programs

Histology

1	Course name	Histology
2	Course Code	PH203
3	Course type: general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	Biology

7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:	1. Introducing histology and its relationship to other biology sciences. 2. Studying the structure of the cell and its types, knowing the functions of the organelles inside the cell, and studying the cell's divisions and types 3. A study of the different types of tissues and an explanation of each type, its divisions, its composition and its locations.	
Textbooks required for this Course:	1. Basic Histology, Anthony L Mescher, 4 th Edition 2. Atlas of Human Histology, Robert L. Sorenson, Second Edition 3. Human Histology, Yogesh Ashok Sontakke	
Course Duration	56 hours An additional 10 to 15 hours of homework per day is expected during this course.	
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.	
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand body tissues and know their structure and function. • Identify the locations of each tissue in the human body. • Recognize the different types of body tissues and differentiate between them. • Recognize different compositions of the different body tissues • Construct idea for the student about the different tissues that make up the human body and how they work. • Write a report on what the student understood through his/her study of the course • Develop the student's knowledge about the different tissues, their structure and their locations. 	
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.	
Content Breakdown	Topical Coverage	
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to histology <ul style="list-style-type: none"> ✓ Introducing tissue science, its genesis, and its relationship to other sciences 	
Session 2 (Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Cell structure <ul style="list-style-type: none"> ✓ Study the components of the cell and know their various functions. 	
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Cell division <ul style="list-style-type: none"> ✓ Study the different types of cell division. ✓ Study the stages of each type of cell division. 	
Session 4 (Week 4)	Topics to be covered in the session (week)	



	<ul style="list-style-type: none"> • Epithelial tissue <ul style="list-style-type: none"> ✓ General characteristics of epithelial tissue. ✓ Types of epithelial tissue. ✓ Functions of epithelial tissue.
Session 5 + 6 (Week 5+ 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Connective tissue <ul style="list-style-type: none"> ✓ General characteristics of connective tissues and their classifications. ✓ Study the structure of connective tissues (cells, intercellular substance and fibers)
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Cartilage <ul style="list-style-type: none"> ✓ Study the general characteristics of cartilage, their types and structures. • Bone <ul style="list-style-type: none"> ✓ Study of the general characteristics of bones, their types and structures • Blood <ul style="list-style-type: none"> ✓ Studying the different components of blood
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Muscle tissue <ul style="list-style-type: none"> ✓ General characteristics of muscle tissue. ✓ Types of muscle tissue ✓ Functions of muscle tissue • Nervous tissue <ul style="list-style-type: none"> ✓ General characteristics of nervous tissue. ✓ Types of nervous tissue and its structure. ✓ Functions of nervous tissue.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Medical Microbiology 1

1	Course name	Medical Microbiology 1
2	Course Code	PH300
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	Microbiology
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Understand the relationship between microorganisms and infectious diseases Knowing the mechanisms of immunity and the body's defense against, microbial invasion Understand the ways to control infections and pandemics that may occur in the community, Differentiate between the types of microbes that cause infection and understand the mechanisms of their transmission and spread in society
Textbooks required for this Course:		Essentials of Medical Microbiology, 4 th Edition Medical Microbiology, 10 th Edition
Course Duration		56 hours An additional 10 to 15 hours of homework per day is expected during this course.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand the relationship between microbes, methods of prevention and methods of prevention and control. • Identify the ways of transmission of infection to infection and its spread in the community. • Recognize the different types of microbes that cause infection. • Recognize the differences between bacterial, fungal and viral infections and how to deal with and control them. • Construct idea for the student about the different types of microbes that cause infection and ways of transmission and reproduction. • Write a report on what the student understood through his/her study of the course • Develop the student's knowledge about the mechanisms of defense and immunity in the body and the mechanisms of protective reinforcement against microbial infections such as different vaccines.
Course Assessments		Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.



Content Breakdown	Topics Coverage
(Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to medical microbiology General review and introduction to medical microbiology
(Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Cell structure The relationship between the microbes and diseases and the evolution of microbiology
(Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • The most important scientists contributing to the development of medical microbiology and their achievements.
(Week 4)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • The concept of immunity and the body's immune mechanisms in fighting microbial infection
(Week 5+ 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Categories of microbes from a medical point and the differences between them.
(Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Bacterial cell structure, shapes, and associated pathogenicity factors
(Week 8)	Midterm Exam
(Week 9) & (Week 14)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • The main types of Gram-positive bacteria that cause infection in humans • The most important types of negative bacteria that cause infection in humans • The most important other bacterial species that cause infection in humans
(Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medical Microbiology 2



1	Course name	Medical Microbiology 2
2	Course Code	PH300

3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	Medical Microbiology 1
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<ol style="list-style-type: none"> 1. Study and understand the meaning of fungal infection and associated diseases 2. Studying and understanding viral infections, their mechanisms, and the differences between them and bacterial and fungal infections. 3. Understand the mechanisms of immunity against viral infections and the differences between them and immunity against fungal and bacterial infections. 4. Study and understand the most important fungal and viral diseases and ways of transmission, treatment and control.
Textbooks required for this Course:		<ul style="list-style-type: none"> • Essentials of Medical Microbiology, 4th Edition • Essentials of Medical Microbiology, 10th Edition
Course Duration		56 hours.
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand the structure of the fungal and viral cells and the division of infectious fungi and the most important types. • Identify the different methods of isolating and developing pathogenic fungi and viruses and methods of diagnosing them. • Recognize the infectious fungal and viral diseases, their symptoms, methods of treatment, and how to control their spread in society. • Recognize the skin and systemic fungal diseases and ways of treating and preventing them. • Construct idea for the student about the different types of fungi and viruses that cause infection and ways of transmission and reproduction. • Write a report on what the student understood through his/her study of the course • Develop the student's knowledge about the mechanisms of defense and immunity in the body and the mechanisms of protective reinforcement against fungal and viral infections.



Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) • Introduction to medical microbiology 1 ✓ General review and introduction to medical microbiology
Session 2 (Week 2)	Topics to be covered in the session (week) • The structure of the fungal cell, its characteristics, the methods of reproduction of fungi and its divisions.
Session 3 (Week 3)	Topics to be covered in the session (week) • Methods of transmission of pathogenic fungi to humans and the role of the immune system in combating fungal infection
Session 4 (Week 4)	Topics to be covered in the session (week) • The main types of fungi that cause infection and their divisions
Session 5 (Week 5+ 6)	Topics to be covered in the session (week) • Methods of controlling fungal infection and controlling its spread in society.
Session 7 (Week 7)	Topics to be covered in the session (week) • A general introduction to viruses, their composition, and the most important differences between them and bacteria and fungi
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Topics to be covered in the session (week) • The mechanisms of transmission of infectious viruses to humans and the role of the immune system in resisting viral infection • The most important viral infectious diseases (RNA viruses) • The most important viral infectious diseases (DNA viruses)
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will



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مدخل الصحة العامة

1	اسم المقرر الدراسي	مدخل الصحة العامة
2	رمز المقرر	PH201
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	4
5	ساعات التعليم	4
6	المتطلبات المطلوبة مسبقا	--
7	البرنامج المقدم للدورة	الصحة العامة
8	لغة التدريس	اللغة العربية واللغة الإنجليزية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	تزويد الطالب بالمعلومات عن الخاصة الصحة العامة وطرق المحافظة علي صحة الفرد والمجتمع وعلاقتها بانتشار الامراض والابوئة وعلاقة الصحة العامة بباقي قروء العلم الطبي والاداري والتقني فترة انتشار الامراض الابوئة والامراض المعدية والمنظمات الصحية العالمية والسياسات الصحية الدولية والمحلية.
الكتب المقررة	عنوان الكتاب المقرر و ISBN:Public-Health-The-Basics - قاموس الصحة العامة الأساسية- مقدمة في الصحة والتغذية- منشورات منظمة الصحة العالمية في البرنامج الخاص بالصحة العامة. موارد إضافية: يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر اربع ساعات اسبوعيا بمجموع اجمالي طيلة فترة الدورة (56 ساعة)
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.... إلخ
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: <ul style="list-style-type: none"> تذكر تعريفات الصحة العامة ومستوياتها تعدد القواعد الصحية للحفاظ على البيئة. تعرف على الامراض المعدية ومسبباتها وطرق الوقاية منها. الإلمام بالمشكلات الصحية واهميه التطعيمات تناقش الفرق بين المناعة الطبيعية والمكتسبة وعلاقة المناعة ببعض الامراض. تعرف على المبادئ الاساسية لبرنامج الإصلاح الصحي والنهوض بالصحة العامة.
طريقة التقييم	<ul style="list-style-type: none"> الامتحان النصفى 40% الامتحان النهائي 60% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> مقدمة والتعريف بالمقرر. مبادئ الصحة العامة
الأسبوع الثاني	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> الإنسان والصحة: تطور المعرفة حول الصحة - التاريخ والصحة الفرق بين الصحة والمرض: - ما هي الصحة والمرض - كيف يحدث المرض. تدرج الحالات الصحية.
الأسبوع الثالث	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> العوامل المؤدية إلى اعتلال الصحة (المرض): - العوامل الكيميائية - العوامل الفيزيائية - العوامل الحيوية.

	<ul style="list-style-type: none"> مستويات الصحة العامة.
الأسبوع الرابع	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع الأنشطة الصحية: تعزيز الصحة - الوقاية - استعادة الصحة - التعويض الصحي المفقود
الأسبوع الخامس	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع أبعاد الصحة العامة والعوامل المؤثرة عليها الخدمات الصحية: - وقائية - طبية - تأهيلية - خدمات صحية عامة.
الأسبوع السادس	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع وسائل الصحة العامة: - الوقاية - التغذية - الإصحاح البيئي - التثقيف الصحي - البحوث والدراسات.
الأسبوع السابع	<ul style="list-style-type: none"> الصحة العامة للمجموعات الخاصة: - صحة الأطفال (المدرسة). - صحة المراهقين. - صحة المسنين والعجزة. - الأمومة والطفولة.
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع. طب الأسرة ودوره في توطيد برامج الصحة العامة.
الأسبوع العاشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع الثقافة الصحية ومفهوم علم الصحة وواجباته
الأسبوع الحادب عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع التربية الصحية وأهدافها
الأسبوع الثاني عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع الحفاظ على الصحة ومكافحة الأمراض المعدية والوقاية منها.
الأسبوع الثالث عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع برامج الصحة العامة وإدارتها.
الأسبوع الرابع عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الأسبوع التخصصات الرئيسية في الصحة العامة. مصطلحات الصحة العامة الأساسية
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي و صدور الموافقة من مجلس القسم العلمي.

Epidemiology-1

1	Course name	Epidemiology-1
2	Course Code	PH204
3	Course type: /general/specialty/optional	Specialty



4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Public health, histology
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Epidemiology we are divided in to two. The aim of this course is to give students grounding in the basic concepts of epidemiology. Students will gain knowledge about: measuring and interpreting patterns of disease occurrence; routine sources of data, their strengths and limitations; study designs used in epidemiology and when to apply them; epidemiological models of causation; and will begin to critically appraise epidemiological literature with reference to issues of study design and interpretation of results
Textbooks required for this Course:		<p>1. Aschengrau A & Seage GR. Essentials of Epidemiology in Public Health. 3 rd Edition (2014).</p> <p>2. Additional required readings will be assigned to supplement the main textbook or as part of various homework assignments; a list of these is provided on the next page. Readings that are published, journal articles can be accessed via the NYU Library's journal access that is located under the Research tab of NYUHome. I also reserve the right to add readings during the course of the semester as appropriate.</p> <p>Additional resources:</p> <p>1. A good online text: Principles of Epidemiology: An Introduction to Applied Epidemiology and Biostatistics. Second Edition. It is available at: http://www.phppo.cdc.gov/PHTN/catalog/pdf/Epi_Course.pdf</p> <p>2. Epidemiology, the Internet and Global Health. An online compilation of hundreds of lectures on a wide variety of topics; I would recommend this site to anyone interested in further reading on a specific subject area. The site can be accessed at http://www.pitt.edu/~super1/</p>
Course Duration		28 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<ol style="list-style-type: none"> 1. Explain the role of epidemiology in the field of public health. 2. Describe and calculate epidemiological measures used to define and quantify health problems in and across defined populations. 3. Describe the range of epidemiologic study designs used to examine the health status of a population and be able to evaluate the strengths and limitations of each 4. Identify and describe the impact of bias and confounding in epidemiologic studies 5. Understand the concepts of screening and testing in a range of health and other settings. 6. Understand and apply epidemiological criteria needed to establish causal relationships.



	<p>7. Understand and apply key ethical issues to the conduct of epidemiological and other scientific investigations.</p> <p>8. Critically read and evaluate epidemiologic studies in the medical or public health literature.</p>
Course Assessments	<p>Assignment1: 30%.</p> <p>Assignment2:10%</p> <p>Final Exam: 60%</p> <ul style="list-style-type: none"> • 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
(Week 1)	<p>Definition of Epidemiology</p> <p>Historical of Epidemiology</p>
(Week 2)	<p>Uses of epidemiology</p> <p>Core Epidemiologic Functions</p>
(Week 3)	<p>The Epidemiologic Approach</p> <p>Defining health and disease</p>
(Week 4)	<p>Diagnostic criteria</p> <p>Measuring disease frequency</p>
(Week 5)	Descriptive Epidemiology
(Week 6)	Analytic Epidemiology
(Week 7)	<p>Concepts of Disease Occurrence</p> <p>Natural History and Spectrum of Disease</p>
(Week 8)	Midterm Exam
(Week 9)	Chain of Infection
(Week 10)	Epidemic Disease Occurrence
(Week 11)	<p>Organizing Data</p> <p>Types of Variables</p>
(Week 12)	<p>Frequency Distributions</p> <p>Properties of Frequency Distributions</p>
(Week 13)	<p>Methods for Summarizing Data</p> <p>Measures of Central Location</p>
(Week 14)	Measures of Spread
(Week 15)	Choosing the Right Measure of Central Location and Spread
(Week 16)	Final Exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<ol style="list-style-type: none"> 1. Demonstrate ethical choices, values and professional practices implicit in public health decisions while considering the effect of choices on community stewardship, equity, social justice and accountability. 2. Gather, process, and present information to different audiences in-person, through information technologies, or through media channels.
Course Change	<p>Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of</p>



changes to students as soon as possible. Timetable may also be revised.

Epidemiology -2

1	Course name	Epidemiology -2
2	Course Code	PH204
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Knowledge of public health, infectious disease, medical microbiology
7	Program offered the course	public health
8	Instruction Language	English language
9	Date of course approval	2022
Brief Description:		This is an introductory course epidemiology -2 , in the basic study of the risk factors for disease in populations. The emphasis of the course is to understand the methodology of the public health research, and how evidence-based medicine is used to determine optimal treatment in approaches to clinical practice. The course provides instruction in both observational and structured methodologies often used in epidemiological research.
Textbooks required for this Course:		<ol style="list-style-type: none"> 1. Friis, Robert H. Epidemiology 101, 2 nd edition. ISBN: 978-0763754433 (Optional) 2. Additional readings will be assigned on a per lecture basis; Preliminary reading list given at the end of syllabus and is subject to change 3. Cougar courses will be used to manage course content 4. Hernan M, Robins J: Part I, Part II, chapter 16, https://www.hsph.harvard.edu/miguel-hernan/causal-inference-book/ 5. Rothman K, Greenland S and Lash (2012): Chapter 2, 3, 5-10 in Modern epidemiology
Course Duration		28 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<ol style="list-style-type: none"> 1. Define Epidemiology and be able to discuss the evolution of the field. 2. Understand the current role of Epidemiology as an approach to addressing public health problems. 3. Describe the historical background of Epidemiology and identify key figures that were influential in the field. 4. Describe epidemiological approaches to defining and measuring health problems in defined populations. 5. Calculate various Epidemiologic measurements and understand their applications to determining risk of morbidity and mortality. 6. Identify research designs used in Epidemiology and demonstrate application of how studies are designed to solve Public Health problems.



	<p>7. Identify and understand the role of epidemiology in preventive medicine and disease investigation.</p> <p>8. Explain how Epidemiologic methods are used to evaluate new drugs and other therapeutic modalities, the benefits of screening and early disease detection, and alternative ways of improving health.</p> <p>9. Learn ethical principles as they relate to conducting population health research.</p> <p>10. Critically review and interpret peer-reviewed epidemiologic research studies.</p>
Course Assessments	<p>Assignment1: 30%.</p> <p>Assignment2:10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Measures of Risk Frequency Measures
Session 2 (Week 2)	Morbidity Frequency Measures
Session 3 (Week 3)	Mortality Frequency Measures
Session 4 (Week 4)	Natality (Birth) Measures
Session 5 (Week 5)	Measures of Association
Session 6 (Week 6)	Displaying Public Health Data Tables Graphs
Session 7 (Week 7)	Other Data Displays Types of epidemiological studies
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Public Health Surveillance
Session 10 (Week 10)	Purpose and Characteristics of Public Health Surveillance
Session 11 (Week 11)	Identifying Health Problems for Surveillance
Session 12 (Week 12)	Identifying or Collecting Data for Surveillance
Session 13 (Week 13)	Analyzing and Interpreting Data
Session 14 (Week 14)	Disseminating Data and Interpretations
Session 15 (Week 15)	Evaluating and Improving Surveillance
Session 16 (W16)	Final Exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed.</p> <p>Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<ul style="list-style-type: none"> critical evaluation of the context of general practice of community critical introspection to gain an understanding of personal knowledge, experience and values that influence the way community people <p>The patterns of disease and injury in human populations and apply to the control of health problems for community</p>



Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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الصحة المدرسية:

1	اسم المقرر الدراسي	الصحة المدرسية
2	رمز المقرر	PH302
3	نوع المقرر الدراسي: عام/ تخصص/ اختياري	تخصص
4	الوحدات المعتمدة	3
5	ساعات التعليم	4
6	المتطلبات المطلوبة مسبقا	مكافحة امراض مزمنة
7	البرنامج المقدم للدورة	الصحة العامة
8	لغة التدريس	اللغة العربية واللغة الإنجليزية
9	تاريخ الموافقة على المقرر	2022
	وصف موجز للمقرر	ستزود هذه الدورة الطلاب بفهم أساسي: <ul style="list-style-type: none"> • الصحة المدرسية وعلاقتها بالصحة العامة. • معرفة وتحديد السبب الاساسي للاهتمام بهذه الشريحة. • تعريف الطالب بالتطور العالمي الحاصل في مجال الصحة المدرسية (المدارس المعززة للصحة).
	الكتب المقررة	عنوان الكتاب المقرر و ISBN:مدخل الصحة المدرسية - منشورات منظمة الصحة العالمية في البرنامج الخاص بالصحة المدرسية موارد إضافية: يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
	المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر اربع ساعات اسبوعيا بمجموع عام طلية الدورة (56)ساعة.
	طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.
	أهداف المقرر	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: <ul style="list-style-type: none"> ▪ فهم علاقة الصحة المدرسية بالصحة العامة وإعطاء الطالب فكرة عن ذلك. ▪ تحديد لماذا الاهتمام بهذه الشريحة . ▪ التعرف على المشكلات الصحية الشائعة بي الطلبة. ▪ تحديد المشكلات الغذائية في المرحلة الدراسية وكيفية التعامل معها. ▪ لتعرف على بيئة وبنية المدرسة الصحية وملحقاتها. ▪ كتابة مجموعة من التقارير عن الوضع الصحي في بيئة الطالب. ▪ تطوير المنهج الدراسي وفق التطور العلمي في هذا المجال. ▪ تنفيذ مجموعة من حملات التوعية في مجال الصحة المدرسية.
	طريقة التقييم	<ul style="list-style-type: none"> • الامتحان النصفي 40% • الامتحان النهائي 60% • درجة النجاح: 60%
	محتويات المقرر	محتوى المقرر الدراسي
	الأسبوع الأول	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> • مقدمة والتعريف بالمقرر
	الأسبوع الثاني	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ الصحة المدرسية وعلاقتها بالصحة العامة. ▪ مفاهيم اساسية في الصحة المدرسية (أهدافها - مجالاتها) ▪ خدمات الصحة المدرسية أسباب الاهتمام بالصحة المدرسية

المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث
<ul style="list-style-type: none"> البيئة الصحية المدرسية. (البيئة الخارجية - البيئة الداخلية) المبنى المدرسي (الشكل - الفصول - الملحقات). 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع
<ul style="list-style-type: none"> التغذية الصحية وسلامة الغذاء. الصحة النفسية والإرشاد والدعم الاجتماعي لطلبة المدارس (الأمراض النفسية والعصبية). 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الخامس
<ul style="list-style-type: none"> مشاركة الأسرة والمجتمع في برامج الصحة المدرسية (التربية الصحية) تعزيز صحة طالب مؤسسات التعليم العالي ومكافحة الأنماط غير الحياتية 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السادس
<ul style="list-style-type: none"> صحة المراهقين والشباب. تعزيز صحة العاملين 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السابع
<ul style="list-style-type: none"> اللجان المشتركة للصحة المدرسية. الفريق الصحي المدرسي. 	
الامتحان النصفى	
المواضيع التي سيتم تغطيتها في الأسبوع.	الأسبوع الثامن
<ul style="list-style-type: none"> المشكلات الصحية الشائعة بين التلاميذ 	الأسبوع التاسع
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع العاشر
<ul style="list-style-type: none"> لتنقيف الصحي المدرسي. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الحادب عشر
<ul style="list-style-type: none"> الأمن و السلامة المدرسية تعريف ومفهوم. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثاني عشر
<ul style="list-style-type: none"> أمراض سوء التغذية لطلبة المدارس (السمنة- النحافة- فقر الدم) الأمراض المعدية. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث عشر
<ul style="list-style-type: none"> انتشار العادات الشخصية غير الصحية الحديثة وتأثيرها على الصحة العامة للطلبة. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع عشر
<ul style="list-style-type: none"> الاطفال المعاقين بالمدرسة وكيفية التعامل معهم . 	
الامتحان النهائي	
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الأسبوع الخامس عشر
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	الحضور والغياب
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي.	مهارات عامة
	التغيير والتعديل في المقرر الدراسي

Health Education

1	Course name	Health Education
2	Course Code	PH302
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2



6	Pre-requisite requirements	Epidemiology I
7	Program offered the course	Public Health
8	Instruction Language	English language
9	Date of course approval	2022
Brief Description:	This course will provide students with a fundamental understanding of the nature the term health, health education and wellness. Explain the important goal of health education. Identify health problems and discuss their impacts on the community. Define health education principles, theories, and concepts. Demonstrate Knowledge of common communicable disease and how they can be prevented. Illustrate methods that establish healthy community.	
Textbooks required for this Course:	Book Title & ISBN: principles of health education and health promotion, (2nd edition), j. Thomas butler, morton publishing company, englewood, colorado. Additional Resources: FOUNDATIONS OF HEALTH EDUCATION, R. M. Eberst, Editor, Coyote Press, San Bernardino: 1998-99. Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.	
Course Duration	28 hours	
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.	
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Define the term health, health education and wellness. · Explain the important goal of health education. · Identify health problems and discuss their impacts on the community. · Define health education principles, theories, and concepts. · Demonstrate Knowledge of common communicable disease and how they can be prevented. · Illustrate methods that establish healthy community. 	
Course Assessments	Assignment 1: 20% Assignment 2: 20% Final Exam: 60% A 60% is required for a pass in this course.	
Content Breakdown	Topics Coverage	
(Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to Health · Definition of Health. · Explaining factors influencing health. · Assessment of Health. 	
(Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Health Education & Awareness ● Definition of health education & awareness ● Purpose of Health Education Assignment 2 handed out	
(Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Health Education principles ● Define health education principles, theories, concepts, and practice. 	



(Week 4)	<p>Topics to be covered in the session (week)</p> <p>Interpersonal Communication skills</p> <ul style="list-style-type: none"> · Communication definition · Communication Concepts · Success factors of communication ● The role of communication programs.
(Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Elements of health education ● The health educator ● Message ● Receiver ● Media
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Determinants of learning ● The educator role in learning ● Development stages of learner ● Characteristics of the learner
(Week 7)	<p>Topics to be covered in the session (week)</p> <p>Learn about the audio-visual aids used in health education</p> <ul style="list-style-type: none"> ● Advantages ● Disadvantages
(Week 8)	Midterm Exam
(Week 9)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Technology in education ● Health education in the formation age. ● The impact of technology on health educator & learner.
(Week 10)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● The influence of culture, media, technology, and other factors on health ● identify and analyze external factors from media, parents, culture, peer, geographic, society and technology on people's health.
(Week 11)	<p>Topics to be covered in the session (week)</p> <p>Planning health education programs</p> <ul style="list-style-type: none"> · Learn about how to plan health education programs within community services. ● Identify goals, population of interest and objectives. ● Developing indicators ● Implementation and impact
(Week 12)	<p>Topics to be covered in the session (week)</p> <p>Evaluation in health education</p> <p>Learn how effective are you in achieving your objectives by determining of:</p> <ul style="list-style-type: none"> ● Process evaluation ● Impact evaluation ● Outcome evaluation
(Week 13)	<p>Topics to be covered in the session (week)</p> <p>Health Promotion</p> <ul style="list-style-type: none"> · Learn about health promotion origin · Definition



	<ul style="list-style-type: none"> · Implications · Health promotion actions
(Week 14)	Topics to be covered in the session (week) Health promotion <ul style="list-style-type: none"> · Health promotion principles and policies · Approaches to health
(Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Immunology

1	Course name	Immunology
2	Course Code	PH206
3	Course type: <i>/general/specialty/optional</i>	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Histology
7	Program offered the course	Public Health
8	Instruction Language	English language
9	Date of course approval	2022
Brief Description:		<ol style="list-style-type: none"> 1. study of the concept of immunology and the history of its inception with a detailed study of the structural and functional immune system and shedding light on its organs, cells, molecules and how they work.. 2. Studying the types of natural and acquired immunity and their subdivisions and understanding the different mechanisms of immune responses against microbial infections. 3. study of the structure, function and types of antibodies. 4. Understanding the working methods of vaccines and serums and an explanation of immune diseases and immune deficiency.



Textbooks required for this Course:	<ol style="list-style-type: none"> 1. Basic Immunology, Abul K. Abbas, MBBS, Andrew H. Lichtman, 5th Edition. 2. The Immune System, Paul Klenerman, 2017. 3. Introductory Immunology, Jeffrey K. Actor, 2014.
Course Duration	28 H
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand of immunology, the immune system and its structure. • Identification of the different types of immunity and differentiation between them. • Recognize of antibodies and vaccines, their composition and how they work. • Recognize the various structures of the immune system. • Construct idea about the mechanism of action of the immune system in the face of pathogens. • Writing a report on what the student understood through his study of the course. • Develop a students' knowledge about the immune response and the mechanism of action of vaccines.
Course Assessments	<p>Assignment1: 30%.</p> <p>Assignment2:10%</p> <p>Final Exam: 60%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
(Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to Immunology <ul style="list-style-type: none"> ✓ Defining Immunology and its related sciences ✓ Identify the types of microbes that the immune system attacks
(Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • The structure of the immune system
(Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • TYPES OF IMMUNITY: <ul style="list-style-type: none"> I- INNATE OR NATURAL IMMUNITY <ul style="list-style-type: none"> ✓ a) Mechanisms of innate immunity ✓ b) Physical and chemical Barriers ✓ c) Fever. ✓ d) Acute phase protein.
(Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Cells of Innate Immunity
(Week 5+ 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Inflammation : <ul style="list-style-type: none"> ✓ Causes of inflammation ✓ cardinal signs of inflammation ✓ Steps of inflammatory response ✓ Types of inflammation
(Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Cytokines:

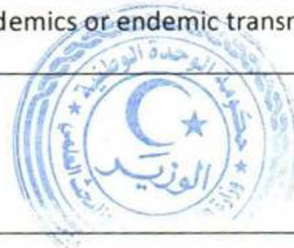


	<ul style="list-style-type: none"> ✓ Structure of cytokines ✓ Types of Cytokines
(Week 8)	Midterm Exam
(Week 9)&(Week 14)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • II- ACQUIRED OR ADAPTIVE IMMUNITY: <ul style="list-style-type: none"> ✓ General characteristics of acquired immunity ✓ Types of acquired immunity • Cellular Barriers of Innate Immunity • Structure of Antigen and Antibody • Vaccination (Immunizations) <ul style="list-style-type: none"> ✓ A- General introduction of vaccination ✓ B- The immune response: vaccination and infection ✓ C- Vaccine safety ✓ D- Types of vaccine
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Infectious disease

1	Course name	Infectious disease
2	Course Code	PH307
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	None
7	Program offered the course	public health
8	Instruction Language	English

9	Date of course approval	2022
Brief Description:	<p>The student will be provided with the presentation of this tutorial program for the primary methods of the basic methods of infectious disease and condition of the important disease syndromes and entities. The methods include definitions, naming, and investigations in the disease outbreaks of disease monitoring, studies, dust studies, laboratory diagnosis, molecular epidemics, transmission dynamics and evaluation of the effectiveness of the field of vaccine. Status studies focus on acute respiratory infections, diarrhea diseases, hepatitis, HIV, tuberculosis, sexually transmitted diseases, malaria, and other diseases transmitted by carriers.</p> <ul style="list-style-type: none"> • Describe the different stages of the relationship of the host's agent and its importance in the transmission dynamics. • Calculating and interpreting the metrics for the frequency of the disease and its association with infectious diseases, including attack rates, secondary attack rates, death rates in cases, and vaccine effectiveness, among other things. 	
Textbooks required for this Course:	<p>1. Required Text(s)</p> <ul style="list-style-type: none"> • Mim's Medical Microbiology. Richard V Goreing, 4th edition (2008); Publisher: Elsevier publications. • Ananthanarayanan R and CK Jayaram Panicker, 1994, Textbook of microbiology Orient Longman Medical Microbiology by Murray and others. Last Edition. Publisher: Mosby <p>2. Essential References</p> <ol style="list-style-type: none"> 1. Medical Microbiology by Jawetz, Melnick & Adelbergs. 2. Microbiology by Harvey, Champe and Fisher. Second Edition (2007) 3. Mackie and Mc catney, 1994, Medical Microbiology No I and II. Churchill Livingston, 14th edition. 4. Chakraborty P 1995, A Text book of microbiology, New Central Book Agency Pvt Ltd. 5. Bailey and Scotts, 1994, Diagnostic Microbiology, 9th edition, Baron and Finegold .CV Mosby Publications Name of the faculty: Dr.Mohamud ha Parveen Rahamathulla <p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p> <p>John G Holt et al. Bergey's Manual of Determinative Bacteriology. Maryland, Williams &</p> <ul style="list-style-type: none"> • Microbiology with diseases by Taxonomy. Robert W. Bauman, 3rd edition (2011); Publisher: Pearson Publications Th Journal of Infectious Diseases. Pub: The University of Chicago Press, 1998. Journal of Communicable Diseases, Pub : The Indian Society for Malaria and other communicable disease. 1999. 	
Course Duration	28 hours	
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation	
Course Objectives:	<ul style="list-style-type: none"> • Identify the main epidemiological characteristics of the Major infectious diseases of Humans • describe how these Epidemiological characteristics can be utilized to develop strategies to prevent epidemics or endemic transmission of the major infections of humans. 	



	<ul style="list-style-type: none"> List the criteria to be used in the investigation of a new Emerging or Re-emerging Infectious disease to understand the critical Epidemiologic features of this disease that could be used to develop prevention and control programs. Epidemiological characteristics such as Incubation period, Infectious period, means of transmission and reservoir of these infectious diseases will be evaluated Discuss details of disinfection, sterilization and hand washing techniques and types. evaluate strategies to prevent epidemics or endemic transmission of the major infections of humans
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Intro to Infectious Disease & Epidemiology - Early Epidemiology - Public health statistics and surveillance - Microorganisms and vaccines - Classification of Infectious Disease. General Principles of Epidemiology
Session 2 (Week 2)	Infectious Disease Dynamics – Determinants of epidemic growth - Elements of the course of infection - Host population and types of pathogens - Stochasticity and randomness
Session 3 (Week 3)	Microbiology and Molecular Epidemiology of Infectious Disease - Taxonomy, classification & structure - Viruses, bacteria, fungi Parasitology - Techniques of molecular epidemiology.
Session 4 (Week 4)	Sampling populations
Session 5 (Week 5)	Pathogen detection and immune response Immunology - Innate, adaptive & the essentials of inflammation.
Session 6 (Week 6)	. Immune activation & antigen binding - Cytokines, CD4. & Tolerance - Mucosal Immunity - Respiratory Immune Environment - Selective Immune Deficiencies
Session 7 (Week 7)	Outbreak investigation and molecular epidemiology. Global Epidemiology of Diarrheal Diseases Global Epidemiology of Tuberculosis Mathematical modeling
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Global Epidemiology of Meningococcal Infect. Epidemiologic study designs for ascertaining cause and effect associations between exposures and health outcomes

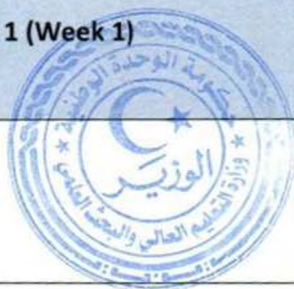


Session 10(week10)	- Vaccines: Past, Present, and Future - Types of Vaccines, Vaccine Development - Vaccine efficacy and vaccine effectiveness -Epidemiology & Control of Malarial
Session 11(week11)	Epidemiology, Microbiology. Pathology, and public health implications and challenges. regarding malaria. - Malaria Case Study
Session 12(week12)	Nutrition and infection -effect of infection on nutritional status
Session 13(week13)	effect of malnutrition on host defense -micro nutrient and immunity
Session 14 (Week 14)	The mango project -case study and application in Uganda
Session 15(week15)	Epidemiology and prevention of influenza Epidemiology and implication of measles
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • Utilize effective communication skills during work to enhance team work spirit. • Enhance life-long, self-directed working • Consider confidentiality during data management and work within legal aspect
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

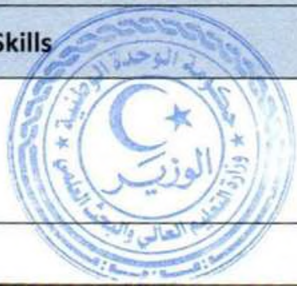
Chronic Diseases Control

1	Course name	Chronic Diseases Control
2	Course Code	PH306
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Infectious Diseases
7	Program offered the course	Public health
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	Overview of the epidemiology of chronic diseases, health problems and contemporary diseases patterns associated with industrialization, urbanization and development, general and specific preventive measures, control strategies and programs.
Textbooks required for this Course:	<p>Book Title & ISBN: Chronic Disease Epidemiology, Prevention, and Control The 4th edition of <i>Chronic Disease Epidemiology, Prevention, and Control</i> is timely during this era of transition and uncertainty and namely serves as a useful and informative guide to get us from where public health is to where public health needs to be.</p> <p><i>Chronic Disease Epidemiology and Control, Fourth Edition</i> provides an overview of current knowledge and best practices in the prevention and control of major chronic diseases and their risk factors. Chapter authors highlight many public health successes in which evidence-based interventions have resulted in improved health and the reduction or elimination of disparities. This book tackles some of the most important and vexing public health problems of our time, including how to cope with the rising tide of chronic illness.</p>
Course Duration	28 hours
Delivery	<p>Methods of study</p> <ol style="list-style-type: none"> 6. lectures 7. discussions 8. exercises 9. audio –visual aids 10. Field visits
Course Objectives:	<p>By the end of this course students will be able to:</p> <ol style="list-style-type: none"> 1. identify prevalent chronic diseases and health problems in the community 2. identify the social and economic implications of chronic health problems 3. identify risk factors associated with chronic health problems 4. summarize preventive and control measures and programs for chronic diseases and health problems
Course Assessments	<p>Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Unit one: introduction</p> <ol style="list-style-type: none"> 1. Definition and magnitude of chronic diseases 2. risk factors of chronic diseases 3. Environmental and ecologic factors of chronic diseases 4. social and economic effects and implications



Session 2 (Week 2)	Unit two: epidemiology, prevention and control of chronic diseases 1. risk factors of Chronic Diseases 2. Screening for Chronic Diseases 3. Diagnosis and case Detection 4. levels of prevention (primary, secondary and tertiary)
Session 3 (Week 3)	Unit three: Long term care of patients: 1. Comprehensive approach to chronic disease patient 2. Team work and continuity of caring for Patients 3. Family and community Support of patients
Session 4 (Week 4)	Unit Four: Chronic Diseases and Chronic health Problems To cover each of the following for each disease: 1. Epidemiology and magnitude of the problem 2. etiology and risk factors 3. screening and Diagnosis 4. prevention 5. management 6. social and economic implications for the problem
Session 5 (Week 5)	Chronic Diseases: 1. Cancers (Breasts, Lungs, Cervix) 2. Cardiovascular diseases
Session 6 (Week 6)	3. hypertension 4. Diabetes Mellitus
Session 7 (Week 7)	5. Musculoskeletal Disorders 6. Mental Health
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) & Session 14 (Week 14)	7. Dental Health 8. Nutritional problems 9. Substance Abuse (Drugs, Tobacco, Alcohol) 10. Motor Vehicle Accidents 11. Chronic Infectious Diseases (TB, Leprosy) 12. Site of learning: 13. college classrooms 14. Group Discussions 15. field visits
Practical Part:	1. Visit to Rehabilitation Center: a. Physiotherapy center b. Occupational therapy center c. Prosthesis and artificial limbs centers d. Renal dialysis centers e. Recognize the various patterns and degrees of disabilities and their causes, services provided, social and economic impact. f. Visit to Chest Hospital: recognize the common chronic chest diseases and their causes, recognize the services provided, recognize costs and social and disability impact.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full



	participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Parasitology

1	Course name	Parasitology
2	Course Code	PH200
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Public Health
8	Instruction Language	English language
9	Date of course approval	
Brief Description:		This course will provide students with a fundamental understanding of the nature of : Providing the student with information about parasites, their types, ways of transmission among their families, the types of diseases that infect humans, and ways to combat them and treat the diseases they cause.
Textbooks required for this Course:		Essential medical parasitology\ Apurba sankar LECTURE NOTES Degree and Diploma Programs For Health Science Students Medical Parasitology Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
Course Duration		56 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> Identify and daignose the Parasitological diseases of Humans.



	<ul style="list-style-type: none"> describe how these Parasitological diseases can be utilized to develop strategies to prevent epidemics or endemic transmission of the major infections of humans.
Course Assessments	Assignment1: 30%. Assignment2:10% Final Exam: 60% 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Introduction to parasitology
Session 2 (Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Amoebiasis: (Entamoeba Histolytica)
Session 3 (Week 3)	Topics to be covered in the session (week) <p>Pathogenic Flagellates (Giardia Lamblia _ Trichomonas vaginalis)</p>
Session 4 (Week 4)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Haemoflagelates (Leishmania Species)
Session 5 (Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Trypanosomiasis (African trypanosomiasis - American trypanosomiasis .)
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ciliates :(Balantidiasis)
Session 7 (Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> COCCIDIA (SPOROZOA) (Malaria Species(Plasmodium falciparum , Plasmodium vivax Plasmodium malariae , Plasmodium ovale)
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Medically important trematodes (Flukes) <p>Blood Flukes ..(Schistosomiasis (Bilharziasis) ,Schistosoma Mansoni , Urinary Scistosomiasis , Schistosoma Japonium ,Schistosoma Intercalatum</p> <ul style="list-style-type: none"> Intestinal Flukes (Liver Flukes , Lung Flukes)
Session 10 (Week 10)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Nematodes (Round Worms) (Ascaris lumbricoides ,Hook worms ,Ancylostoma duodenale , Necator Americanus , Larva migrans , Cutaneous larva migrans (creeping eruption) Visceral larva migrans , Strongyloides stercoralis , Intestinal nematodes without tissue stage ,Enterobius vermicularis (Pin worm or thread worm)
Session 11 (Week 11)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Tissue nematodes :(Filarial worms : Wuchereria Bancrofti , Onchocerca Volvulus , Loa Loa , Dracunculus Medinensis (Guinea Worm or Medina Worm) , Trichinosis



Session 12 (Week 12)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Cestodes :Tapeworms (Hymenolepis nana (Dwarf Tapeworm) ,Hymenolepis Diminuta (Rat tapeworm) , Echinococcus :Echinococcus Granulosus (Dog Tape Worm) , Echinococcus multilocularis , Taenia Saginata (Beef Tape Worm) , Taenia Solium (Pork Tape Worm) Diphylbotrium Latum (Fish Tapeworm or Broad Tape Worm)
Session 13 (Week 13)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Medical Entomology .. <p>Importance of Arthropods in Parasitology ,Classification of Arthropods Fly related conditions Mosquito related conditions</p>
Session 14 (Week 14)	<p>Topics to be covered in the session (week)</p> <p>Flea related conditions Lice related conditions E. Bug related conditions F. Tick related conditions</p>
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

الصحة النفسية

الصحة النفسية	اسم المقرر الدراسي	1
PH301	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5

6	المتطلبات المطلوبة مسبقا	علم النفس
7	البرنامج المقدم للدورة	الفصل الدراسي الثامن
8	لغة التدريس	اللغة العربية واللغة الإنجليزية
9	تاريخ الموافقة على المقرر	2022
	وصف موجز للمقرر	تعريف الطالب بالمقرر الدراسي وما يتضمنه من مواضيع مفهوما، أهميتها، مظاهرها، وعلاقتها ببعض العلوم الأخرى بقسم الصحة العامة
	الكتب المقررة	عنوان الكتاب المقرر و ISBN: <ul style="list-style-type: none"> ▪ حامد عبد السلام زهران- 2005-الصحة النفسية والعلاج النفسي - عالم الكتب ▪ معصومة سهيل المطيري – 2005-الصحة النفسية- مكتبة الفلاح. ▪ اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
	المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر ساعتين اسبوعيا بمجموع طيلة الدورة (28) ساعة
	طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.
	أهداف المقرر	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: -أهداف المقرر: <ul style="list-style-type: none"> ▪ المعرفة بالصحة و المفاهيم الاساسية الموجودة النفسية. ▪ المعرفة بدور التربية الإسلامية في الصحة النفسية. ▪ المعرفة بمعايير ومحكات السواء والأسواء. ▪ المعرفة بمظاهر الصحة النفسية . ▪ المعرفة بخصائص الشخصية المتمتعة بالصحة النفسية. ▪ المعرفة بمناهج الصحة النفسية . ▪ تميز الطالبة المفهوم الحديث للصحة النفسية.
	طريقة التقييم	<ul style="list-style-type: none"> • الامتحان النصفي 30% • الامتحان النهائي 60% • الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية ...10% • درجة النجاح:60..
	محتويات المقرر	محتوى المقرر الدراسي
	الأسبوع الأول	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> • مدخل إلى الصحة النفسية. ▪ مفهوما، أهميتها، مظاهرها، وعلاقتها ببعض العلوم الأخرى
	الأسبوع الثاني	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ أسباب الأمراض النفسية وأعراضها.
	الأسبوع الرابع	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ الغصاب - القلق، توهم المرض - الضعف العصبي، الهستيريا.
	الأسبوع الخامس	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> - الخوف، الوسواس القهري - الاكتئاب، التفكك
	الأسبوع السادس	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ الذهان. - الفصام - الهذاء، الهوس ▪ العلاج النفسي. - مفاهيم عامة في العلاج النفسي.



الأسبوع السابع	- العلاج وفق التحليل النفسي المواضيع التي سيتم تغطيتها في الأسبوع • العلاج السلوكي.
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	المواضيع التي سيتم تغطيتها في الأسبوع. ▪ الإرشاد العلاجي.
الأسبوع العاشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ مقياس الصحة النفسية للممرضين.
الأسبوع الحادي عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ الشخصية وتأثيرها في الصحة النفسية
الأسبوع الثاني عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ جودة الصحة النفسية وعلاقتها بعمليات تحمل الضغوط (عناصر التمريض)
الأسبوع الثالث عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ العلاقة بين فاعلية الذات ودافعية الإنجاز وأثرهما في العمل الصحي داخل المستشفيات
الأسبوع الرابع عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ جودة الصحة النفسية وعلاقتها بعمليات تحمل الضغوط.
الأسبوع الخامس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، وفي الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الأستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي.

الدعم النفسي والاجتماعي

1	اسم المقرر الدراسي	الدعم النفسي والاجتماعي
2	رمز المقرر	PH301
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	PH115
7	البرنامج المقدم للدورة	الفصل الدراسي الرابع
8	لغة التدريس	اللغة العربية واللغة الإنجليزية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	تزويد الطالب بالعلوم الخاصة بالدعم النفسي - اجتماعي وتعريفه بأنه هو العمليات والإجراءات التي تعزز من الرفاه الكلي للأشخاص في عالمهم الاجتماعي. يشمل دعماً مقدماً من قبل العائلة والأصدقاء وربط هذا المعنى بالصحة العامة ومدى تأثيره في السلامة الصحية للفرد والمجتمع.
الكتب المقررة	عنوان الكتاب المقرر و ISBN: <ul style="list-style-type: none"> ▪ مرسيليا حسن شعبان 2013 -- الدعم النفسي ضرورة مجتمعية- شبكة العلوم النفسية العربية. ▪ هالة فاروق المسعود-2012- 35 اسلوب على كل مرشد معرفتها- مكتبة دار الولاية للنشر والتوزيع. ▪ اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ-المقرر.
المدة الزمنية للمقرر	(28) ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، الزيارات الميدانية.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: -أهداف المقرر: <ul style="list-style-type: none"> ▪ ان يدرك الطلبة الدعم النفسي وأساليبه ▪ ان يدرك الطلبة الإجراءات النفسية الاسعافية ▪ ان يستخدم الطالب التقنيات النفسية المستخدمة في الدعم النفسي . ▪ تنمية جوانب القوة في شخصية الطالبة وإصلاح جوانب الضعف ▪ تحديد أهم الوسائل المعينة على الوقاية من الصدمات النفسية
طريقة التقييم	<ul style="list-style-type: none"> • الامتحان النصفي 30% • الامتحان النهائي 60% • الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية ...10% • درجة النجاح:60..
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	المواضيع التي سيتم تغطيتها في الأسبوع • مدخل إلى الدعم النفسي. ▪ مفهومه، أهدافه، أهميته للطبيب والمريض
الأسبوع الثاني	المواضيع التي سيتم تغطيتها في الأسبوع ▪ الاجراءات النفسية الاسعافية. - اعتبارات اساسية قبل البدء في برامج الإسعافات النفسية
الأسبوع الثالث	المواضيع التي سيتم تغطيتها في الأسبوع - الأعراض ومعايير تشخيص الصدمة. - الأعراض الأساسية لما بعد الصدمة الظواهر الكيميائية.
الأسبوع الرابع	المواضيع التي سيتم تغطيتها في الأسبوع - اضطراب التعلق الارتكاسي من الاضطرابات التي تنشأ نتيجة الصدمة النفسية. - طرق التنفيس الانفعالي -التدابير الاساسية في مواجهة الصدمة -الاجراءات الوقائية للتخفيف من الضغوط وتجنب الوقوع في الصدمات النفسية.
الأسبوع الخامس	المواضيع التي سيتم تغطيتها في الأسبوع ▪ الاثار التي تنتج عن زيادة الأدرينالين
الأسبوع السادس	المواضيع التي سيتم تغطيتها في الأسبوع ▪ السمات العامة لفريق الدعم النفسي
الأسبوع السابع	المواضيع التي سيتم تغطيتها في الأسبوع • المهارات الهامة للمتطوعين في نجاح برامج الدعم النفسي
الأسبوع الثامن	الامتحان النصفي
الأسبوع التاسع	المواضيع التي سيتم تغطيتها في الأسبوع. ▪ بعض الأفكار العملية للمتطوعين في نجاح برامج الدعم النفسي
الأسبوع العاشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ تعرض العاملين الميدانيين في المجال الإنساني للصدمات
الأسبوع الحادي عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ ردادات الفعل الحادة للناشطين الإنسانيين تجاه الحدث الصامد



المواضيع التي سيتم تغطيتها في الأسبوع ▪ الأليات المنهجية العامة والمتخصصة للدعم النفسي -العلاج بالعقاقير الطبية النفسية. - علاج نفسي سلوكي معرفي.	الأسبوع الثاني عشر
المواضيع التي سيتم تغطيتها في الأسبوع ▪ علاج نفسي تحليلي. ▪ تقنية تقوية حركية العين على تجاوز المشاهد المؤثرة.	الأسبوع الثالث عشر
المواضيع التي سيتم تغطيتها في الأسبوع ▪ العلاجات النفسية البديلة. - تقنية الاسترخاء العلاجي والتنويم الايحائي. - العلاج بالكتابة. - تقنية بث طاقة العدوان على المواقف المرفوضة بغية كفها.	الأسبوع الرابع عشر
الامتحان النهائي	الأسبوع الخامس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، وفي الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الأستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.	التغيير والتعديل في المقرر الدراسي

Environmental Health I

1	Course name	Environmental Health I
2	Course Code	PH308
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Healthy Food Inspection
7	Program offered the course	Public Health
8	Instruction Language	English language
9	Date of course approval	2022

Brief Description:

This course will provide students with a fundamental understanding of the nature of :

- Examines health issues, scientific understanding of causes, and possible future approaches to control of the major environmental health problems in industrialized and developing countries. Topics include how the body reacts to environmental pollutants; physical,



	chemical, and biological agents of environmental contamination; vectors for dissemination (air, water, soil); solid and hazardous waste; susceptible populations; biomarkers and risk analysis; the scientific basis for policy decisions; and emerging global environmental health problems.
Textbooks required for this Course:	Book Title & ISBN: • Yassi, A., Kjellstrom, T., de Kok, T., Guidotti, T. L. (2001). Basic environmental health. New York: Oxford University Press. Additional Resources: •Essentials of Environmental Health. 2012. Robert H. Friis Jones & Bartlett Learning– 2nd ed Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
Course Duration	28 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: Upon completion of this course, you will be able to: •Define the major sources and types of environmental agents. •Discuss the transport and fate of these agents in the environment. •Identify the carriers or vectors that promote the transfer of these agents from the environment to the human. •Describe how these agents interact with biological systems, and the mechanisms by which they exert adverse health effects. •Identify and define the steps in the risk-assessment and risk-management processes. •Identify significant gaps in the current knowledge base concerning the health effects of environmental agents and identify areas of uncertainty in the risk-assessment process.
Course Assessments	Assignment 1: 20% Assignment 2: 20% Final Exam: 60% 60% is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) • Environment-human interaction Pollution – Pollutant
Session 2 (Week 2)	Topics to be covered in the session (week) • Types of Pollutants
Session 3 (Week 3)	Topics to be covered in the session (week) • Human impact on the environment
Session 4 (Week 4)	Topics to be covered in the session (week) • Water pollution
Session 5 (Week 5)	Topics to be covered in the session (week) • Drinking Water Quality
Session 6 (Week 6)	Topics to be covered in the session (week) • Sewage Treatment
Session 7 (Week 7)	Topics to be covered in the session (week) • Environmental carcinogenesis
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week)



	<ul style="list-style-type: none"> • Air pollution
Session 10 (Week 10)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Global Warming
Session 11 (Week 11)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Food Quality Control
Session 12 (Week 12)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Environmental toxicology
Session 13 (Week 13)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Exposure, dose, response
Session 14 (Week 14)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Radiation and Health
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Environmental Health II

1	Course name	Environmental Health II
2	Course Code	PH 308
3	Course type: /general/specialty/optional	specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Environmental Health I
7	Program offered the course	Public Health
8	Instruction Language	English language
9	Date of course approval	2022
Brief Description:		<p>This course will provide students with a fundamental understanding of the nature of :</p> <ul style="list-style-type: none"> • Examines health issues, scientific understanding of causes, and possible future approaches to control of the major



	environmental health problems in industrialized and developing countries. Topics include how the body reacts to environmental pollutants; physical, chemical, and biological agents of environmental contamination; vectors for dissemination (air, water, soil); solid and hazardous waste; susceptible populations; biomarkers and risk analysis; the scientific basis for policy decisions; and emerging global environmental health problems.
Textbooks required for this Course:	Book Title & ISBN: Blumenthal, D. S., and Ruttenber, A. J. (1995). Introduction to environmental health. Second Edition. New York: Springer. Additional Resources: Nadakavukaren, A. (2000). Our global environment: A health perspective (5th ed.) Prospect Heights: Waveland Press, Inc. Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
Course Duration	28 hours.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: Upon completion of this course, you will be able to: <ul style="list-style-type: none"> • Define the major sources and types of environmental agents. • Discuss the transport and fate of these agents in the environment. • Identify the carriers or vectors that promote the transfer of these agents from the environment to the human. • Describe how these agents interact with biological systems, and the mechanisms by which they exert adverse health effects. • Identify and define the steps in the risk-assessment and risk-management processes. • Identify significant gaps in the current knowledge base concerning the health effects of environmental agents and identify areas of uncertainty in the risk-assessment process.
Course Assessments	Assignment 1: 20% Assignment 2: 20% Final Exam: 60% 60% is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Environmental health economics and policy.
Session 2 (Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Municipal, industrial, and hazardous waste.
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Hazardous Waste
Session 4 (Week 4)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Chemical Hazards at the workplace
Session 5 (Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Pesticides and Health
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Physical hazards at workplace



Session 7 (Week 7)	Topics to be covered in the session (week) • Biological & Psychosocial Hazard
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) • Risk assessment and management.
Session 10 (Week 10)	Topics to be covered in the session (week) • Hospital waste
Session 11 (Week 11)	Topics to be covered in the session (week) • Occupational health
Session 12 (Week 12)	Topics to be covered in the session (week) • Environmental justice and policy
Session 13 (Week 13)	Topics to be covered in the session (week) • Risk communication.
Session 14 (Week 14)	Topics to be covered in the session (week) • Field visits to environmental sanitation and waste disposal centers
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

تشريعات صحية وأخلاقيات

تشريعات صحية وأخلاقيات	اسم المقرر الدراسي	1
PH207	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
	المتطلبات المطلوبة مسبقا	6
الصحة العامة	البرنامج المقدم للدورة	7



اللغة العربية واللغة الإنجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
تزويد الطالب بالمعلومات الكافية عن القوانين والتشريعات الصحية المحلية والدولية من حيث نشأتها وتعديلاتها وعلاقتها بالقوانين الصحية الدولية وطرق استنباط القوانين الصحية بما يتماشى مع المبادئ الخاصة بالدولة الليبية والشريعة الإسلامية.	وصف موجز للمقرر	
القوانين والتشريعات الليبية المنظمة للعمل الصحي - القانون الصحي الليبي وتعديلاته (106)	الكتب المقررة	
و ISBN : موارد إضافية: من الانترنت تتعلق بمواضيع الدراسة تم استخدام روابط من الشبكة المعلوماتية ويمكن استخدام كتب إضافية و بحوث وروابط نت لمواضيع من الانترنت وفقا لتقدير استاذ المقرر ..		
عدد الساعات 28 ساعة	المدة الزمنية للمقرر	
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية	طريقة التدريس	
عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:	المستهدف	
- أهداف المقرر:		
<ul style="list-style-type: none"> ▪ فهم لما يحتويه المقررات من خلال دراسة كل موضوع بتفاصيله على حدا . ▪ تحديد ومحاولة إيجاد الحلول لتلك المشاكل القانونية التي يقع فيها المشرع الصحي . ▪ التعرف على النصوص القانونية وفهمها بشكل صحيح . ▪ تحديد المشكلة وطريقة حلها و الوقوف على أفضل السبل للوصول إلي الظواهر السلبية ▪ التعرف على مختلف التطبيقات القانونية ومدى معالجة القضاء للعديد من المشاكل الصحية والبيئية ▪ بناء ولو كان من غير ذوي الاختصاص ملكة قانونية تمكن الطالب من إثراء فكره القانون ▪ كتابة بحوث وورقات عمل تستند على فهم عميق لما درسه الطالب خلال المادة العلمية. 		
<ul style="list-style-type: none"> ● الامتحان النصف 40% ● الامتحان النهائي 60% ● درجة النجاح: 60% 	طريقة التقييم	
محتوى المقرر الدراسي	محتويات المقرر	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الأول	
<ul style="list-style-type: none"> ● مقدمة والتعريف بالمقرر 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثاني	
<ul style="list-style-type: none"> ▪ مفاهيم أساسية ▪ الصحة الجسدية ▪ الطرق المستخدمة لتقدير الصحة الجسدية ▪ الصحة النفسية ▪ علامات تدل على الصحة النفسية ▪ الصحة الاجتماعية 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث	
<ul style="list-style-type: none"> ▪ صحة إيجابية ▪ المعايير الصحية ومعدل وفيات الرضع ▪ متوسط العمر المتوقع للخدمات والأنشطة الصحية 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع	
<ul style="list-style-type: none"> ▪ صحة إيجابية ▪ المعايير الصحية ومعدل وفيات الرضع ▪ متوسط العمر المتوقع للخدمات والأنشطة الصحية 		



المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الخامس
<ul style="list-style-type: none"> واجب الكادر الصحي للمؤسسة التي يعمل فيها العلاقات المهنية: العلاقة بين الكادر الصحي والزملاء إحالة المرضى العلاقة مع طاقم التمريض العلاقة مع المهن الصحية المساندة القضايا الاجتماعية المتعلقة بالصحة 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السادس
<ul style="list-style-type: none"> مبدأ التعامل السري فيما يتعلق بقصر المرضى مبدأ التعامل السري فيما يتعلق بإفشاء التقارير الطبية لمؤسسات جمع البيانات أخلاقيات البحث الطبي شروط البحث عن الأجنة متى تتوقف عن البحث 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السابع
<ul style="list-style-type: none"> أخلاقيات المهن الطبية والصحية علاقة الكادر الصحي بالمرضى آداب المهنة الصحية واجبات العاملين الصحيين علاقة الكادر الصحي بالمرضى واجبات الكادر الصحي تجاه المريض واجبات الكادر الصحي تجاه مهنته 	
الامتحان النصفى	الأسبوع الثامن
المواضيع التي سيتم تغطيتها في الأسبوع.	الأسبوع التاسع
<ul style="list-style-type: none"> تعريف الأمراض المعدية مكافحة الأمراض المعدية 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع العاشر
<ul style="list-style-type: none"> الحجر الصحي وإشكالية تطبيقه. مدي معالجة القانون الليبي (106) والمقارن للمخالفين للنظام الصحي . 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الحادب عشر
<ul style="list-style-type: none"> المرافق الصحية العامة والخاصة . تعريف المرفق الصحي. أنواع المرافق العامة الصحية. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثاني عشر
<ul style="list-style-type: none"> المركز الوطني للأمراض السارية وعلاقته بالتشريعات الصحية المنظمة للصحة العامة 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث عشر
<ul style="list-style-type: none"> سياسات الطب الوقائي ودورها في الحد من انتشار الأمراض السارية. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع عشر
<ul style="list-style-type: none"> السياسات والإجراءات والأنظمة الإدارية المنظمة للعملية الصحية بين مستويات النظام الصحي (سياسات الإحالة والدخول) 	
الامتحان النهائي	الأسبوع الخامس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغيرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغيرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.	التغيير والتعديل في المقرر الدراسي



Therapeutic Feeding

1	Course name	Therapeutic Feeding
2	Course Code	PH401
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	Basic healthy Nutrition ,Bio chemistry
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022

Brief Description: This subject covers the path physiology, treatment and management of nutrition-related diseases and conditions as well as recommended guidelines for their clinical nutrition intervention. This course will cover the nutritional interventions regarding therapeutic diet, Diseases of the Endocrine, diabetic mellitus, thyroid, obesity, cardiovascular disease ,hypertension, kidney disease, liver disease, fever and food allergy

1. Define the importance of information to patients on food and diet choices Emphasis the importance of health literacy and informed decision-making concerning nutrition
2. Highlight evidence based scientific nutrition guidance available for specific disease areas (endocrine disease) while giving examples of existing examples of patient friendly summaries of this information and nutrition guidance developed by patient organizations.
3. Explain the patient summaries of clinical nutrition guidelines are needed and inspire scientific societies and guideline developers, Provide recommendations for improving existing guideline development processes, improving patient involvement and the development of patient summaries.

Textbooks required for this Course:

1. Clinical dietetics and Nutrition, Antia, F.P, Second Edition, Oxford University Press(1973): Delhi.
2. Nutrition,Paul Insel, R. Elaine Turner and Don Ross, Third Edition, Jones and Bartlett Publishers (2007) London
3. Textbook of Human Nutrition, Anjana Agarwal and A. Shobha Udipi, First Edition, Jaypee Brothers Medical Publishers (p) Ltd, (2014), India

Course Duration 56 hours

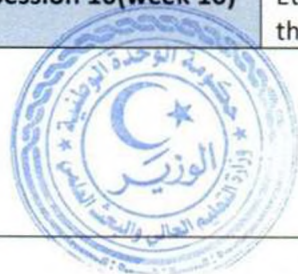
Delivery Lecture-based, Group interaction and discussion,

Course Objectives:

1. The Applied methods for calculating the nutritional requirements of Patients and assessing their nutritional Status
2. Their clinical knowledge into their daily practices, and function both Independently and as a member of a healthcare team
3. Applied the appropriate dietetic approaches, including route and sources of Nutrition, in a range of clinical



	Conditions. Determine appropriate medical nutrition therapy for various health disorders
Course Assessments	<ul style="list-style-type: none"> • Homework and field research, class activities 10% • midterm exam 30% • Final Exam 60% Passing score: 60%
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Role of Dietitian and types of responsibilities of dietitian ,management of dietary services,
Session 2 (Week 2)	Principles of nutrition care <ul style="list-style-type: none"> • Nutrition Care Process • Therapeutic adaptations Diseases of the of the normal diet <ul style="list-style-type: none"> • Progressive diets – clear fluid, full fluid,. • Soft Diet • Low-Residue Diet • Low-Sodium Diet (Specific Patient) and High- Sodium Diet • DASH Diet • Low-Fat Diet (CAD Prevention) • Renal Diet • Diabetic Diet and regular diet.....
Session 3 (Week 3)	Etiology, clinical features and nutritional management of Infections and Fevers <ul style="list-style-type: none"> • Typhoid • Tuberculosis • HIV
Session 4 (Week 4)	Unit III: Etiology, clinical features and nutritional management of the following <ul style="list-style-type: none"> • GI Tract Disorders: <ul style="list-style-type: none"> • Diarrhea • Constipation • Lactose intolerance Celiac disease.....
Session 5 (Week 5)	Etiology, clinical features and nutritional management of Weight Imbalances-Overweight and obesity Underweight <ul style="list-style-type: none"> • Eating disorder- anorexia nervosa and bulimia
Session 6 (Week 6)	Etiology, clinical features, basic diagnosis and nutritional management of the Type 1 and Type 2 Diabetes Mellitus
Session 7 (Week 7)	Etiology, clinical features, basic diagnosis and nutritional management of the thyroid diseases(Metabolic Syndrome)
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Etiology, clinical features, basic diagnosis and nutritional management of the Hypertension
Session 10(week 10)	Etiology, clinical features, basic diagnosis and nutritional management of the Coronary Heart Disease



Session 11(week 11)	Etiology, clinical features, basic diagnosis and nutritional management of the kidney disease
Session 12(week 12)	Etiology, clinical features, basic diagnosis and nutritional management of liver disease
Session 13(week 13)	Food allergy and food intolerance Etiology, clinical features, diagnosis and nutritional management
Session 14(week 14)	Etiology, clinical features, basic diagnosis and nutritional management of the osteoporosis
Session 15(week 15)	Nutrition in critical care assessment & management
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	1. To sufficient knowledge and skills and are equipped with values required for professional practices and leadership in the field of clinical nutrition that meet the aspirations of optimum health care at the national level. 2. Residents will become familiar with providing a specialized nutritional management in various patient populations and disease state 3. The relation between basic nutrients, which have elements that affect food consumption and an individual's health and nutritional status. It is also dependent on recognizing the individuals' needs in health
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

اقتصاديات الصحة

اقتصاديات الصحة	اسم المقرر الدراسي	1
PH407	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
الصحة العامة	المتطلبات المطلوبة مسبقا	6
الصحة العامة	البرنامج المقدم للدورة	7
اللغة العربية واللغة الإنجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
تزويد الطالب بالمعلومات اللازمة في مجال الاقتصاد الصحي وطرق تموين القطاع الصحي وكيفية دراسة التكاليف والاسواق الصحية وتمويلها وحساب الارباح والخسائر الصحية.		وصف موجز للمقرر

	وكيفية دراسة الاقتصاد وقت الازمات الصحية وتأثيرها على الاقتصاد الكلي للدولة.
الكتب المقررة	عنوان الكتاب المقرر و ISBN: اقتصاديات الصحة - مجموعة مؤلفين- مدخل الي الاقتصاد الصحي - لورنا جينيس - فرجينيا وايز مان - ترجمة مجموعة مؤلفين. طباعة المركز العربي لتأليف وترجمة العلوم الصحية.- الكويت. موارد إضافية: يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر 28 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.
أهداف المقرر	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: <ul style="list-style-type: none"> ▪ تعريف الطالب بالمفاهيم الأساسية لعلم الاقتصاد وطبيعة المشكلة الاقتصادية ووسائل حلها. ▪ إكساب الطالب المهارات الأساسية التي تمكنه من تحليل قوى العرض والطلب وكيفية احتساب مرونتاهما وفهم كيفية الوصول إلى السعر التوازني في السوق ▪ تعريف الطالب بنظريات سلوك المستهلك والمنتج وتكاليف الإنتاج ▪ تمكين الطالب من التمييز بين انماط الأسواق المختلفة ومعرفة كيفية تحديد المتغيرات الأساسية فيه ▪ فهم النظريات الأساسية لعلم الاقتصاد ▪ تحليل الظواهر والمشكلات الاقتصادية الكلية ▪ تقديم الحلول الملائمة للمشكلات الاقتصادية الكلية.
طريقة التقييم	<ul style="list-style-type: none"> ● الامتحان النصفى 30% ● الامتحان النهائي 60% ● الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية ...10% ● درجة النجاح: 60..
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> • مقدمة والتعريف بالمقرر. • مقدمة في علم الاقتصاد
الأسبوع الثاني	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ دوال الطلب. ▪ دوال العرض. ▪ توازن السوق.
الأسبوع الثالث	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ المرونة. ▪ تطبيقات المرونة
الأسبوع الرابع	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ نظرية سلوك المستهلك. ▪ نظرية سلوك المنتج.
الأسبوع الخامس	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ تكاليف الإنتاج
الأسبوع السادس	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ● الإيرادات.
الأسبوع السابع	المواضيع التي سيتم تغطيتها في الأسبوع. <ul style="list-style-type: none"> - أنواع الأسواق: - لمنافسة التامة. - الاحتكار - أسواق الرعاية الصحية والكفاءة
الأسبوع الثامن	الامتحان النصفى



الأسبوع التاسع	المواضيع التي سيتم تغطيتها في الأسبوع. ▪ نماذج التدفق الدائري للدخل
الأسبوع العاشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ قياس النشاط الاقتصادي الكلي
الأسبوع الحادب عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ السياسة المالية وتأثيرها على الصحة
الأسبوع الثاني عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ تمويل الرعاية الصحية
الأسبوع الثالث عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ التامين الصحي
الأسبوع الرابع عشر	المواضيع التي سيتم تغطيتها في الأسبوع ▪ التقييم الاقتصادي ودوره في اتخاذ القرار الاداري
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغيرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.

Hospital Infection control

1	Course name	Hospital Infection control
2	Course Code	PH406
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Knowledge of public health, infectious disease, medical microbiology
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The course deals with the quality of a hospital's or health center's infection control program is a reflection of the overall standard of care provided by that institution. Good infection control programs reduce nosocomial infections, length of stay in the hospital and costs associated with hospitalization Epidemiology inspectors will be a member of infection control team in hospitals with all ...knowledge, administrative and practical skill needed for that



<p>Textbooks required for this Course:</p>	<p>1. Wenzel, Brewer, Butzler: A guide to infection control in the hospital, ISID, 2nd ed. 2002</p> <p>2. Ayliffe, Fraise, Geddes: Control of hospital infection, Arnold publications 4th ed, 2000</p> <p>3. Rhee, C., Dantes, R., Epstein, L., Murphy, D. J., Seymour, C. W., Iwashyna, T. J., ... CDC Prevention Epicenter (2017). Incidence and Trends of Sepsis in US Hospitals Using Clinical vs Claims Data, 2009-2014. JAMA, 318(13), 1241. https://doi.org/10.1001/jama.2017.13836</p> <p>4. Rhodes, A., Evans, L.E., Alhazzani, W., Levy, M. M., Antonelli, M., Ferrer, R., Dellinger, R. P. (n.d.). Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock: 2016. Intensive Care Medicine, 43(3), 304-377. https://doi.org/10.1007/s00134-017-4683-6</p> <p>5. Rory Staunton Foundation. (n.d.). About Our Foundation. Retrieved July 24, 2018, from https://rorystauntonfoundationforsepsis.org/about-our-foundation-2/ Sepsis Alliance. (n.d.-a). Definition of Sepsis. Retrieved July 24, 2018, from https://www.sepsis.org/sepsis/definition/ Sepsis Alliance. (n.d.-b). Sepsis and Children. Retrieved July 26, 2018, from https://www.sepsis.org/sepsis-and/children/</p> <p>6. Torio, C. M., & Andrews, R. M. (2013). National Inpatient Hospital Costs: The Most Expensive Conditions by Payer, 2011: Statistical Brief #160. Healthcare Cost and Utilization Project (HCUP) Statistical Briefs. Agency for Healthcare Research and Quality (US). Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/24199255</p>
<p>Course Duration</p>	<p>28 hours</p>
<p>Delivery</p>	<p>Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.</p>
<p>Course Objectives:</p>	<p>By the end of the course the student will be able to:</p> <ol style="list-style-type: none"> 1. Define basic concepts of Hospital Infection Control 2. - Describe administrative aspects of infection control team 3. List the surveillance, records and reports related to Infection control. 4- -Discuss details of disinfection, sterilization and hand washing techniques and types. 5- Distinguish prevention of infections and decontamination of different areas e.g. wards, labs, operating room, emergency room disorders. list Control methods of HBV HCV and HIV
<p>Course Assessments</p>	<ul style="list-style-type: none"> ● Homework and field research, class activities 10% ● midterm exam 30% ● Final Exam 60% <p>Passing score: 60%</p>
<p>Content Breakdown</p>	<p>Topical Coverage</p>
<p>Session 1 (Week 1)</p>	<p>Introduction and definitions of main topics:</p> <ol style="list-style-type: none"> 1. Infection Control Team 2. Administrative aspects of infection Control



Session 2 (Week 2)	3. Infection, colonization, contamination Source of infection, vector or vehicle 4. disinfection, sterilization, decontamination
Session 3 (Week 3)	types of sterilization methods ● Roles and responsibilities of infection control team
Session 4 (Week 4)	Surveillance: Concepts and Components of Surveillance for infection Control: A .Forms b. Records c. activities
Session 5 (Week 5)	Disinfection and sterilization methods 1. Types of sterilization methods 2. Details of each method
Session 6 (Week 6)	3. Advantages and disadvantages of each method: ● Hydrogenperoxide plasmas ● Terilization
Session 7 (Week 7)	● steamsterilization ● dryheatsterilization e. 100%ETO ● Formaldehyde
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Disinfection and sterilization: 1. Definitions
Session 10(Week 10)	2. Concepts of disinfection and sterilization
Session 11 (Week 11)	3. Types and methods Disinfection of different hospital environments, ● outpatient clinics inpatient wards ● operating rooms
Session 12 (Week 12)	● quarantine areas ● endoscopic activities ● Surgical tools and gowns
Session 13 (Week 13)	Hand washing Importance of hand washing in health care settings Methods of hand washing
Session 14 (Week 14)	Control methods of HBV HCV and HIV
Session 15 (Week 15)	Infection control in the community
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	● Use computer skills. ● Consider confidentiality during data management and work within legal aspect ● Utilize effective communication skills during work to enhance team work spirit ● Enhance life-long, self-directed working
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an

	ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Pharmacology and Toxicology

1	Course name	Pharmacology and toxicology
2	Course Code	PH205
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Biochemistry
7	Program offered the course	Public Health
8	Instruction Language	English and Arabic
9	Date of course approval	2022

Brief Description:



The goals of pharmacology are to provide the students with a basic knowledge and understanding of the actions of drugs in order to enable them to utilize therapeutic agents in a rational and responsible manner in the treatment of patients. Initially, basic principles of Pharmacology will be presented, including absorption, distribution, metabolism, and excretion of drugs by the body. The concept of drug-receptor interaction will also be presented, and illustrated with appropriate examples. Drug toxicity, drug interactions, will also be defined and illustrated with examples. Following the presentation of basic concepts, the pharmacology of the autonomic nervous system and local hormones will be presented as a prelude to the pharmacology of the cardiovascular and central nervous systems. Paralleling the respiratory, renal, and blood and lymph systems, the antimicrobial and cancer chemotherapeutic agents will be presented. During the musculoskeletal, endocrine, CNS, reproductive and GI systems, the related pharmacology will be presented.

Furthermore, this course concerns basic concepts and contemporary issues of basic and clinical toxicology. Topics covered include general toxicology; types of toxicity; evaluation of safety of a new compound; toxicity of major classes of chemicals (e.g., metals, air pollutants and drugs over-dosage)

Textbooks required for this Course:

Book Title & ISBN: pharmacology
Additional Resources:
Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.

Course Duration

28 hours

Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<ul style="list-style-type: none"> ▪ Upon completion of this course, the student will have reliably demonstrated their ability to: <ul style="list-style-type: none"> • His comprehensive knowledge and clear understanding of the basic information related to the subject matter. • Linking the clinical significance that may arise from the deficiency or excess of these medicinal substances in the body. • Introducing the student to drug interactions in the body. • Introducing the student to the concepts related to industrial pharmacy, starting from the raw materials to the final product in the market ▪ Increasing the student's ability to conduct academic and applied scientific research and motivating researchers and students to publish the results of their research in refereed scientific fields.
Course Assessments	<ul style="list-style-type: none"> • Homework and field research, class activities 10% • midterm exam 30% • Final Exam 60% Passing score: 60%
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to Pharmacology
Session 2 (Week 2)	Introduction to Pharmacology
Session 3 (Week 3)	- Medication Administration -Types of Medication Orders
Session 4 (Week 4)	- Therapeutic Action of Drugs - Effects of Drugs
Session 5 (Week 5)	- Drugs, Side effects, and intervention and Drug Computation
Session 6 (Week 6)	- Dosage Calculations
Session 7 (Week 7)	- Classification of Drugs
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	- Antimicrobial Medications
Session 10 (Week 10)	- Cardiovascular Medications - Gastrointestinal Medications
Session 11 (Week 11)	- Neurologic Medications - Analgesics and Antipyretics; Anesthetics -
Session 12 (Week 12)	- Diuretics and Antihypertensive medications - Emetics and Antiemetics
Session 13 (Week 13)	- Laxatives and Antidiarrheals
Session 14 (Week 14)	- Uterine Relaxants, Uterine Stimulant
Session 15 (Week 15)	- Respiratory Medications
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates



	have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Research Methods and Data Analysis

1	Course name	Research Methods and Data Analysis
2	Course Code	PH303
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Biostatistics
7	Program offered the course	Public Health
8	Instruction Language	English language
9	Date of course approval	2022

Brief Description:	<p>This course will provide students with a fundamental understanding of the nature of</p> <ul style="list-style-type: none"> Examines health issues, scientific understanding of causes, and possible future approaches to control of the major environmental health problems in industrialized and developing countries. Topics include how the body reacts to environmental pollutants; physical, chemical, and biological agents of environmental contamination; vectors for dissemination (air, water, soil); solid and hazardous waste; susceptible populations; biomarkers and risk analysis; the scientific basis for policy decisions; and emerging global environmental health problems.
Textbooks required for this Course:	<p>Book Title & ISBN: Blumenthal, D. S., and Ruttenber, A. J. (1995). Introduction to environmental health. Second Edition. New York: Springer.</p> <p>Additional Resources: Nadakavukaren, A. (2000). Our global environment: A health perspective (5th ed.) Prospect Heights: Waveland Press, Inc.</p> <p>Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.</p>
Course Duration	28hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <p>Upon completion of this course, you will be able to:</p>



	<ul style="list-style-type: none"> • Define the major sources and types of environmental agents. • Discuss the transport and fate of these agents in the environment. • Identify the carriers or vectors that promote the transfer of these agents from the environment to the human. • Describe how these agents interact with biological systems, and the mechanisms by which they exert adverse health effects. • Identify and define the steps in the risk-assessment and risk-management processes. • Identify significant gaps in the current knowledge base concerning the health effects of environmental agents and identify areas of uncertainty in the risk-assessment process.
Course Assessments	Assignment 1: 20% Assignment 2: 20% Final Exam: 60% A 60% is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ol style="list-style-type: none"> 1. Introduction 2. Aims of scientific research 3. What is research proposal of scientific research
Session 2 (Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Why is a Research Proposal written? • Structure of Research: explain each point perfectly
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Title • Explain how to write the title with many examples • Table of contents: explain how to create and organize table of content
Session 4 (Week 4)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Abstract: how to organize and to write an abstract • Introduction and Literature review: how to select references related to the topic of research • Study objectives: explain how to focus
Session 5 (Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • on specific objectives • Methodology: must be explained well since it is the main item in the research with limitations, ethical considerations and budget • Results: student must learn how to present the results and write the comments
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Discussion: student must learn how to organize and write the discussion and comparison with other studies related to same subject from different areas or countries
Session 7 (Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • References/ Bibliography: student must learn how to find the reliable references from books and online, and learn the reliable website for scientific research and discard the commercial websites
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Plagiarism: should be explained • Quotes: should be explained



Session 10 (Week 10)	Topics to be covered in the session (week) ● Citations: should be explained
Session 11 (Week 11)	Topics to be covered in the session (week) ● Electronic insert of references using endnote: should be explained and used in the final graduation research ● Special lecture to teach students how to use Endnote software
Session 12 (Week 12)	Topics to be covered in the session (week) ● Special lecture to teach students how to use SPSS software. ● Special lecture to teach student who to create and use Table of contents
Session 13 (Week 13)	Topics to be covered in the session (week) ● Student must write assignments for three or four parts such as write methodology of any prospective research
Session 14 (Week 14)	Topics to be covered in the session (week) ● Student must write a research during the semester using a scientific methods for having 40% of the total grade .
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

هندسة صحية 1

هندسة صحية 1	اسم المقرر الدراسي	1
PH400	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
	المتطلبات المطلوبة مسبقا	6
الصحة العامة	البرنامج المقدم للدورة	7

اللغة العربية واللغة الإنجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
ستزود هذه الدورة الطلاب بفهم أساسي: <ul style="list-style-type: none"> تخطيط المنازل بطريق صحية وكيفية ادارتها لتقليل اضرارها الصحية . عملية تقييم المخاطر الناتجة عن الاهمال في تصريف الفضلات والفصل بين مراحل التصريف وتقييمات المخاطر الصحية الناتجة عن ازمات وطرق التصريف الصحية. تعريفه علي أنواع التهديدات الصحية بما في ذلك المخاطر الكيميائية والبيولوجية والإشعاعية والفيزيائية والمخاطر النفسية والاجتماعية الناتجة عن الخلل في التخطيط السليم للمدن وطرق ادارتها. 	وصف موجز للمقرر	
عنوان الكتاب المقرر و ISBN:Public-Health-The-Basics- قاموس الصحة العامة الأساسية- مقدمة في الصحة والتغذية- منشورات منظمة الصحة العالمية في البرنامج الخاص بالصحة العامة. موارد إضافية: يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.	الكتب المقررة	
عدد الساعات المطلوب لتدريس المقرر 28 ساعة	المدة الزمنية للمقرر	
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.	طريقة التدريس	
عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: <ul style="list-style-type: none"> أن يعرف الطالب مصادر المياه المختلفة. أن يعرف الطالب حساب التعداد السكاني الحالي والمستقبلي للمنطقة. أن يعرف الطالب حساب معدلات الاستهلاك الحالية والمستقبلية للمياه أن يعرف الطالب مراحل تنقية المياه وأساسيات التصميم الهندسي لمشروعات المياه. 	أهداف المقرر	
<ul style="list-style-type: none"> الامتحان النصفى 30% الامتحان النهائي 60% الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية ...10% درجة النجاح:60.. 	طريقة التقييم	
محتوى المقرر الدراسي	محتويات المقرر	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> مقدمة والتعريف بالمقرر. مقدمة- المواصفات القياسية للبيبة لمياه الشرب -المواصفات القياسية العالمية لمنظمة الصحة العالمية 	الأسبوع الأول	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> الدراسات الأولية اللازمة لمشروع أعمال المياه -تقدير المتطلبات المائية 	الأسبوع الثاني	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> متطلبات مياه الحريق-مصادر المياه 	الأسبوع الثالث	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> تعداد السكان المستقبلي 	الأسبوع الرابع	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> نقل وتخزين وتوزيع المياه 	الأسبوع الخامس	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> أنواع الأنابيب وملحقاتها 	الأسبوع السادس	
<ul style="list-style-type: none"> الصحة العامة للمجموعات الخاصة: أنواع الأنابيب وملحقاتها 	الأسبوع السابع	
الامتحان النصفى	الأسبوع الثامن	
المواضيع التي سيتم تغطيتها في الأسبوع. <ul style="list-style-type: none"> عمليات الترسيب- حوض الترسيب المتالي 	الأسبوع التاسع	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> والترسيب والتلبد 	الأسبوع العاشر	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> الترشيح 	الأسبوع الحادب عشر	
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> التعقيم 	الأسبوع الثاني عشر	



المواضيع التي سيتم تغطيتها في الأسبوع ▪ تطبيقات الهندسة الصحية في تصميم المنازل وطرق الربط	الأسبوع الثالث عشر
المواضيع التي سيتم تغطيتها في الأسبوع ▪ تصاميم مخططات المدن والمباني وفق انظمة الهندسة الصحية.	الأسبوع الرابع عشر
الامتحان النهائي	
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الأسبوع السادس عشر
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	الحضور والغياب
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.	مهارات عامة
	التغيير والتعديل في المقرر الدراسي

هندسة صحية 2

هندسة صحية II	اسم المقرر الدراسي	1
PH400	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
هندسة صحية 1	المتطلبات المطلوبة مسبقا	6
الصحة العامة	البرنامج المقدم للدورة	7
اللغة العربية واللغة الإنجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
<p>ستزود هذه الدورة الطلاب بفهم أساسي:</p> <ul style="list-style-type: none"> تخطيط المدن بطريق صحية وكيفية ادارتها لتقليل اضرارها الصحية . عملية تقييم المخاطر الناتجة عن الاهمال في تصريف الفضلات والفصل بين مراحل التصريف وتقييمات المخاطر الصحية الناتجة عن ازمان البناء العشوائي. تعريفه علي أنواع التهديدات الصحية بما في ذلك المخاطر الكيميائية والبيولوجية والإشعاعية والفيزيائية والمخاطر النفسية والاجتماعية الناتجة عن الخلل في التخطيط السليم للمدن وطرق ادارتها. <p>كما تقدم الحلول والضوابط الإدارية والاعتبارات في المساهمة أيضًا في التحكم أو التقليل من الاثار السلبية لسوء التخطيط للمدن.</p>		
<p>وصف موجز للمقرر</p>		
<p>عنوان الكتاب المقرر و ISBN منشأة المعارف بالإسكندرية- محمد العدوي - يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.</p>		
<p>عدد الساعات المطلوب لتدريس المقرر ساعتين اسبوعيا بمجموع عام طلية الدورة (28) ساعة.</p>		
<p>المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.</p>		
<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p>		
<p>أهداف المقرر</p> <ul style="list-style-type: none"> أن يعرف الطالب كميات وصرف مياه الامطار أن يعرف الطالب تصميم انابيب الصرف و ملحقاتها و الاحمال عليها أن يعرف الطالب طرق المعالجة وقنوات الاكسدة وبحيرات الاكسدة 		



<ul style="list-style-type: none"> أن يعرف الطالب طرق واجهزة قياس الاكسجين المذاب والحيوي وفحوصات الماء على المبادئ الاساسية لبرنامج الإصلاح الصحي والنهوض بالصحة العامة. 	
<ul style="list-style-type: none"> الامتحان النصفى 30% الامتحان النهائى 60% الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية ..10% درجة النجاح: 60.. 	طريقة التقييم
محتوى المقرر الدراسي	محتويات المقرر
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الأول
<ul style="list-style-type: none"> مقدمة, كميات و صرف مياه الامطار وكميات المياه الثقيلة 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثاني
<ul style="list-style-type: none"> احواض حجز الشحوم والزيوت والسيفون المقلوب 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث
<ul style="list-style-type: none"> انواع منظومات الصرف الصحي و الخصائص العامة للمياه الثقيلة 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع
<ul style="list-style-type: none"> انواع منظومات الصرف الصحي و الخصائص العامة للمياه الثقيلة 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الخامس
<ul style="list-style-type: none"> الهدف من المعالجة وطرقها و المعالجة الاولية والشبكات و الطواحين و حوض حجز الرمال و حوض الترسيب 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السادس
<ul style="list-style-type: none"> قنوات الأكسدة و بحيرات الأكسدة و صرف المياه المعالجة و استعمالاتها. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السابع
<ul style="list-style-type: none"> المعالجة الثانوية وطريقة الخبث المنشط ومرشحات التنقيط 	
الامتحان النصفى	الأسبوع الثامن
المواضيع التي سيتم تغطيتها في الأسبوع.	الأسبوع التاسع
<ul style="list-style-type: none"> قنوات الأكسدة و بحيرات الأكسدة و صرف المياه المعالجة و استعمالاتها 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع العاشر
<ul style="list-style-type: none"> التخمير و الهاضوم و التركيز و التجفيف 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الحادى عشر
<ul style="list-style-type: none"> جهاز قياس الأكسجين المذاب و قياس المزداد العضوية 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثانى عشر
<ul style="list-style-type: none"> النيتروجين الكلى و الكلوريدات و الفحوصات الحيوية للماء. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث عشر
<ul style="list-style-type: none"> العدد الكلى للبيكتيريا في الماء و العدد الاكثر لبيكتيريا القولون. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع عشر
<ul style="list-style-type: none"> زيارات ميدانية 	
الامتحان النهائى	الأسبوع السادس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمى وصدور الموافقة من مجلس القسم العلمى.	التغيير والتعديل في المقرر الدراسي



إدارة الازمات و الكوارث الصحية

1	اسم المقرر الدراسي	إدارة الازمات الصحية
2	رمز المقرر	PH403
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	هندسة صحية 1
7	البرنامج المقدم للدورة	الصحة العامة
8	لغة التدريس	اللغة العربية واللغة الإنجليزية
9	تاريخ الموافقة على المقرر	2022
	وصف موجز للمقرر	ستزود هذه الدورة الطلاب بفهم أساسي: <ul style="list-style-type: none"> • طبيعة الازمة والكارثة الصحية وكيفية ادارتها لتقليل اضرارها الصحية ا. • عملية تقييم المخاطر الناتجة عن الاهمال في هذه المرحلة وتقييمات المخاطر الناتجة عن الازمات الصحية. • تعريفه علي أنواع التهديدات الصحية بما في ذلك المخاطر الكيميائية والبيولوجية والإشعاعية والفيزيائية والمخاطر النفسية والاجتماعية الناتجة عن الازمات وطرق ادارتها. • كما تقدم الحلول والضوابط الإدارية ومعدات الحماية الشخصية والاعتبارات في المساهمة أيضاً في التحكم أو التقليل من الاثار السلبية للازمة.
	الكتب المقررة	عنوان الكتاب المقرر و ISBN/هلال، محمد عبد الغني ، (2008) "مهارات إدارة الازمات" الطبعة الاولى، دار قرطبة للنشر والتوزيع والطباعة، الرياض-السعودية. 3-6. كتب مقترحة 4-6. مجلات دورية ، مواقع إنترنت ، الخ. : 0 : TUhttp://hindawi.com/journals/ahepUOT.0TUhttp://www.library.nur.edu/ejournals/Free.aspx يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
	المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر اربع ساعتين اسبوعيا بمجموع عام طلبة الدورة (28) ساعة.
	طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.
	المستهدف من المقرر	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: <ul style="list-style-type: none"> ▪ يغطي هذا المقرر المعارف والمهارات المرتبطة بإدارة الازمات، حيث يتم بيان مفهوم الازمات وأسبابها وأنواعها، ومراحل الازمة ومراحل إدارتها، ومتطلبات إدارتها، والأسلوب العلمي في التعامل معها، والنصائح المقدمة في هذا المجال.. ▪ يهدف المقرر إلى تكوين المهارات والكفاءات المرتبطة بإدارة الازمات وكيفية تطبيقها على ارض الواقع.
	طريقة التقييم	<ul style="list-style-type: none"> • الامتحان النصفى 30% • الامتحان النهائى 60% • الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية ...10% • درجة النجاح: 60..
	محتويات المقرر	محتوى المقرر الدراسي
	الأسبوع الأول	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ التعريف العام بالمادة والفرق بين الازمة والكارثة.
	الأسبوع الثاني	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ مفهوم الازمة ،دورة حياة الازمة ،التفاعلات الداخلية للأزم
	الأسبوع الثالث	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ المداخل الإدارية المختلفة لدراسة الازمات
	الأسبوع الرابع	المواضيع التي سيتم تغطيتها في الأسبوع



	<ul style="list-style-type: none"> المداخل الادارية والسلوكية للازمات 	
الاسبوع الخامس	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع المداخل الاقتصادية للازمات 	
الاسبوع السادس	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع اساسيات التعامل مع الازمات الصحية 	
الاسبوع السابع	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع الوقاية من الازمات: الإنذار المبكر، الإشارات السلوكية والتنظيمية 	
الاسبوع الثامن	الامتحان النصفى	
الاسبوع التاسع	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع. استراتيجيات المواجهة والتعامل مع الازمات الصحية 	
الاسبوع العاشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع الأساليب التقليدية لمواجهة الازمات 	
الاسبوع الحادى عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع الأسلوب العلمى لمواجهة الازمات : هل تواجه أزمة؟ 	
الاسبوع الثانى عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع متطلبات إدارة الأزمة مرحلة ما قبل الأزمة (الإنذار) 	
الاسبوع الثالث عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع مرحلة ما بعد الأزمة. اتخاذ القرارات في وقت الازمات 	
الاسبوع الرابع عشر	<ul style="list-style-type: none"> المواضيع التي سيتم تغطيتها في الاسبوع قيادة الازمات: التدريب على قيادة الازمات استراتيجيات وتكتيكات المواجهة مع الازمات الصحية حالات دراسية تطبيقية الكورونا مثلا التمارين والحالات الدراسية وتعطى طيلة فترة الدراسة وتناقش نهاية الفصل. 	
الاسبوع السادس عشر	الامتحان النهائى	
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمى وصدور الموافقة من مجلس القسم العلمى.	

Occupational Health & Safety

1	Course name	Occupational Health & Safety
2	Course Code	PH 403
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4

6	Pre-requisite requirements	Environmental Health 1
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the nature of –Coverage hazard assessments process and risk evaluations. also Healthcare workers are exposed to many types of health threats including chemical, biological, radiological, physical (including ergonomic), and psychosocial hazards. As offers Engineering, Administrative Controls, Personal protective equipments and Considerations in the also contribute to control or minimizing.
Textbooks required for this Course:		-Fundamental principles of occupational health and safety – http://www.ilo.org - Handbook of Occupational Hazards and Controls for Public Health Workers
Course Duration		14 weeks
Delivery		Lecture, self-learning. interaction and Group discussion, self-directed activities, field visits.
Course Objectives:		Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand hazards and controls for workers providing public health services • Identify the needs and the procedure for conducting hazard assessments and risk evaluations. • Recognize significant many of hazards that may impact public health personnel. • Identify representations, terms, conditions, with controls and describe how they work. • Recognize For each type of hazards, identify possible engineering, administrative and personal protective equipment controls. • Construct important considerations when selecting personal protective equipment. • Writing the final report of the any type of hazard and understanding the mechanism of its narration in a scientific way. • Develop their abilities to solve the type of threaded and control do workers face. • Implement a different the hierarchy of controls that should be implemented to control hazards in the workplace or work setting.
Course Assessments		<ul style="list-style-type: none"> • Homework and field research, class activities 10% • midterm exam 30% • Final Exam 60% Passing score: 60%
Content Breakdown		Topics Covering
Session 1 (Week 1)		Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction To Occupational Health And Safety Program. • What is healthcare and How many workers get sick or injured? • What types of hazards do workers face?
Session 2 (Week 2)		Topics to be covered in the session (week) <ul style="list-style-type: none"> • hazard assessments process and risk evaluations. • steps of hazard assessment Assignment 2 handed out



Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● The agents of Biological Hazards and occupational infections Hazards. ● Engineering Controls. ● Administrative Controls ● Personal protective equipments
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● General ventilation. ● Chemical Disinfectants of Biological Hazards . ● Considerations in the use of chemical disinfectants.
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Exposure to chemicals hazardous. ● The agents and occupational chemical Hazards. ● Considerations in the use of chemical agents.
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Engineering Controls of chemical Hazards. ● Administrative Controls of chemical Hazards. ● Personal protective equipments for chemical Hazards.
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Exposure to agents Radiation hazards. ● Engineering Controls. ● Administrative Controls. ● Personal Protective Equipment
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Physical Hazards and Controls. ● Engineering Controls. ● Administrative Controls.
Session 10 (Week 10)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Violence and harassment. ● Strategies For Hazard Abatement
Session 11 (Week 11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Environmental health hazards. ● Engineering Controls. ● Administrative Controls.
Session 12 (Week 12)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Occupational injuries. ● Engineering & Administrative Controls. ● Strategies For Hazard Abatement
Session 13 (Week 13)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Risk in ambient work environment. ● Considerations & Preventions and control.
Session 14 (Week 14)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> ● Occupational stress burnout and fatigue. ● preventions Controls. ● Strategies For Hazard Abatement
Session 15 (Week 15)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> ● Unsafe patient handling. ● Engineering Controls. ● Administrative Controls. ● Considerations of safe patient handling.
Session 16 (Week 16)	Final Exam



عنوان الكتاب المقرر و ISBN:مدخل الي رعاية الطفل والاسره - موسوعة الأمومة والطفولة إصدار دار اليازوري الأردن - قاموس العائلة الطبي - منشورات منظمة الصحة العالمية في البرنامج الخاص برعاية الأم والطفل. موارد إضافية: يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.	الكتب المقررة
عدد الساعات المطلوب لتدريس المقرر اربع ساعات اسبوعيا بمجموع عام طلبة الدورة (56)ساعة.	المدة الزمنية للمقرر
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.	طريقة التدريس
عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: <ul style="list-style-type: none"> ▪ فهم الرعاية الصحية للام والطفل وإعطاء الطالب فكرة عن البرامج العالمية الخاصة بها. ▪ تحديد لماذا الاهتمام بهذه الشريحة . ▪ التعرف علي المشكلات الصحية الشائعة بينها. ▪ تحديد المشكلات الغذائية عن الحمل وتأثيرها علي الأم والطفل. ▪ التعرف علي الإعاقة بين الأطفال وعلاقتها بفترة الحمل وزواج القصر. ▪ كتابة مجموعة من التقارير عن الوضع الصحي لرعاية الأم والطفل في بيئة الطالب. ▪ تطوير المنهج الدراسي وفق التطور العلمي في هذا المجال. ▪ تنفيذ مجموعة من حملات التوعية في مجال الامومة والطفولة. 	أهداف المقرر
<ul style="list-style-type: none"> ● الامتحان النصفى 30% ● الامتحان النهائى 60% ● الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية 10% ● درجة النجاح: 60.. 	طريقة التقييم
محتوى المقرر الدراسي	محتويات المقرر
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> • مقدمة والتعريف بالمقرر 	الأسبوع الأول
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ إشراك الأسرة في برنامج الرعاية ▪ دعم الأسرة لبرنامج رعاية الطفل ▪ دور الأسرة في تأهيل الطفل لتلقي الرعاية 	الأسبوع الثاني
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ التعرف بالرعاية الصحية .(اتفاق الماتا - انواع الرعاية وأقسامها - أهدافها) ▪ الرعاية الصحية للأم والطفل. 	الأسبوع الثالث
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ برنامج الرعاية الصحية للام : 1- الرعاية الصحية قبل الحمل . 2- الرعاية الصحية أثناء الحمل وأسباب الخطر في الحمل 	الأسبوع الرابع
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> • الرعاية الصحية أثناء الولادة. ▪ الرعاية الصحية بعد الوضع وأثناء مرحلة النفاس. 	الأسبوع الخامس
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> • الرعاية الصحية للام اثنا فترة الرضاعة (الرضاعة الطبيعية) . الرعاية الصحية للأطفال: 	الأسبوع السادس
الامتحان النصفى	الأسبوع السابع
المواضيع التي سيتم تغطيتها في الأسبوع. <ul style="list-style-type: none"> ▪ الرعاية الصحية في الساعات الأولى من الولادة 	الأسبوع الثامن
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ رعاية الطفل حديث الولادة المريض 	الأسبوع التاسع
	الأسبوع العاشر



المواضيع التي سيتم تغطيتها في الأسبوع ▪ الرضاعة الطبيعية والصناعية الفروق والأضرار والأهمية.	الأسبوع الحادب عشر
المواضيع التي سيتم تغطيتها في الأسبوع ▪ تغذية الاطفال حديثي الولادة (سنة الى 5 سنوات)	الأسبوع الثاني عشر
المواضيع التي سيتم تغطيتها في الأسبوع ▪ اهم المشاكل الصحية بين الأطفال(البرقان)	الأسبوع الثالث عشر
المواضيع التي سيتم تغطيتها في الأسبوع ▪ الإعاقة بين الأطفال (شلل الاطفال- التوحد -الاطفال الخدج)	الأسبوع الرابع عشر
المواضيع التي سيتم تغطيتها في الأسبوع ▪ تجارب عالمية لبرامج رعاية الام والطفل:	الأسبوع الخامس عشر
الامتحان النهائي	الأسبوع السادس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، وفي الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الأستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي.	التغيير والتعديل في المقرر الدراسي

Health And Food Inspection

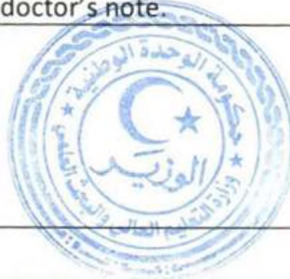
1	Course name	Health And Food Inspection
2	Course Code	PH304
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Biochemistry
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	This course will provide students with a fundamental understanding of the nature of – terminology concepts of Health and food inspection, general & private requirements for health and food establishments. food quality and health safety systems GMP& HACCP. pollutants and waste of establishments. some relevant regulations, laws and specifications. requirements for control& inspections of health facilities and establishments. types and manifestations of spoilage in foods. screening, investigation, procedures and samples required for examination when occurs of food poisoning. methods of sampling in different foods.
Textbooks required for this Course:	<ul style="list-style-type: none"> • Inspection References FDA. www.fda.gov • Handbook of Investigations Operations Manual (IOM)
Course Duration	14 weeks.
Delivery	Lecture, self-learning. interaction and Group discussion, self-directed activities, field visits.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand To Be Terminology Concepts Of Health And Food Inspection. • Identify the General And Private Requirements For Health And Food Establishments. • Recognize the pollutants and waste of establishments. • Knowledge and study of quality and health safety GMP& HACCP systems. • Identify Be aware of which perishable food and unfit for human consumption, harmful to health, and cheated food. • Recognize the inspection and control requirements for facilities related to public health and the tools and equipment used for inspection, Familiarity with the specifications, types and its terms. • Construct of have Knowledge the types and causes of Perishable in different foods and its most important manifestations. • Writing the final report of the any type of Procedures for examination, investigation and sampling in the event of food poisoning. • Knowing the procedures and conditions for withdrawing, preserving and transporting food samples for examination and analysis. • Develop their abilities understanding the mechanism of its narration in a scientific way. • Implement Be sampling methods for different foods.
Course Assessments	<ul style="list-style-type: none"> • periodic duties.0% • Field Training Manual.10% • Midterm exam30% • Final exam 60% <p>is required for a pass in this course60%</p>
Content Breakdown	Topics Covering
(Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction. Terminology concepts of Health and food inspection.



(Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Definition of requirements. ● Requirements general and private establishments related to public health. ● Pollutants & Waste of establishments related to public health.
(Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Health safety and quality systems. ● Good Manufacturing Practice system, GMP.
(Week 4)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Hazard Analysis Critical Control Points system, HACCP. ● Steps and Example
(Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● spoiled or Deterioration and perishable food. ● Situations in which food traded is prohibited. ● Situations in which food is considered unfit for human consumption. ● Food damagingly to health. ● cheated food.
(Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Constituents and Requirements to carry out inspection and control procedures for facilities related to public health.
(Week 7)	Topics to be covered in the session (week) Specifications and definition, types, clauses, importance its.
(Week 8)	Midterm Exam
(Week 9)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● food spoilage, Definition, types and factors reasoned food spoilage.
(Week 10)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● The main manifestations of food spoilage.
(Week 11)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Health control when food poisoning occurs. ● Examination and investigation of the causes of food poisoning. ● Samples to be withdrawn in cases of food poisoning.
(Week 12)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Types of food spoilage. • Chemical, Biological, Physical of food spoilage.
(Week 13)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● The types visitation at Health & Food Establishments. ● Procedures and Considerations of samples, preserving, and transporting food samples for laboratory examination.
(Week 14)	Topics to be covered in the session (week). <ul style="list-style-type: none"> ● Sampling methods for some types of food.
(Week 15)	Topics to be covered in the session (week). <ul style="list-style-type: none"> ● field visits.
(Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.



Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	By the end of the course, the student will be able to Identify food spoilage and its types and factors that cause spoilage. <ul style="list-style-type: none"> ●Recognize the main manifestations of food spoilage. ●Health monitoring methods when food poisoning occurs. The student was acquainted with the methods of examining and researching the causes of food poisoning. <ul style="list-style-type: none"> ● Familiarize yourself with the types of samples that are drawn in cases of food poisoning.

Food Quality and Control

1	Course name	Food Quality And Control
2	Course Code	PH304
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	Healthy food inspection
7	Program offered the course	public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a basic understanding of the nature of: - Examines health issues, scientific understanding of the causes, and potential future approaches to controlling health problems due to food quality and major food control methods in industrialized and developing countries. Topics include how foods and foods deal with bacterial contaminants, industrial additives, and environmental factors; physical, chemical, and biological factors contributing to food safety; the scientific basis for policy decisions; food quality; And health problems resulting from food spoilage and ways to treat it.
Textbooks required for this Course:		1. Quality Assurance for the Food Industry, Vasconcellos, J. Andres 2004, CRC Press, Boca Raton, New York 2. Statistical Quality Control for the Food Industry, Hubbard, Merton R. (Third Edition). 2003, Kluwer Academic/Plenum Publishers, New York,



	<p>3. Food Analysis, Nielsen, Suzanne S. 2010 (Fourth Edition). Springer New York</p> <p>4. Emerging Technologies for Food Quality and Food Safety Evaluation, Boca Raton, FL Cho, Yong-Jin, 2011 CRC Press New York,</p>
Course Duration	56 hours
Delivery	Lecture-based, Group interaction and discussion
Course Objectives:	<p>By the end of the course the student will be able to:</p> <ul style="list-style-type: none"> • know the concepts of food quality as it should be applied to different categories of foods and food processes. • Define and acquiring the student's methods, concepts, practices, and modern food quality control tools. • Familiarize himself with the laws and regulations in force to ensure quality and food safety
Course Assessments	<ul style="list-style-type: none"> • Homework and field research, class activities 10% • midterm exam 30% • Practical exam 20% • Final Exam 40% • Passing score: 60%
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>1. Concept meaning and exposure, estimation, toxicological requirements and risk assessment Food quality, food safety, Definition of food quality, food safety Functions of food</p> <ul style="list-style-type: none"> • Food adulteration • Food hazards. Natural toxins. • Concept of food safety • Responsibility for food quality and safety • Types of adulteration • Scope of food safety and quality
Session 2 (Week 2)	<p>Food laws and regulations</p> <ul style="list-style-type: none"> • National and international food laws <p>Governing bodies</p> <ul style="list-style-type: none"> • Introduction to food laws • National and International food laws • Governing bodies • Importance of food laws • Laws related to food safety
Session 3 (Week 3)	<p>Safety aspects</p> <p>Water and beverages such as soft drink tea, coffee, cocoa</p>
Session 4 (Week 4)	<ul style="list-style-type: none"> • Introduction to safety aspects • Classification of safety aspects <p>Safety aspects for water and beverages</p>
Session 5 (Week 5)	<p>Safety assessment and Safety evaluation</p> <p>Food contaminants and pesticide residues.</p> <p>heat treatments and related processing techniques</p>
Session 6 (Week 6)	<ul style="list-style-type: none"> • Introduction to safety assessment and safety evaluation • Definition of safety assessment • Definition of safety evaluation



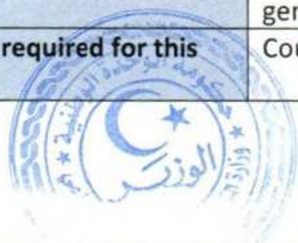
	<ul style="list-style-type: none"> • Introduction to food contaminant • Types of food contaminants
Session 7 (Week 7)	Methods of preventing food contaminants Laws & regulations
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	<p>.Concept of quality attributes</p> <ul style="list-style-type: none"> • Physical, chemical, nutritional, microbial, and sensory. • Concepts of quality management. • Principles of quality control.
Session 10 (Week 10)	<p>1. Quality management systems in Libya; Sampling procedures and plans</p> <p>2. Food Safety organizations dealing with inspection, traceability and Labeling issues, International food standards.</p> <ul style="list-style-type: none"> • Introduction to quality attributes • Concepts of quality attributes
Session 11 (Week 11)	<p>Definition of quality management</p> <ul style="list-style-type: none"> •Principles of quality control •Food safety organization •Quality management system in Libya Laws & regulations
Session 12 (Week 12)	<p>. HACCP</p> <ul style="list-style-type: none"> • Define ,Principles Uses
Session 13 (Week 13)	<p>How HACCP assists the food industry</p> <ul style="list-style-type: none"> • Introduction to HACCP • Definition of HACCP • Principles of HACCP • Role of HACCP in food industry • Use of HACCP • Laws & regulations
Session 14 (Week 14)	<p>7. Quality assurance, Total Quality Management</p> <ul style="list-style-type: none"> • GMP/GHP • GLP, GAP • Sanitary and hygienic practices • Quality manuals, documentation and audits • libyan & International quality systems and standards like ISO and Food Codex • Export import policy and export documentation • Laboratory quality procedures and assessment of laboratory performance
Session 15 (Week 15)	<ul style="list-style-type: none"> • Applications in different food industries. • Introduction to quality assurance • Definition of quality assurance • Definition of total quality management • Role of HACCP in food industry • Application of quality assurance in food industry



Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	<ul style="list-style-type: none"> • To encourage student critical thinking on food and agricultural product quality issues. • To provide students with the opportunity to share ideas on food quality practices and suggest improvements • To provide a learning environment in which students are encouraged to participate in the exchange of ideas and information about food production and quality control.
Course Change	<p>The information in the course outline is correct at the time of publication. The course vocabulary is constantly reviewed to ensure its relevance to the educational change of employment and the needs of the labor market. The professor will try to provide notice of changes to students as soon as possible. The schedule can also be reviewed</p> <ul style="list-style-type: none"> ▪ So that the course is modified according to what the professor of the subject sees of the development, after presenting the changes received to the scientific department and the approval of the council of the scientific department

Health information systems

1	Course name	health information systems
2	Course Code	PH402
3	Course type: general/specialty/optional	Specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	Policies and Health Measures
7	Program offered the course	public Health
8	Instruction Language	Arabic and English language
9	Date of course approval	2022
Brief Description:		The course includes the basic concepts and principles of health information systems, and the related skills related to health and prevention, with a focus on life situations in order to motivate students and interest them in the learning process through the general framework of the course, its standards and controls.
Textbooks required for this Course:		Course book title and ISBN:




	<ol style="list-style-type: none"> 1. Al-Najjar, Fayez Juma Saleh, Management Information Systems. Dar Al-Hamid for Publishing and Distribution, Amman - Jordan, 2010. 2. Yassin, Saad Ghaleb, Management Information Systems. Al-Yazuri Scientific Publishing and Distribution House, Amman - Jordan, 2009. 3. Electronic references, websites...etc.: com.hrdiscussion.www://ht <p>Additional resources:</p> <p>Additional books, papers and links to topics from the Internet may be used at the discretion of the course professor.</p>
Course Duration	56 hours
Delivery	Lectures, group interaction and discussion, self-directed activities, active participation, field visits.....etc
Course Objectives:	<p>Upon completion of the course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Discuss the concept and elements of management information systems. 2. Explain the different types of management information systems. 3. Explain the infrastructure elements necessary for the development of management information systems. 4. Discuss the security threats to management information systems. 5. Explain the strategic planning of management information systems.
Course Assessments	<ul style="list-style-type: none"> • Homework and field research, class activities 10% ▪ midterm exam 30% • Final Exam 60% ▪ Passing score: 60%
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction and introduction to the course
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • ☐ Management Information Systems: Concept and Nature.
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Familiarity with management information systems and their relationship with health organizations.
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Health information systems from a functional perspective
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Attribution systems and administrative decisions and their relationship to health information systems.
Session 6 (Week 6)	<p>Topics to be covered in the week</p> <ul style="list-style-type: none"> ▪ Health information systems and information technology
Session 7 (Week 7)	<p>Topics to be covered in the week</p> <ul style="list-style-type: none"> ▪ Types of management information systems. <p>midterm exam.</p>
Session 8 (Week 8)	Midterm Exam



Session 9 (Week 9)	Topics to be covered in the week. ▪ Information Systems and Information Technology
Session 10 (Week 10)	Topics to be covered in the week ▪ Concept of management information systems. ▪ Strategic planning for management information systems.
Session 11 (Week 11)	Topics to be covered in the week - Types of management information systems. • Databases. • Communications and Networking.
Session 12 (Week 12)	Topics to be covered in the week • Business Ethics and Information Security
Session 13 (Week 14)	Topics to be covered in the week • Management Information Systems Technology
Session 14 (Week 14)	Topics to be covered in the week • Information security and ethical and social responsibility
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

الادارة الصحية

	الادارة الصحية	اسم المقرر الدراسي	1
	PH402	رمز المقرر	2
	تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
	2	الوحدات المعتمدة	4
	2	ساعات التعليم	5
	السياسات والتدبير الصحية	المتطلبات المطلوبة مسبقا	6
	الصحة العامة	البرنامج المقدم للدورة	7

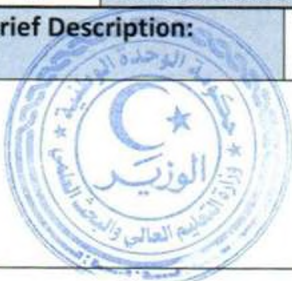
اللغة العربية واللغة الإنجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
تعريف الطالب بالادارة الصحية ونشاتها والانظمة الادارية الصحية في العالم و ربطها بالعلوم الصحية العملية والنظرية	وصف موجز للمقرر	
<p>عنوان الكتاب المقرر و ISBN:</p> <ul style="list-style-type: none"> إدارة الصحة العامة: مبادئ الإدارة القائمة على السكان ، الطبعة الثانية ؛ نوفيك لام ، مورو سي ، ميس جي ؛ جونز وبارتلليت للنشر. 2007 ؛ ردمك --- 13: 9780763738426 بوشبيندر، إسبي، وشانكس، إنانتش (2012). مقدمة في إدارة الرعاية الصحية. جونز وبارتلليت ، الناشر ، الإصدار الثاني يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر. 	الكتب المقررة	
عدد الساعات المطلوب لتدريس المقرر ساعتين اسبوعيا بمجموع طيلة الدورة (28) ساعة	المدة الزمنية للمقرر	
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.	طريقة التدريس	
<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <ul style="list-style-type: none"> فهم الادارة الصحية وإعطاء الطالب فكرة عن البرامج العالمية الخاصة بها. تحديد لماذا الاهتمام بهذه المادة. التعرف علي المشكلات الإدارية الصحية الشائعة بينها. تحديد المشكلات الإدارية و تأثيرها علي الأنظمة الصحية. كتابة مجموعة من التقارير عن الوضع الإداري بالدولة ومحاولة تعريف الطالب علي طريقة وضع الحلول لها. تطوير المنهج الدراسي وفق التطور العلمي في هذا المجال. 	أهداف المقرر	
<ul style="list-style-type: none"> الامتحان النصفى 30% الامتحان النهائى 60% الواجبات المتزلية والبحوث الدراسية الميدانية ، النشاطات الصفية 10% درجة النجاح: 60.. 	طريقة التقييم	
محتوى المقرر الدراسي	محتويات المقرر	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الأول	
<ul style="list-style-type: none"> مقدمة والتعريف بالمقرر. 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثاني	
<p>نظرية النظم :</p> <ul style="list-style-type: none"> النظم الصحية. أمثلة عن الأنظمة الصحية. المستشفى كنظام مفتوح 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث	
<ul style="list-style-type: none"> نظرة عامة على الإدارة الصحية.. 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع	
<p>وظائف الادارة الصحية:</p> <ul style="list-style-type: none"> التخطيط الصحي. التنظيم الصحي. التوجيه و القيادة الإدارية. الضبط و الرقابة الإدارية. تقييم الأداء 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الخامس	
<ul style="list-style-type: none"> إدارة فرق العمل الصحية والعمل ضمن فرق ومهني الصحة العامة 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السادس	
<ul style="list-style-type: none"> السياسة الصحة. الأدلة و الاجراءات الإدارية اللبية 		
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السابع	
<ul style="list-style-type: none"> تصميم البرامج الصحية وتقييمها 		



الأسبوع الثامن	الامتحان النصفي
الأسبوع التاسع	المواضيع التي سيتم تغطيتها في الأسبوع. تمويل الرعاية الصحية والخدمات الصحية والتأمين الصحي
الأسبوع العاشر	المواضيع التي سيتم تغطيتها في الأسبوع إدارة للموارد البشرية الصحية
الأسبوع الحادب عشر	المواضيع التي سيتم تغطيتها في الأسبوع إدارة المعلومات و المؤثرات الصحية. السجلات الطبية. الأرشفة الالكترونية الطبية
الأسبوع الثاني عشر	المواضيع التي سيتم تغطيتها في الأسبوع إدارة تكنولوجيا المعلومات الصحية
الأسبوع الثالث عشر	المواضيع التي سيتم تغطيتها في الأسبوع أخلاقيات الرعاية الصحية التعامل مع المرضى
الأسبوع الرابع عشر	المواضيع التي سيتم تغطيتها في الأسبوع التسويق الصحي
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.

Public Health Pests Control

1	Course name	مكافحة آفات الصحة العامة Public Health Pests Control
2	Course Code	PH405
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Policies and Health Measures
7	Program offered the course	Public Health
8	Instruction Language	English language
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the nature of :



	Public health pests are organisms which attack or annoy us in some way. It is very important to identify pests of significant public health importance and can cause much of diseases.
Textbooks required for this Course:	<p>Book Title & ISBN:</p> <ul style="list-style-type: none"> ▪ Xavier Bonnefoy , Helge Kampen and Kevin Sweeney.2008. Public health significance of urban pests. WHO, ISBN 978 92 890 7188 8. ▪ Additional Resources: - Jerome Goddard, 2012. Public Health Entomology. Press, ISBN 9781439848814 <p>Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.</p>
Course Duration	28 hours.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. give information that it will vary according to the type of pest to be identified, the basic principles of identification are the same for all pest species. 2. give knowledge on impacts of insects and insect-borne diseases on public health and well-being around the globe; insect biology, bloodfeeding, and transmission of human diseases; role of insect borne diseases on human history, socio-economic development, and public health infrastructure. Prerequisite: Freshman or sophomore classification or approval of instructor.
Course Assessments	<p>Assignment 1: 20%</p> <p>Assignment 2: 20%</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction and definitions.
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Biology and Identification of urban and rural Pests
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Pests of Significant Public Health Importance-1 • Cockroaches. • Body, head, and crab lice.
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Pests of Significant Public Health Importance-2. • Mosquitoes. • Ticks:
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Bed bugs • Reptiles and birds.
Session 6 (Week 6)	<p>Topics to be covered in the session (week) .</p> <p>Pests of Significant Public Health Importance-3</p> <ul style="list-style-type: none"> • Various rats and mice. • Various microorganisms, including bacteria, viruses, and protozoans.
Session 7 (Week 7)	<p>Topics to be covered in the session (week).</p> <p>Pests of Significant Public Health Importance-4</p>



	<ul style="list-style-type: none"> • Various mammals. • Weeds
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Insect Pest and Vector Management
Session 10 (Week 10)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Disease Vectors.
Session 11 (Week 11)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Pesticides and Public Health.
Session 12 (Week 12)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Integrated Control • Ensuring the effect of pesticides, rodent poisons, dogs and disinfectants
Session 13 (Week 13)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Combating agricultural pests and their effects on public health
Session 14 (Week 14)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • General methods of pest control. • natural control • applied control • agricultural roads • mechanical control • biological control • Legislative control • chemical control • Integrated pest management and management systems
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Zoonotic Diseases

1	Course name	Zoonotic Diseases
2	Course Code	PH405
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2

5	Educational hours	2
6	Pre-requisite requirements	Infectious diseases
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		<p>The purpose of this course is to introduce students to major zoonotic diseases transmitted between human and animals, epidemiology, means of prevention and control, available diagnostics, available treatments, and associated human and animal regulations for each disease. The diseases presented in class will be chosen based on their significance to public health practitioners.</p> <p>The course will focus principally on zoonotic, emerging, and vector-borne diseases that are recognized on a national or global level.</p>
Textbooks required for this Course:		<ol style="list-style-type: none"> 1. Handbook of Zoonoses: Identification and Prevention by J. L. Colville and D. L. Berryhill. 2007 ISBN: 978-0-323-04478-3. 2. Zoonoses and Communicable Diseases Common to Man and Animals, Third Edition. 2001. Scientific and Technical Publication No. 580, Pan American health organization, Pan American sanitary bureau, regional office of the world health organization, 525 twenty-third street, n.w., washington, d.c. 20037 U.S.A. 3. Handbook of Zoonoses: Identification and Prevention by J. L. Colville and D. L. Berryhill. 2007 ISBN: 978-0-323-04478-3, 4. Human-Animal Medicine: Clinical Approaches to Zoonoses, Toxicants and Other Shared Health Risks by Rabinowitz and Conti. 2009 ISBN: 978-1416068372
Course Duration		28 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<ol style="list-style-type: none"> 1. Recognize and understand the zoonotic potential of presented diseases that are of great public health concern. 2. Describe the importance of zoonotic diseases in public health. 3. Understanding etiology, distribution (occurrence), reservoir, mode(s) of transmission, incubation period and the infectious agent life cycle (if applicable), disease diagnosis and identification, period of communicability, population susceptibility, and measure(s) of control. 4. List populations that are particularly vulnerable to specific zoonotic diseases discussed in the course.
Course Assessments		Assignment 1: 20% Assignment 2: 20% Final Exam: 60% 60% is required for a pass in this course.
Content Breakdown		Topics Coverage
Session 1 (Week 1)		Introduction and important definitions of zoonosis
Session 2 (Week 2)		Principles of Zoonoses
Session 3 (Week 3)		Viral Diseases: Rabies, AIDS



Session 4 (Week 4)	Viral Diseases: Eastern Equine Encephalitis, Western Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, West Nile Virus.
Session 5 (Week 5)	Viral Diseases: Influenza, Hantavirus, Lymphocytic Choriomeningitis, Monkeypox
Session 6 (Week 6)	Bacterial Diseases: Rat-bite fever, Staphylococcosis, Vibriosis, Yersiniosis
Session 7 (Week 7)	Bacterial Diseases: Anthrax, Cat Scratch Disease, Leptospirosis. Bacterial Diseases: Tuberculosis, Brucellosis.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Bacterial Diseases: Pasteurellosis, Psittacosis, Listeriosis, Q Fever.
Session 10(week10)	Bacterial Diseases: Campylobacteriosis, Colibacillosis, Salmonellosis, Botulism
Session 11(week11)	Vector Borne Bacterial Diseases: Lyme Disease, Rocky Mountain Spotted Fever, Ehrlichiosis
Session12(week12)	Vector Borne Bacterial Diseases: Leishmaniasis, Plague, Tularemia
Session13(week 13)	Parasitic Disease: Protozoans: Babesiosis, Cryptosporidiosis, Giardiasis, Toxoplasmosis
Session 14 (Week 14)	Parasitic Diseases: Arthropod Infestations; and Fungal Diseases:
Session 15(week15)	Dermatomycosis. TSEs: BSE, Chronic Wasting Disease, Scrapie.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	1.skill provides the opportunity to acquire a broad knowledge and understanding of the origins and transmission of the major zoonotic diseases 2. the One Health challenges that exist in understanding and controlling them. Using specific examples, the course aims to equip 3. students with the knowledge and skills needed to apply critical evaluation of the human and veterinary public health threats these diseases pose.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Graduation Research project

1	Course name	Graduation Research project
2	Course Code	PH408

3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Research Methods and Data Analysis
7	Program offered the course	Public Health
8	Instruction Language	English
9	Date of course approval	2022

Parts of Research Paper

1. Title Page
 - For the cover page, each department has a distinct color as the following:-
 - Title page must contain the following:-
 - University name (Al Asmarya University) (font size 18 and bold in golde colour)
 - Faculty name (Faculty of Public health and Nursing) (font size 18 and bold in golde colour)
 - Department name (Department of Public Health or Department of Nursing) (font size 18 and bold in golde colour)
 - Title of the thesis (font size 16 and bold in golde colour)
 - A Thesis Submitted in Fulfilment of the Requirements for the Degree of Bachelor of (Public Health or Nursing) (font size 14 and bold in golde colour)
 - Students' names (font size 14 and bold in golde colour)
 - Supervisor name (font size 14 and bold in golde colour)
 - Academic year (e.g. 2017/2018) (font size 14 and bold in golde colour)
2. Font Type and Size
 - All text in the report one font style should be used in throughout the thesis and should be (Times New Roman). Font size of the entire thesis should be 12 except captions for tables and figures, tables and references, which is 11 in size.
 - The font size of Heading 1 (e.g. Chapters) should be 14 and bold and sub headings should be 12 and bold.
3. Page Layout and Margins
 - The Page Layout of entire thesis must be portrait and in A4 size format. Landscape orientation may be used to fit figures or tables. The top, bottom, and right margins should be 2.5 cm and the left margin should be 3 cm.
4. Pagination
 - Page numbers should be cantered at the bottom of the page. Preliminary pages (Dedication to list of Abbreviations) should be numbering in small roman numerals (i, ii, iii, etc.). The subsequent pages should be numbering numerals (1, 2, 3, etc.).
5. Latin Terms



- Latin terms are always given in italics.
6. Abstract
- The abstract is a brief summary of the thesis. It presents all the major elements of the work in a highly condensed form. The length of the abstract should not exceeding 300 words. It includes background about the research topic, research objective, research methods, results, conclusion and recommendation.
7. Acknowledgement
- The researcher expresses his gratitude and appreciation to the people who have a role in completing the study.
8. Table of contents
- Contains a list of contents included in the study of research. The table of contents contains two main things: the title and the page where it could be found
 - Make sure that the title of each contents should be self-explanatory and should not leave the reader confused.
 - Write chapter and sub-topics below.
9. List of Figures
- Includes all tables, figures, graphs , photos, charts , and drawing included in the research
 - Each presentation should be properly labeled with pagination.
10. CHAPTER I
- A. *Introduction*
- This is the first part of the research paper
 - This is where the researcher provide the topic of the research paper where the context in terms of content of the research paper is given
- B. *Problem of the study*
- States the main problem that the researcher is trying to solve
 - It follows the formulation of the title and should be faithful to it
 - It specifically points the important questions that the study needs to answer
 - It also serves as the bases for the questionnaires.
- C. *Objectives of the study*
- The researcher should state the objectives of this study.
- D. *Significance of the Study*
- The questions to answer here is" Why conduct the research?"
 - The researcher have to identify who will benefit from the research and how they will be benefited.
 - This should match with the recommendation.
11. CHAPTER II: LITERATURE REVIEW
- This is where you will use your note, Literature review should cover the general and specific information.
 - Should not lift words from other sources, This will require your command of language and writing skills such as summarizing, paraphrasing and writing indirect speeches.



- Data and information can be taken from books, magazines, studies and newspapers that can be related to your research.
- Include the surnames of authors and the publication date of their work who provided sources for your study.
- Should include a title for the *previous studies*, and the title of the study, objective, methodology and the most important results should be written.

12. CHAPTER III. METHODS AND PROCEDURES

- *Research Design*
 - Discuss the kind of research used in the study. Should answers why the method used is appropriate for the study.
 - Example of research design: Descriptive survey method
- *Study Sample*
 - Defines how the population samples are chosen.
- *Scope and limitation of the Study*
 - Determines the coverage of the research and all the things that it will cover in order to be specific.
 - It includes the following:
 - ✓ Actual place where the study will be conducted
 - ✓ Duration of the conduct of the study
 - ✓ Limit of the number of respondents.
- *Procedure:*
 - Outlines the detailed methodology that was carried out to process the samples in your study.
- *Statistical analysis of data*
 - Shows statistical software and tests used in this study.
- *Ethics of study*
 - Ethical permit must be written to conduct this study.

13. CHAPTER IV : RESULTS OF DATA ANALYSIS

- Presents all the data gathered by tabulating all the gathered information.
- Aside from the tables, an interpretation of each presented data should follow. This will serve as the basis of the summary of findings.

14. CHAPTER V: DISSECTION , CONCLUSIONS AND RECOMMENDATIONS

- *Dissection*
 - Interpret and explain your results and compare them with others findings.
- *Conclusions*
 - Concludes the major contributions of the significant findings.
- *Recommendations*
 - This should be directly based on the significance of the study.
 - This also includes recommended actions that should be done after the conduct of the study such as further assessment of the subject, focus on other factors etc.



CITATION AND REFERENCING

- Student follows the Harvard for literature citation and referencing. Students are highly advised to use reference manger software like Endnote or Mendeley.
- Examples of Harvard citation and referencing:-
- Journal article
- In-text citation: HbA1c levels are elevated well in advance of the clinical development of type 2 diabetes (Pradhan et al.,2007).
- In reference list: Pradhan, A.D., Rifai, N., Buring, J.E. & Ridker, P.M. 2007. Haemoglobin A1c predicts diabetes but not cardiovascular disease in nondiabetic women. The American journal of medicine, 120(8):720-727.
-
- Websites
- In-text citation: Haemoglobin A1C testing (A1C) is the test used to measure your average blood glucose level over an extended period of time (2to 3 months) (Simmons,2014).
- In reference list: Simmons, J. 2014. Haemoglobin A1C Testing. [Online]. Available: <https://type2diabetes.com/diagnosis-and-testing/hemoglobin-a1c/>[Accessed21November 2018].
- Thesis
- In-text citation: The rate of false positive cells can be reduced by targetting more than one chromosomal abnormality (Kasprzyk,1998).
- In reference list: Kasprzyk, A. 1998. Investigation of clonality and minimal residual disease in haematological malignancy using fluorescent in situ hybridization. PhD, University of London.
- Book
- In-text citation: Giardia transmission occurs by the fecal-oral route, either directly, via person to person contact or indirectly, via contamination of surface water or food (Satoskar,2009).
- In reference list: Satoskar, A.R. 2009. Medical parasitology. Texas/USA: CRC Press.



7- قسم معامل الاسنان



Biochemistry

1	Course name	Biochemistry
2	Course Code	DL200
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	non
7	Program offered the course	chemistry
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Enzymes , Defintion , factors effects of enzymes , Carbohydrate, Defintion , Structure , Metabolism of Carbohydrate, Lipids and Fats , Defintion, Classifictions, MetABOLISM OF Lipids, Protien , Amino Acids, Defintion , Classifications, Structure of Amino Acids, Function of Amino Acids, Nuclic Acids, Defintion , Classifications , DNA, RNA Strcture, Functions of Nuclic Acids, Hormons , Defintion , Classifictions, Function of Hormons.
Textbooks required for this Course:		Book Title & ISBN: Fundamentals of Biochemistry For medical Students,J.L Jain, Revised edition. Additional Resources: Text book of Biochemistry with clinical Correlations , Sixth edition, Thomas M. Devlin.
Course Duration		28 weeks
Delivery		Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play,Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning.
Course Objectives:		At the completion of this course the student will be able to: 1. Identify the basic biomolecules within human body: Carbohydrates, proteins, and lipids. 2. Understand the basic concepts of biochemistry of Carbohydrates, proteins, and lipids: digestion, absorption and metabolism. 3. Recognize the process of energy conservation and consumption, and the integration of metabolic processes within the body. 4. Recognize the fact that biochemical processes in the human body are adapted to need.
Course Assessments		Assignment 1: 15....% Assignment 2: 15....% Final Exam: 50....% A 60 .% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course.



	Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to Enzymes: Overview classification, nomenclature, coenzymes, intracellular enzymes enzyme specificity, catalytic site,
Session 2 (Week 2)	Topics to be covered in the session (week) effect of substrate concentration, temperature, pH, on enzyme kinetics, Assignment 2 handed out
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • effect of substrate concentration, temperature, pH, on enzyme kinetics, • • use of enzymes in clinical medicine
Session 4 (Week 4)	Topics to be covered in the session (week) Biological oxidation: <ul style="list-style-type: none"> • Respiratory chain & ATP production • Cytochrome system
Session 5 (Week 5)	Topics to be covered in the session (week) Metabolism of carbohydrates: <ul style="list-style-type: none"> • Digestion & absorption of carbohydrates,
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • metabolism of fructose, gluconeogenesis
Session 7 (Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • disorders of carbohydrate metabolism, special reference to diabetes mellitus.
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Citric acid cycle, (TCA cycle)
.....	
Session 10 (Week 10)	<ul style="list-style-type: none"> • reaction of oxidation of pyruvate, condensation with oxaloacetic acid • formation of citrate, isocitrate & intermediate of TCA cycle.
Session 11 (Week 11)	Fat metabolism: <ul style="list-style-type: none"> • Metabolism of fatty acids, B-oxidation
Session 12 (Week 12)	<ul style="list-style-type: none"> • synthesis of fatty acids, phospholipids biosynthesis, sphingo-myelin biosynthesis, TAG (Triacyl glycerol synthesis), lipolysis
Session 13 (Week 13)	<ul style="list-style-type: none"> • ketone bodies formation
Session 14 (Week 14)	<ul style="list-style-type: none"> • metabolism, transportation of lipids in human body by lipoproteins & atherosclerosis
Session 15 (Week 15)	Protein and amino-acid metabolism: <ul style="list-style-type: none"> • protein digestion and absorption, transamination, deamination
Session 16 (Week 16)	<ul style="list-style-type: none"> • urea formation, phenylketonuria, alkaptonuria, albinism, Kwashiorkor and marasmus etc.
Session 17 (Week 17)	<ul style="list-style-type: none"> • Porphyrin & haem biosynthesis, bilirubin formation & jaundice
Session 19 (Week 19)	<ul style="list-style-type: none"> • Creatinine, histamine, serotonin
Session 20 (Week 20)	Nucleic acid metabolism: <ul style="list-style-type: none"> • Cellular distribution of DNA & RNA and their role in protein synthesis
Session 21 (Week 21)	<ul style="list-style-type: none"> • Purine and pyrimidine metabolism • uric acid biosynthesis & gout, B alanine excretion
Session 22 (Week 22)	Hormones: <ul style="list-style-type: none"> • The endocrine system & types of hormones



Session 23(Week 23)	Action of salivary amylase on starch digestion. Free & total acidity of gastric juice sample. Tests for special amino-acids in egg & milk.
Session 24 (Week 24)	Quantitative detection of abnormal constituents present in urine e.g. sugar/glucose, protein, ketone bodies, bile salts & blood.
Session 27 (Week 27)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Organic Chemistry

1	Course name	Organic Chemistry
2	Course Code	DL206
3	Course type: /general/specialty/optional	General
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	General Chemistry
7	Program offered the course	Dental technology
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	This course will provide students with a fundamental understanding of the nature of molecular bonds, hybridization, polarity, hydrocarbons, halogenated hydrocarbons, oxygenated hydrocarbons, carbonyl compounds, carboxylic acids and their derivatives, esters, amides, anhydrides and nitrites, nitrogenated compounds (Amines) and simple Heterocyclic compounds.
Textbooks required for this Course:	Additional textbooks, . Golan, D., et. al., eds. <i>Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy</i> . Philadelphia, PA: Lippincott Williams and Wilkins, 2004
Course Duration	28 week 28 weeks, 2 hours per day
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand To fundamental understanding of the nature of molecular bonds, hybridization, polarity, hydrocarbons. • Implement a carbonyl compounds, carboxylic acids and their derivatives, esters, amides, anhydrides and nitrites, nitrogenated compounds (Amines) and simple Heterocyclic compounds
Course Assessments	Assignment 1: 15....% Assignment 2: 15....% Final Exam: 50....% A 60 .% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) Carbon Compounds and Chemical Bonds <ul style="list-style-type: none"> • The structural Theory of Organic Chemistry • Chemical Bonds: The Octet Rule • Writing Lewis Structure • Hybridization sp^3, sp^2, sp
Session 2 (Week 2)	Topics to be covered in the session (week) Alkanes: Nomenclature <ul style="list-style-type: none"> • Introduction to Alkanes and cycloalkanes • Shapes of Alkanes • IUPAC Nomenclature of Alkanes
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Nomenclature of Cycloalkanes • Physical Properties of Alkanes and Cycloalkanes • Chemical Reactions of Alkanes
Session 4 (Week 4)	<ul style="list-style-type: none"> • Synthesis of Alkanes and Cycloalkanes



Session 5 (Week 5)	Topics to be covered in the session (week) Alkenes and Alkynes I: Properties and Synthesis. <ul style="list-style-type: none"> The (E)—(Z) System for Designating Alkene Diastereomers Cycloalkenes.
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> Synthesis of Alkenes via Elimination Reactions Synthesis of Alkynes by Elimination Reactions The Acidity of Terminal Alkynes
Session 7 (Week 7)	Topics to be covered in the session (week) Alkenes and Alkynes II: Addition Reactions
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 10 (Week 10)	Topics to be covered in the session (week) • Introduction: Additions to Alkenes Addition of Hydrogen Halides to Alkenes: Markovnikov's Rule Stereochemistry of the Ionic Addition to an Alkene Addition of Sulfuric Acid to Alkenes
Session 11 (Week 11)	Addition of Water to Alkenes: Acid-Catalyzed Hydration
Session 12 (Week 12)	Alcohols from Alkenes Through Oxymercuration-Demercuration: Markovnikov Addition
Session 13 (Week 13)	Alcohols from Alkenes through Hydroboration-Oxidation: Anti-Markovnikov Syn Hydration
Session 14 (Week 14)	Addition of Bromine and Chlorine to Alkenes Halohydrin Formation
Session 15 (Week 15)	Addition of Bromine and Chlorine to Alkynes Addition of Hydrogen Halides to Alkynes Oxidative Cleavage of Alkynes
Session 16 (Week 16)	. Alcohols and Ethers Structure and Nomenclature
Session 17 (Week 17)	Physical Properties of Alcohols and Ethers
Session 19 (Week 19)	Synthesis of Alcohols Reactions of Alcohols
Session 20 (Week 20)	Synthesis of Ethers Reactions of Ethers
Session 21 (Week 21)	Aromatic Compounds



	<p>Nomenclature of Benzene Derivatives</p> <p>Reactions of Benzene</p> <p>Halogenation of Benzene</p> <p>Nitration of Benzene</p> <p>Sulfonation of Benzene</p>
Session 22 (Week 22)	<p>Friedel-Crafts Alkylation</p> <p>Friedel-Crafts Acylation</p> <p>Limitations of Friedel-Crafts Reactions</p>
Session 23(Week 23)	<p>Aldehydes and Ketones</p> <ul style="list-style-type: none"> • Nomenclature of Aldehydes and Ketones • Physical Properties • Synthesis of Aldehydes
Session 24 (Week 24)	<p>Synthesis of Ketones</p> <p>The Addition of Organometallic Reagents: The Reformatsky Reaction</p> <p>Oxidation of Aldehydes and Ketones</p> <p>Chemical Analysis of Aldehydes and Ketones</p>
Session 25 (Week 25)	<p>Carboxylic Acids and Their Derivatives.</p> <p>Nomenclature and Physical Properties</p>
Session 26 (Week 26)	<p>Preparation of Carboxylic Acids</p> <p>Acid Chlorides</p> <p>Carboxylic Acid Anhydrides</p>
Session 27 (Week 27)	<p>Esters</p> <p>Amides</p>
Session 28 (Week 28)	<p>Amines</p> <ul style="list-style-type: none"> • Nomenclature • Physical Properties and Structure of Amines • Preparation of Amines • Reactions of Amines • Analysis of Amines
Session 29 (Week 29)	<p>Phenols and Aryl Halides:</p> <p>Structure and Nomenclature of Phenols</p> <p>Synthesis of Phenols</p> <p>Reactions of Phenols as Acids</p>
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note</p>



Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised

Physiology

1	Course name	Physiology
2	Course Code	DL202
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	biology
7	Program offered the course	Dental Technology
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course will provide students with understanding of the Introduction to physiology, Nerve. Membrane potentials and action potentials , Muscle, embrane potential, Contraction of skeletal muscle , Neuromuscular transmission, Contraction of smooth muscle, Heart ,muscle, the heart as a pump , Rhythmical excitation of the heart, The Electrocardiogram , Gastrointestinal hormones, Gastrointestinal secretion.
Textbooks required for this Course:	Book Title & ISBN: 10:0721666353 Additional textbooks, . Golan, D., et. al., eds. <i>Principles of Phisiology: The Pathophysiologic Basis of Drug Therapy</i> . Philadelphia, PA: Lippincott Williams and Wilkins, 2004
Course Duration	28 week 28 weeks, 2hours per day
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop. Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning.

Course Objectives:	By the end of this course the student will be able to: 1. Demonstrate an understanding of the physiology and basic regulatory concepts related to the functioning of life processes. The life processes to be studied in IPHY 3470 will include Cell Physiology, Neurophysiology, Endocrinology, Muscle Physiology, and Immunology. 2. Name the key physiology themes (homeostasis & regulation, structure/function relationships, compartmentation, biological energy transformation, and communication & information flow), and be able to provide or recognize examples of each from the different organ systems.
Course Assessments	Assignment 1: 15....% Assignment 2: 15....% Final Exam: 50....% A 60 .% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) • Introduction to Introduction to physiology The cell & it is function Transport through the cell membrane
Session 2 (Week 2)	Topics to be covered in the session (week) • Nerve • Membrane potentials and action potentials
Session 3 (Week 3)	Topics to be covered in the session (week) • Muscle • Membrane potential • Contraction of skeletal muscle • Neuromuscular transmission • Contraction of smooth muscle
Session 4 (Week 4)	The heart Heart muscle, the heart as a pump Rhythmical excitation of the heart The Electrocardiogram
Session 5 (Week 5)	Topics to be covered in the session (week) The circulation Overview of the circulation, medical physics of pressure flow resistance Special functions of the systemic circulation arteries Veins and capillaries Cardiac out put Heart Sounds Capillary fluid exchange interstitial fluid dynamics and lymph flow Local control of blood flow by the tissues Nervous control of the circulation Role of the kidney in long term regulation of arterial Pressure and in hypertension

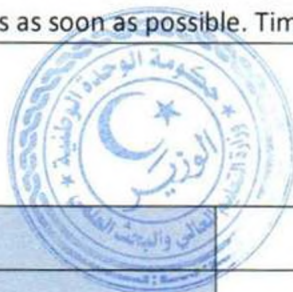


Session 6 (Week 6)	Topics to be covered in the session (week) • The kidney Nephron structure
Session 7 (Week 7)	Topics to be covered in the session (week) Types of nephron Basic theory of nephron function
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 10 (Week 10)	Topics to be covered in the session (week) • Formation of the urine by the kidney Composition of glomerular filtrate how to Measure glomerular filtration rate Control of glomerular filtration rate renal auto regulation Absorptive capabilities of different tubule segments Concentration and diluting of the urine Acid base balance
Session 11 (Week 11)	Blood cells RBCs, WBCs, platelet Immunity allergy blood groups and transfusion
Session 12 (Week 12)	Homeostasis and blood coagulation Types of anemia
Session 13 (Week 13)	Respiration Pulmonary ventilation
Session 14 (Week 14)	Pulmonary circulation
Session 15 (Week 15)	Transport of oxygen and carbon dioxide between the alveoli and the tissue cells
Session 16 (Week 16)	Regulation of respiration
Session 17 (Week 17)	The gastrointestinal tract Structure of gastrointestinal tract Innervations of GIT
Session 19 (Week 19)	Gastrointestinal hormones Gastrointestinal secretion
Session 20 (Week 20)	Digestion and absorption of proteins Digestion and absorption of lipid
Session 21 (Week 21)	Digestion and absorption of carbohydrates Absorption of salts and water along the GIT
Session 22 (Week 22)	Endocrinology & reproduction Nature of hormone Mechanisms of hormonal action Pituitary hormones
Session 23(Week 23)	Thyroid gland & thyroid hormone The adrenocortical hormone Insulin, glucagon & diabetes mellitus Parathyroid hormone
Session 24 (Week 24)	Male reproductive functions the male sex hormones Female reproductive system
Session 25 (Week 25)	The nervous system Organization of the nervous system Sensory receptors, neural circuits for processing information, tactile and position senses



Session 26 (Week 26)	Neurophysiology of vision The sense of hearing The chemical senses of taste and smell
Session 27 (Week 27)	Metabolism and temperature regulation Metabolism of carbohydrates Lipid and protein metabolism Energetic, metabolic rate and regulation of body temperature
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised

Dental Prosthodontics



1	Course name	Dental Prosthodontics
2	Course Code	DL205
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	No requirements
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		The general prosthodontics course is an important introduction to the rest of the prosthetics subjects that the student will study later, through which he learns about the different types of prosthodontics (movable and fixed) and the materials used in their manufacture.

Textbooks required for this Course:	Book: Textbook of Prosthodontics, 2e Paperback – 18 July 2017 by V Rangarajan (Author), T V Padmanabhan (Author)
Course Duration	28 Weeks
Delivery	Lectures, small discussion Groups, seminars, project-based learning (PBL), videos, practical (laboratory).
Course Objectives:	<p>Upon completion of this course, the students will be able to :</p> <ul style="list-style-type: none"> • Demonstrate basic knowledge of principles and technique pertaining to the treatment of partially edentulous patients. • Diagnose and treatment plan partially edentulous cases for proper Prosthodontic restoration of form and function. • Provide current information on standards of care for the management of patients requiring fixed prosthodontic treatment. • Perform all preclinical procedures required to design/fabricate a Fixed (crown and Bridge).
Course Assessments	<p>Midterm: 40 %</p> <p>Final Exam: Theoretical 30%, Practical 30%</p> <p>60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1-2)	Define, describe, classify and identify the different dental techniques, concepts, procedures and materials for fixed prosthesis.
Session 2 (Week 3-4)	Correlate between functions & components of different oral structures, dental techniques, concepts, procedures and materials for fixed prosthesis.
Session 3 (Week 5)	Demonstrate and perform skills for hands-eye coordination during various procedures and techniques for fabrication and repairing of various fixed prosthesis.
Session 4 (Week 6)	Introduction and orientation. • Contents, guidelines, assessment tools, do's and don'ts in this semester. • Types of FPD. • Indications and contraindications in FPD • Steps involved in fabricating fixed partial denture.
Session 5 (Week 7)	Alginate impression and diagnostic cast. • Objectives of impression making for FPDs. • Materials used for making impression for FPDs and in detail about alginate. • Applications of diagnostic casts in FPDs.
Session 6(Week 8)	Retention and resistance and its theoretical and Practical attainment. • Definition of retention and resistance in fixed partial dentures. • Factors affecting retention and resistance in FPDs.
Session 7 (Week 9)	Types of materials used in the manufacture of dental prostheses. Materials used in construction of Prosthodontics



Session 8 (Week 10)	The holder of the special edition for the complete set. Partial kit holder.
Session 9 (Week 11)	PBL Assessment (Project Based Learning)
Session 10 (Week 12)	Midterm Exam
Session 7 (Week 13-14)	Pouring the cast - Casting the mold in the normal way and the formwork method. - Separate the edition from the template.
Session 8 (Week 15-16)	Record blocks.
Session 9 (Week 17-18)	Base plate Wax occlusal rim
Session 10 (Week 19-20)	Articulation devices: Articulators
Session 11 (Week 21-22)	Casting the mold in the normal way and the formwork method.
Session 12 (Week 23)	Practical final exam
Session 13 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	Students are expected to attend every session, lecture, and lab. Absences are permitted only if there is unavoidable reason.
Generic Skills	By the end of the course, the student be able to: <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Criticize his/her work. - Think critically to solve the problem may be faced during the work. - Implement of dental laboratory instruments and devices. - Use the Internet for preparing scientific researches. - Write a report about the steps that implemented in the laboratory.
Course Change	The content of the course is revised on an ongoing basis to ensure its relevance to the changes of new materials or techniques. The educator will update the contents accordingly.

Complete Denture removable I

1	Course name	Complete Denture Removable I
2	Course Code	DL302
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	none

7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course is designed for the 3 th year undergraduate dental students. It will provide the students with the necessary theoretical and practical knowledge in the field of complete Removable prosthetics rehabilitation for patients.
Textbooks required for this Course:		Book: Textbook of Complete Dentures. Arthur O. Rahn. Sixth edition, Quintessence Publishing.
Course Duration		28 Weeks
Delivery		Lectures, small discussion Groups, seminars, project-based learning (PBL), videos, practical (laboratory).
Course Objectives:		Upon completion of this course, the students will be able to: <ul style="list-style-type: none"> • list the anatomical landmarks of completely edentulous arch. • Describe the different types of articulators. • Define flasking ,packing and curing. • Describe how to repair fractured complete and RPD • Outline the responsibilities of both technician and dentist.
Course Assessments		Midterm: 40 % Final Exam: Theoretical 30%, Practical 30% A 60 % is required for a pass in this course.
Content Breakdown		Topical Coverage
Session 1 (Week 1-2)		Introduction & regulations of the course.
Session 2 (Week 3-4)		Anatomical landmarks of edentulous jaws
Session 3 (Week 5-6)		Impression trays and materials.
Session 4 (Week 7-8)		Record blocks and Mounting.
Session 5 (Week 9)		PBL Assessment (Project Based Learning)
Session 6 (Week 10)		Midterm Exam
Session 7 (Week 11-12)		Articulators.
Session 8 (Week 13-14)		Mounting.
Session 9 (Week 15-16)		Arrangement of artificial teeth in different occlusal schemes occlusion.
Session 10 (Week 17-18)		Steps of complete denture processing.

Session 11 (Week 19-20)	Lab Remount.
Session 23 (Week 27)	Practical final exam
Session 26 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	Students are expected to attend every session, lecture, and lab. Absences are permitted only if there is unavoidable reason.
Generic Skills	By the end of the course, the student be able to: <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Criticize his/her work. - Think critically to solve the problem may be faced during the work. - Implement of dental laboratory instruments and devices. - Use the Internet for preparing scientific researches. - Write a report about the steps that implemented in the labortory.
Course Change	The content of the course is revised on an ongoing basis to ensure its relevance to the changes of new materials or techniques. The educator will update the contents accordingly.

Research Methodology

1	Course name	Research Methodology
2	Course Code	DL306
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	No requirements
7	Program offered the course	Dental Technology
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	This course focuses on the framework of the research process and to the use of basic statistics in the health field and the interpretation of results for improvement of levels of care an evaluation of action taken
Textbooks required for this Course:	Mangment Research Methadology, 2006 Pearson Education.
Course Duration	2 hours per weekX 12 = 24 h
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <p>a. Utilize the steps of the research process.</p> <p>b. Recognize the importance of statistical analysis in their field of work</p> <p>c. Utilize descriptive statistics to analyze data from Medical Science project.</p> <p>learning outcomes Knowledge and understanding</p> <ul style="list-style-type: none"> - Develop awareness on the importance of research in building nursing knowledge and guiding practice. - Discuss the research process and each of its steps. - Describe the characteristics of a researchable problem. - Recognize how to state research aim, questions and hypotheses. - Recognize the different types of research design. - Identify different methods of data collection. - Recognize sampling technique. <p>Cognitive skills (thinking and analysis).</p>
Course Assessments	<p>Assignment 1: 10.%</p> <p>Assignment 2: 20%</p> <p>Final Exam: 60% Daily Assessments: 10%</p> <p>A 50 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <p>introduction.</p>
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Definition of research <p>Assignment 2 handed out</p>
Session 3 (Week 3)	<p>Topics to be covered in the session The major characteristics of research</p>
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <p>Involvement in health research</p>
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Guidelines for applied health research
Session 6 (Week 6)	<p>1. Topics to be covered in the session (week) An overview about research steps.</p>
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Purpose of health research. • Type of research. • Sources of research. <p>Development of research proposal</p>



Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 10(Week 10)	Topics to be covered in the session (week) Steps of research. <ul style="list-style-type: none"> • Step (1) formulating the problem statement. • The information of problem statement. • Step (2) formulating objectives and research questions. • The important of formulating research question. • Reasonability of research question. • The disability of research question.
Session 14(Week 14)	<ul style="list-style-type: none"> • . Step (3) literature review. • The preparatory phase. • The data collection phase. • The Different type of literature review.
Session 16(Week 16)	<ul style="list-style-type: none"> • The source of literature review. • Searching for literature review. • Step of writing a literature review. • Guide lines for making a reference list.
Session 17(Week 17)	<ul style="list-style-type: none"> • Step (4) study types and designs. • Exploratory studies. • Descriptive studies. • Comparative studies. • Intervention studies. • Define exploratory study. • Steps of descriptive study. • Types of comparative study. • Case –control study.
Session 18(Week 18)	<ul style="list-style-type: none"> • Cohort study. • Advantages and disadvantages of each type of study. • Intervention study types. • Experimental study. • Aims of experimental study. • Study designs. • Qualitative design. • Quantitative design..
Session 19(Week 19)	<ul style="list-style-type: none"> • . Step of selection data collection techniques. • Methods of data collection techniques. • Using available information. • Observation. • Interviewing. • Self-administrated questionnaire. • Focus group discussion. • Data collection tech. and tools.



	<ul style="list-style-type: none"> • Advantages and disadvantages of data collection tech. • Bias in research. • Definition of bias. • Types of bias. • Bias in information collection. • Defective in instrument. • Observer bias. • Bias in selection. • Maximizing validity of research.
Session 20(Week 20)	<ul style="list-style-type: none"> • Variables. • Numerical variables. • Categorical variable. • Types of variables. • Dependent and independent variables. <p>Confounding variable.</p>
Session 21(Week 21)	<ul style="list-style-type: none"> • Design of questionnaire. • Steps of design questionnaire. • Step (1) content. • Step (2) formulation questions. • Step (3) sequence of questions. • Format of questionnaire. <p>Translation of questionnaire.</p>
Session 23(Week 23)	<ul style="list-style-type: none"> • Sampling definition. • Sampling methods. • Qualitative sampling: • Convenience sampling. • Maximum variation sampling. • Snowball sampling. • Quantitative sampling methods: • Simple random sampling. • Systematic sampling. <p>Stratified sampling.</p>
Session 26(Week 26)	<ul style="list-style-type: none"> • Structure of research paper. • Introduction. • Method. • Result. • Discussion. • Summary. • Title page / cover. • Table of contents. • Reference style. • Presentation skills: • What makes a good presentation?



	<ul style="list-style-type: none"> • Useful phrases for presentation. • Steps towards effective presentation. • Pronunciation and intonation. • Delivery skills. <p>Techniques in questioning</p>
Session 27(Week 27)	Final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Laboratory Safety

1	Course name	Laboratory Safety
2	Course Code	DL305
3	Course type: /general/specialty/optional	general
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	No requirements
7	Program offered the course	Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
Brief Description		The course teaches student the laboratory safety and precautions of using the devices and instrumentations.
Textbooks required for this Course:		- Sibel Uzun, Fatih Özçelik, Laboratuvar Güvenliği El Kitabı, Tüketici Güvenliği Ve Halk Sağlığı Laboratuvarları Dairesi Başkanlığı, 2017, 12-21.

	Security Y. Hakan Abacıoğlu, Cemile Sönmez, UMS Laboratuvar Güvenliği Rehberi, Sağlık Bakanlığı, Türkiye Halksağlığı Kurumu Başkanlığı, Mikrobiyoloji Referans Laboratuvarları Daire Başkanlığı 2014, 141-157
Course Duration	156 hours An additional 1 to 2 hours of homework per day is expected during this course.
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	By the end of this course the student will be able to: <ul style="list-style-type: none"> • minimize the risk of injury or illness to laboratory workers • ensuring that they have the training, information, • ensure support and equipment needed to work safely in the laboratory.
Course Assessments	Assignment 1: 40 % Final Exam: 60% 50% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Introduction of the course.
Session 2 (Week 2)	Classification of medical laboratories
Session 3 (Week 3)	Medical Laboratory Safety – Overview
Session 4 (Week 4)	Risk management in medical laboratory
Session 5 (Week 5)	Personal protective equipment
Session 6 (Week 6)	Chemical safety
Session 7 (Week 7)	Chemical safety
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9) Session 14 (Week 14)	Biological safety Physical security and data security Waste management First aid-Emergency action plans in medical laboratory accidents Rules to be followed in the medical laboratory - Class work Review of the semester Final Exam
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.



Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

اخلاقيات المهنة

اخلاقيات المهنة	اسم المقرر الدراسي	1
DL305	رمز المقرر	2
عام	نوع المقرر الدراسي: عام/تخصص/اختياري	3
4	الوحدات المعتمدة	4
4	ساعات التعليم	5
لا يوجد	المتطلبات المطلوبة مسبقا	6
تقنية الاسنان	البرنامج المقدم للدورة	7
اللغة العربية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
<p>يقدم هذا المقرر دراسة وتعريف ومفاهيم اخلاقيات المهن الطبية و الفائدة من دراستها، كما يتطرق إلى تداخلاتها مع الاحتراف الطبي والحقوق البشرية والقانون، يتضمن شرح لأهم خصائص الأخلاقيات الطبية ويؤكد على خصوصية العلاقة التي تربط الطبيب بالمريض بوجه خاص وبالزملاء والمجتمع بوجه عام مع ذكر بعض الحالات التطبيقية. و دور الأخلاقيات وارتباطها بالبحث العلمي و القيمة العلمية والاجتماعية والأخطار والفوائد ذات العلاقة.</p> <p>يهدف هذا المقرر إلى تمكين الطالب بمعرفة حقوقه ومسؤولياته نحو الأطباء والمرضى والزملاء وكيفية التعامل مع المجتمع.</p>		وصف موجز للمقرر
<p>عنوان الكتاب المقرر و ISBN:</p> <p>موسوعة اخلاقيات مهنة الطب</p> <p>- يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.</p>		الكتب المقررة
28 ساعة		المدة الزمنية للمقرر



المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المختبرية.....إلخ	طريقة التدريس
عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: 1- التعرف على اخلاقيات المهن الطبية وعلاقتها بالادارات الصحية . 2- التعرف على مفهوم ومصادر الاخلاقيات المهن الطبية في الادارة الصحية 3- التعرف على المبادئ الاخلاقية في الممارسات الصحية . 4- التعرف على واجبات الطبيب نحو المريض والعلاقة التي تربط الطبيب أو المشرف الصحي بالمريض	المستهدف
الامتحان النصفى : 30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح : 60%	طريقة التقييم
محتوى المقرر الدراسي	محتويات المقرر
مفهوم وأهمية علم اخلاقيات المهنة	الأسبوع الأول
مصادر علم اخلاقيات المهنة	الأسبوع الثاني
الاخلاقيات الطبية بين الفلسفة الغربية والنظرة الاسلامية	الأسبوع الثالث
الابعاد الجديدة لعلم اخلاقيات المهنة	الأسبوع الرابع
المبادئ الاخلاقية الاساسية في الممارسات الصحية والطبية	الأسبوع الخامس
العوامل المؤثرة على العلاقة بين الطبيب والمريض	الأسبوع السادس
واجبات الطبيب	الأسبوع السابع
الامتحان النهائي	الأسبوع الثامن
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة
Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.	التغيير والتعديل في المقرر الدراسي

Complete removable II

1	Course name	Complete Removable II
2	Course Code	DL402
3	Course type: /general/specialty/optional	Specialty

4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Complete Removable I
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:	This course is designed for the 4 th year undergraduate dental students. It will provide the students with the necessary theoretical and practical knowledge in the field of maxillofacial prosthetics rehabilitation for patients with congenital and acquired oral and maxillofacial defects including fabrication of intraoral prostheses and extraoral prostheses such as artificial eye, nose, or ear.	
Textbooks required for this Course:	Book: Maxillofacial Rehabilitation. Prosthetic and surgical management of cancer-related, acquired, and congenital defects of head and neck. John Beumer III, et.al. 3 rd edition, Quintessence Publishing.	
Course Duration	156 hours An additional 1 to 2 hours of homework per day is expected during this course.	
Delivery	Lectures, small discussion Groups, seminars, project-based learning (PBL), videos, practical (laboratory).	
Course Objectives:	<p>Upon completion of this course, the students will be able to:</p> <ul style="list-style-type: none"> • Understand all types of maxillofacial defects, their etiology, and their prosthetic rehabilitation needs. • Recognize the theoretical background related to maxillofacial prosthetic rehabilitation. • Identify the various materials used in maxillofacial prosthetics. • Identify the different steps of constructing different maxillofacial prostheses. • Fabricate all kind of intraoral maxillofacial prostheses such as obturators and dentures. • Fabricate all kind of extraoral maxillofacial prostheses such as orbital and nasal prostheses. • Identify the various digital technologies used in maxillofacial prosthetics. • Write a report about the fabrication steps that implemented in the laboratory. • Develop students' time management skills. • Implement a dental instruments and devices professionally. 	
Course Assessments	Assignment 1: PBL (Report, p.pt presentation, Model) 15% Midterm: Theoretical Midterm 10%, practical midterm 10 % Daily Assessments: Homework and Quizzes 5 % Final Exam: Theoretical 30%, Practical 30% A 60 % is required for a pass in this course.	
Content Breakdown	Topical Coverage	
Session 1 (Week 1)	Introduction to maxillofacial prosthetics Definitions and related terms Classification of maxillofacial prosthetics Treatment and team tasks	



Session 2 (Week 2)	<p>Maxillectomy defects and their prosthetic rehabilitation</p> <p>Maxillectomy and maxillary resection defects</p> <p>Etiology of Maxillectomy Defects</p> <p>Anatomical structure of maxillectomy defects</p> <p>Maxillectomy classification</p> <ul style="list-style-type: none"> - Aramany's classification - Brown's classification - Okay's classification
Session 3 (Week 3)	<p>Maxillectomy defects and their prosthetic rehabilitation...continued</p> <p>Disabilities associated with maxillectomy defects</p> <ul style="list-style-type: none"> - Function - Appearance (aesthetic) - Psychological Trauma <p>Rehabilitation of maxillectomy defects</p> <ul style="list-style-type: none"> - Surgical rehabilitation - Prosthetic rehabilitation
Session 4 (Week 4)	<p>Maxillectomy defects and their prosthetic rehabilitation...continued</p> <p>Prosthetic rehabilitation of maxillectomy defects</p> <p>I- Surgical obturation for maxillectomy</p> <ol style="list-style-type: none"> 1- Immediate surgical obturation 2- Delayed surgical obturation <p>II- Interim obturation for maxillectomy</p> <p>III- Definitive obturation for maxillectomy</p>
Session 5 (Week 5)	<p>Soft palate defects and their prosthetic rehabilitation</p> <p>Partial and full soft palate defects</p> <p>Etiology of soft palate defects</p> <p>Anatomy and physiology of soft palate defects</p> <p>Disabilities associated with soft palate defects</p>
Session 6 (Week 6)	<p>Soft palate defects and their prosthetic rehabilitation...continued</p> <p>Prosthetic rehabilitation of maxillectomy defects</p> <p>I- Surgical obturation for soft palate defects</p> <p>Immediate surgical obturation</p> <p>Delayed surgical obturation</p> <p>II- Interim obturation for soft palate defects</p> <p>III- Definitive obturation for soft palate defects</p>
Session 7 (Week 7)	<p>Cleft lip and palate defects and their prosthetic rehabilitation</p> <p>Definitions of cleft lip and palate</p> <p>Structure and development of the palate</p> <p>Causes and predisposing factors of clefts</p> <p>Classification of cleft lip and palate</p> <p>Disabilities associated with cleft lip and palate</p>
Session 8 (Week 8)	<p>Cleft lip and palate defects and their prosthetic rehabilitation...continued</p> <p>Management of congenital cleft lip and palate</p> <p>Maxillofacial team</p> <p>Diagnosis and treatment planning</p> <p>Infant feeding treatment</p> <p>Surgical treatment</p> <p>Prosthetic treatment</p>
Session 9 (Week 9)	PBL Assessment (Project Based Learning)
Session 10 (Week 10)	Midterm Exam
Session 11 (Week 11)	Mandibulectomy defects and their prosthetic rehabilitation



	<p>Congenital mandibular defects Acquired mandibular defects Etiology of mandibular defects Disabilities associated with acquired mandibular defects</p>
Session 12 (Week 12)	<p>Mandibulectomy defects and their prosthetic rehabilitation...continued Rehabilitation of the mandibular defects I- Surgical reconstruction rehabilitation using a bone graft II- Prosthetic Rehabilitation Mandibular reconstruction prosthesis Prosthetic fixation of jaw fractures Method of Immobilization 1- Wiring 2- Arch bar 3- Splints</p>
Session 13 (Week 13)	<p>Glossectomy defects and their prosthetic rehabilitation Partial and full glossectomy defects Etiology of glossectomy defects Anatomy and physiology of glossectomy defects Disabilities associated with glossectomy defects</p>
Session 14 (Week 14)	<p>Glossectomy defects and their prosthetic rehabilitation...continued Rehabilitation of glossectomy defects I- Surgical reconstruction and rehabilitation using soft tissue grafting II- Prosthetic Rehabilitation Palatal augmented prosthesis (PAP)</p>
Session 15 (Week 15)	Midterm practical exam
Session 16 (Week 16 & 17)	<p>Midfacial defects and their prosthetic rehabilitation Anatomy and physiology of midfacial region Etiology of midfacial defects Rehabilitation of midfacial defects I- Surgical reconstruction and rehabilitation using soft tissue and bone grafting II- Prosthetic Rehabilitation - Intraoral prostheses - Extraoral prostheses</p>
Session 17 (Week 18)	<p>Facial defects and their prosthetic rehabilitation Etiology of facial defects Ocular defects Orbital defects Nasal defects Auricular defects</p>
Session 18 (Week 19 & 20)	<p>Facial defects and their prosthetic rehabilitation...continued Rehabilitation of facial defects I- Surgical reconstruction and rehabilitation II- Prosthetic Rehabilitation Ocular prostheses Orbital prostheses Nasal prostheses Auricular prostheses</p>
Session 19 (Week 21)	<p>Craniofacial defects and their prosthetic rehabilitation Etiology of Craniofacial defects Craniofacial implants</p>



	I- Surgical reconstruction and rehabilitation II- Prosthetic Rehabilitation
Session 20 (Week 22 & 23)	Implant related maxillofacial prosthetics Implant structure and materials Implant types <ul style="list-style-type: none"> - Dental implants - Mini implants - Zygomatic implants Implant prosthesis connections Implant treatment planning
Session 21 (Week 24)	Radiotherapy appliances in maxillofacial prosthetics Radiotherapy treatment concept Types of radiotherapy appliances Fabrication of radiotherapy appliances
Session 22 (Week 25 &26)	Digital technology for maxillofacial prosthetics Digitization Visualization Modeling and designing Additive manufacturing and 3D printing Evaluation
Session 23 (Week 27)	Practical final exam
Session 26 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	Students are expected to attend every session, lecture, and lab. Absences are permitted only if there is unavoidable reason.
Generic Skills	By the end of the course, the student be able to: <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Criticize his/her work. - Think critically to solve the problem may be faced during the work. - Implement of dental laboratory instruments and devices. - Use the Internet for preparing scientific researches. - Write a report about the steps that implemented in the laboratory.
Course Change	The content of the course is revised on an ongoing basis to ensure its relevance to the changes of new materials or techniques. The educator will update the contents accordingly.



Dental Anatomy

1	Course name	Dental Anatomy
2	Course Code	DL201
3	Course type: /general/specialty/optional	Specialty

4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	No requirements
7	Program offered the course	Dental Technology
8	Instruction Language	English Language
9	Date of course approval	2022

Brief Description:	This course will provide students with a fundamental understanding of the Anatomy of Head & Neck and Teeth Morphology .
Textbooks required for this Course:	Book Title & ISBN: (second Edition) Human Dental Morphology Additional Resources: Dental Anatomy, its Relevance to Dentistry, Eighth edition Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
Course Duration	104 hours An additional 2to 3 hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • The student should acquire basic skills in Carving of crowns of permanent teeth in wax. • The student is expected to appreciate the normal development, morphology, structure & functions of oral tissues & variations in different Pathological/non p pathological states. • The students must know the basic knowledge of various research Methodologies
Course Assessments	Assignment 1: ...30. % Final Exam: ...60. % Daily Assessments: ...60...% A 10.....% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) Tooth Description..
Session 2 (Week 2)	Topics to be covered in the session (week) Dental terminology...
Session 3 (Week 3)	Topics to be covered in the session (week) Tooth numbering systems (Different system) (Dental formula).
Session 4 (Week 4)	Topics to be covered in the session (week) Anatomical Structures (Landmarks)
Session 5 (Week 5)	Topics to be covered in the session (week) Morphological of permanent teeth:



	Description of individual teeth, along with their endodontic anatomy & including a note on their chronology of development, differences between similar class of teeth & identification of individual teeth
Session 6 (Week 6)	Topics to be covered in the session (week) Morphology of permanent maxillary incisors
Session 7 (Week 7)	Topics to be covered in the session (week) Practical: Carving on wax blocks:- Individual tooth - Only permanent teeth of both arches, maxillary Central, lateral Incisors.
Session 8(Week 8)	Topics to be covered in the session (week) Morphological of permanent mandibular incisors
Session 9 (Week 9)	Topics to be covered in the session (week) Carving on wax blocks:- Individual tooth, mandibular Central, lateral Incisors
Session 10 (Week 10)	Topics to be covered in the session (week) Morphological of permanent maxillary canines.
Session 11 (Week 11)	Topics to be covered in the session (week) Carving on wax blocks:- Individual tooth, maxillary Canine
Session 12 (Week 12)	Topics to be covered in the session (week) Morphological of permanent mandibular canines
Session 13 (Week 13)	Topics to be covered in the session (week) Carving on wax blocks:- Individual tooth, mandibular Canine
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Topics to be covered in the session (week) • Morphological of permanent maxillary first premolar
Session 16 (Week 16)	Topics to be covered in the session (week) Carving on wax blocks:- Individual tooth, permanent maxillary first premolar
Session 17 (Week 17)	Topics to be covered in the session (week) Morphological of permanent maxillary Second premolar
Session 18 (Week 18)	Topics to be covered in the session (week) Carving on wax blocks:- Individual tooth, permanent maxillary Second premolar
Session 19 (Week 19)	Topics to be covered in the session (week) Morphological of permanent mandibular First premolar
Session 20 (Week 20)	Carving on wax blocks:- Individual tooth, permanent mandibular first premolar
Session 21 (Week 21)	Topics to be covered in the session (week) Morphological of permanent mandibular Second premolar
Session 22 (Week 22)	Topics to be covered in the session (week) Carving on wax blocks:- Individual tooth, permanent mandibular second premolar
Session 23 (Week 23)	Topics to be covered in the session (week) Morphological of permanent maxillary First molar



Session 24 (Week 24)	Topics to be covered in the session (week) Carving on wax blocks:- Individual tooth, permanent maxillary first molar
Session 25 (Week 25)	Topics to be covered in the session (week) Morphological of permanent maxillary second, third molar
Session 26 (Week 26)	Carving on wax blocks:- Individual tooth, permanent maxillary second, third molar
Session 27 (Week 27)	Topics to be covered in the session (week) Morphological of permanent mandibular first, second, third molars
Session 28 (Week 28)	Carving on wax blocks:- Individual tooth, permanent mandibular first, second, third molar
Session 29 (Week 29)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Dental Materials I

1	Course name	Dental Materials I
2	Course Code	DL204
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	N/A
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will provide students with a fundamental understanding of the nature of various dental materials used in the market such as direct and

	indirect materials that used for restorations, e.g., filling, implants, fixed and removable prosthodontics and orthodontics. It will also help the students in understanding the basic procedures in mixing different materials used in the lab with the correct ratio in order to be able to chose correct material for each case.
Textbooks required for this Course:	Richard Van Noort: Introduction to dental materials, Second edition, UK, 2003. John F. McCabe and Angus W.G.Walls: Applied dental materials, Ninth edition, Blackwell Publishing Ltd, UK, 2008. William J. O'Brien: Dental materials and their selection, Third edition, Quintessence Publishing Co, Inc, 2002. Robert G.Craig, John M.Powers and John C. Wataha: Dental materials; properties and manipulation, Eighth edition, Mosby Inc, 2004.
Course Duration	104 hours ,An additional 1 to 2 hours of homework per day is expected during this course.
Delivery	Project based learning (PBL), power point presentations , small Group interaction and discussion, active participation, Laboratory experiments ; and videos (for some mechanical testing) , brain mapping and seminars.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand the meaning of dental materials and its biocompatibility with the oral cavity and surrounding tissues. • Identify the different materials used in dentistry and the composition used for making each material, also the reason behind using more than only one material for restorations. • Recognize the properties of dental materials including physical, chemical, mechanical, optical, thermal, and rheological properties . • Identify representations, terms, conditions, and the concepts in mixing and pouring of the impression materials . • Recognize the different classifications of impression materials based on its rigidity e.g (gypsum products , zinc oxide eugenol) and flexibility (e.g Agar hydrocolloid, alginate hydrocolloid, silicon rubber, polysulfide, polyether) • Construct models made from gypsum products e.g, stone , plaster and modified/die stone. • Distinguish between materials that used in fixed and removable prosthodontics . • Write a report on the laboratory steps used in mixing the material with the correct ratio and the techniques used for mixing. • Develop a way to workout with the problems made in the restoration as a result of mixing the raw materials. • Implement devices used for sintering the porcelain particles for all ceramic restorations or for fusing porcelain on metal restoration.
Course Assessments	Assignment 1: Quizzes 5% Assignment 2: Midterm Exam: 30% (20%Theoritical + 10% Practical) Final Exam: 60 % (40%Theoritical + 20% Practical) Daily Assessments: 5% A ...60..% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course.



	Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to Dental Materials • Properties of Materials <ol style="list-style-type: none"> 1. Mechanical Properties 2. Physical Properties 3. Chemical Properties 4. Optical Properties 5. Rheological Properties
Session 2 (Week 2 & 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Gypsum products • Materials derived from gypsum <ol style="list-style-type: none"> 1. Models and dies 2. Impression materials 3. Moulds 4. Refractory investment • Types of Gypsum products <ol style="list-style-type: none"> 1. Model plaster 2. Dental stone 3. High strength dental stone (die stone) • Setting process / Sequence of setting process • Working and setting time • Properties of gypsum products <ol style="list-style-type: none"> 1. Dimensional stability 2. Compressive strength 3. Tensile strength 4. Hardness and abrasion resistance <p>Assignment 2 handed out</p>
Session 3 (Week 4 & 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Impression materials • Requirements of impression materials • Classification of dental impression materials • Rigid impression materials <ol style="list-style-type: none"> 1. dental compound 2. Impression plaster 3. Zinc oxide eugenol • Flexible impression materials <ol style="list-style-type: none"> 1. Alginate hydrocolloid <ul style="list-style-type: none"> -introduction into Alginate -Disadvantages of alginate -Uses of alginate -composition of alginate powder -properties of alginate -selection of Maxillary and mandibular trays



Session 4 (Week 6&7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Flexible impression materials <ol style="list-style-type: none"> 2. Agar hydrocolloid <ul style="list-style-type: none"> -Introduction into Agar -composition of Agar -Agar impression trays and syringes -Ingredients of the gel and syringe materials -Properties of Agar 3. Elastomeric impression materials <ul style="list-style-type: none"> • Polysulfide impression materials <ul style="list-style-type: none"> -Composition of polysulfide -Classification of polysulfide -Setting reaction of polysulfide -Properties of polysulfide • Silicone impression materials <ul style="list-style-type: none"> -Development of silicone impression materials -Types of silicone -Properties of silicone • Polyether impression materials <ul style="list-style-type: none"> -Composition and setting reaction of polyether -Properties of polyether • Disinfection of elastomeric impressions • Elastomeric impression materials for bite registration
Session 5 (Week 8 &9)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Mechanical properties I • Types of stresses • stress-strain curve •Elastic modulus •Elastic Moduli of Selected Dental Materials •Proportional Limit and Yield Strength •Yield strength of Selected Dental Materials •Ultimate Strength •Elongation and Compression •Resilience and Toughness •Hardness •Hardness of Selected Dental Surfaces
Session 6 (Week 10 &11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Mechanical properties II -Fracture toughness -Fatigue properties -Fatigue testing -Impact testing -Testing procedure
Session 7 (Week 12 &13)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Physical properties A- Dimensional change and thermal conductivity -Introduction into dimensional change and definition -Dimensional change calculation



	<ul style="list-style-type: none"> -Thermal dimensional change -Thermal expansion -Coefficient of thermal expansion of dental materials -Clinical significance -Thermal conductivity -Thermal conductivity of dental materials
Session 8 (Week 14)	Midterm Exam
Session 9 (Week 15 & 16)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Physical properties B- Electrical and optical -Galvanism and its occurrence - Solving galvanism problem -Corrosion -Ranking orders of electrode potential and reactivity for various metals -Galvanic corrosion -Dry corrosion -Wet corrosion -Consequence of corrosion -Tarnish
Session 10 (Week 17 &18)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Optical properties -Color - Factors affecting color -Parameters of color -Hue -Value -Chroma
Session 11 (Week 19 &20)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Chemical properties -Introduction into chemical properties -Absorption and adsorption -Degradation of polymer -Mechanism of degradation -Assessments of water sorption and soluble fraction of polymer -Comparison between polymers and composites in terms of water sorption -Clinical significance -Tarnish and corrosion of metals -Crevice corrosion -Degradation of ceramics
Session 12 (Week 21 &22)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Rheological properties -Introduction into rheology -Viscosity -Application -Classification of fluid based on rheology -Newtonian fluid -Pseudoplastic fluid -Dilatant fluid -Plastic fluid



	-Clinical significance
Session 13 (Week 23 &24)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Materials fir inlays, onlays , crowns and bridges -Introduction into terms -Materials for indirect restoration -Uses of dental ceramics -Characteristics of Ceramics - Composition of Ceramics - Composition of dental porcelains -Types of Porcelain -Properties of Porcelains - Preparation of porcelains -Porcelain-Fused-to-Metal -Advantages and disadvantages
Session 14 (Week 25 & 26)	<p>Topics to be covered in the session (week)</p> <p>All ceramic restorations</p> <ul style="list-style-type: none"> -CAD-CAM system -Uses for metals -Properties of metals -Forming Metal Objects -Alloys -Dental alloys requirements -Alloy composition -Gold alloys -Porcelain-Fused-to-Metal Alloys
Session 15 (Week 27& 28)	Practical Final Exam Theoretical and oral final exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Dental Materials II

1	Course name	Dental Materials II
2	Course Code	DL304
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Dental Materials I
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course will provide students with a fundamental understanding of the nature of various dental materials used in the market such as direct and indirect materials that used for restorations, e.g., filling, implants, fixed and removable prosthodontics and orthodontics. It will also help the students in understanding the basic procedures in mixing different materials used in the lab with the correct ratio in order to be able to chose correct material for each case.
Textbooks required for this Course:	Richard Van Noort: Introduction to dental materials, Second edition, UK, 2003. John F. McCabe and Angus W.G.Walls: Applied dental materials, Ninth edition, Blackwell Publishing Ltd, UK, 2008. William J. O'Brien: Dental materials and their selection, Third edition, Quintessence Publishing Co, Inc, 2002. Robert G.Craig, John M.Powers and John C. Wataha: Dental materials; properties and manipulation, Eighth edition, Mosby Inc, 2004.
Course Duration	104 hours ,An additional 1 to 2 hours of homework per day is expected during this course.
Delivery	Project based learning (PBL), power point presentations , small Group interaction and discussion, active participation, Laboratory experiments ; and videos (for some mechanical testing) , brain mapping and seminars.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand the meaning of dental materials and its biocompatibility with the oral cavity and surrounding tissues. • Identify the different materials used in dentistry and the composition used for making each material, also the reason behind using more than only one material for restorations. • Recognize the properties of dental materials including physical, chemical, mechanical, optical, thermal, and rheological properties.



	<ul style="list-style-type: none"> • Identify representations, terms, conditions, and the concepts in mixing and pouring of the impression materials . • Recognize the different classifications of impression materials based on its rigidity e.g (gypsum products , zinc oxide eugenol) and flexibility (e.g Agar hydrocolloid, alginate hydrocolloid, silicon rubber, polysulfide, polyether) • Construct models made from gypsum products e.g, stone , plaster and modified/die stone. • Distinguish between materials that used in fixed and removable prosthodontics . • Write a report on the laboratory steps used in mixing the material with the correct ratio and the techniques used for mixing. • Develop a way to workout with the problems made in the restoration as a result of mixing the raw materials. • Implement devices used for sintering the porcelain particles for all ceramic restorations or for fusing porcelain on metal restoration.
Course Assessments	<p>Assignment 1: Quizzes 5%</p> <p>Assignment 2: Midterm Exam: 30% (20%Theoretical + 10% Practical)</p> <p>Final Exam: 60 % (40%Theoretical + 20% Practical) Daily Assessments: 5%</p> <p>A ...60..% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to Dental Materials • Properties of Materials <ol style="list-style-type: none"> 1. Mechanical Properties 2. Physical Properties 3. Chemical Properties 4. Optical Properties 5. Rheological Properties
Session 2 (Week 2 & 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Gypsum products • Materials derived from gypsum <ol style="list-style-type: none"> 1. Models and dies 2. Impression materials 3. Moulds 4. Refractory investment <ul style="list-style-type: none"> • Types of Gypsum products <ol style="list-style-type: none"> 1. Model plaster 2. Dental stone 3. High strength dental stone (die stone) <ul style="list-style-type: none"> • Setting process / Sequence of setting process • Working and setting time • Properties of gypsum products <ol style="list-style-type: none"> 1. Dimensional stability



	<p>2. Compressive strength</p> <p>3. Tensile strength</p> <p>4. Hardness and abrasion resistance</p> <p>Assignment 2 handed out</p>
Session 3 (Week 4 &5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Impression materials • Requirements of impression materials • Classification of dental impression materials • Rigid impression materials <ul style="list-style-type: none"> 1. dental compound 2. Impression plaster 3. Zinc oxide eugenol • Flexible impression materials <ul style="list-style-type: none"> 1. Alginate hydrocolloid <ul style="list-style-type: none"> -introduction into Alginate -Disadvantages of alginate -Uses of alginate -composition of alginate powder -properties of alginate -selection of Maxillary and mandibular trays
Session 4 (Week 6& 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Flexible impression materials <ul style="list-style-type: none"> 2. Agar hydrocolloid <ul style="list-style-type: none"> -Introduction into Agar -composition of Agar -Agar impression trays and syringes -Ingredients of the gel and syringe materials -Properties of Agar 3. Elastomeric impression materials <ul style="list-style-type: none"> • Polysulfide impression materials <ul style="list-style-type: none"> -Composition of polysulfide -Classification of polysulfide -Setting reaction of polysulfide -Properties of polysulfide • Silicone impression materials <ul style="list-style-type: none"> -Development of silicone impression materials -Types of silicone -Properties of silicone • Polyether impression materials <ul style="list-style-type: none"> -Composition and setting reaction of polyether -Properties of polyether • Disinfection of elastomeric impressions • Elastomeric impression materials for bite registration
Session 5 (Week 8 &9)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Mechanical properties I • Types of stresses • stress-strain curve



	<ul style="list-style-type: none"> •Elastic modulus •Elastic Moduli of Selected Dental Materials •Proportional Limit and Yield Strength •Yield strength of Selected Dental Materials •Ultimate Strength •Elongation and Compression •Resilience and Toughness •Hardness •Hardness of Selected Dental Surfaces
Session 6 (Week 10 &11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Mechanical properties II -Fracture toughness -Fatigue properties -Fatigue testing -Impact testing -Testing procedure
Session 7 (Week 12 &13)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Physical properties A- Dimensional change and thermal conductivity -Introduction into dimensional change and definition -Dimensional change calculation -Thermal dimensional change -Thermal expansion -Coefficient of thermal expansion of dental materials -Clinical significance -Thermal conductivity -Thermal conductivity of dental materials
Session 8 (Week 14)	Midterm Exam
Session 9 (Week 15 & 16)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Physical properties B- Electrical and optical -Galvanism and its occurrence - Solving galvanism problem -Corrosion -Ranking orders of electrode potential and reactivity for various metals -Galvanic corrosion -Dry corrosion -Wet corrosion -Consequence of corrosion -Tarnish
Session 10 (Week 17 &18)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Optical properties -Color - Factors affecting color -Parameters of color -Hue -Value -Chroma



Session 11 (Week 19 &20)	Topics to be covered in the session (week) <ul style="list-style-type: none"> •Chemical properties -Introduction into chemical properties -Absorption and adsorption -Degradation of polymer -Mechanism of degradation -Assessments of water sorption and soluble fraction of polymer -Comparison between polymers and composites in terms of water sorption -Clinical significance -Tarnish and corrosion of metals -Crevice corrosion -Degradation of ceramics
Session 12 (Week 21 &22)	Topics to be covered in the session (week) <ul style="list-style-type: none"> •Rheological properties -Introduction into rheology -Viscosity -Application -Classification of fluid based on rheology -Newtonian fluid -Pseudoplastic fluid -Dilatant fluid -Plastic fluid -Clinical significance
Session 13 (Week 23 &24)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Materials fir inlays, onlays , crowns and bridges -Introduction into terms -Materials for indirect restoration -Uses of dental ceramics -Characteristics of Ceramics - Composition of Ceramics - Composition of dental porcelains -Types of Porcelain -Properties of Porcelains - Preparation of porcelains -Porcelain-Fused-to-Metal -Advantages and disadvantages
Session 14 (Week 25 & 26)	Topics to be covered in the session (week) <ul style="list-style-type: none"> All ceramic restorations -CAD-CAM system -Uses for metals -Properties of metals -Forming Metal Objects -Alloys -Dental alloys requirements -Alloy composition -Gold alloys -Porcelain-Fused-to-Metal Alloys
Session 15 (Week 27& 28)	<p style="text-align: center;">Practical Final Exam Theoretical and oral final exam</p>



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Fixed Prosthodontics

1	Course name	Fixed Prosthodontics I (Crowns and Bridges)
2	Course Code	DL300
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Prosthodontics
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	This course is designed to the undergraduate students at the 3 rd year and, the course will provide the students with the understanding of various processing steps used during fabrication of fixed prosthesis such as fabrication of the working cast, working cast waxing, etc.
	Textbooks required for this Course:	Book Title & ISBN: Fundamentals' of fixed prosthodontics. 3 rd edition Herbert T. Shillingburg , et.al Additional Resources: Contemporary Fixed Prosthodontics. 5 th edition Stephen F. Rosenstiel, et al Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
	Course Duration	156 hours An additional 1 to 2 hours of homework per day is expected during this course.



Delivery	Presentation's Lectures, small discussion Groups, seminars, project based learning (PBL), videos, practical (laboratory).
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand the concept of occlusion and how to use it in fixed prosthodontics • Identify the different parts of fixed partial denture. • Identify representations, terms, conditions, and • Recognize different classifications of fixed structures. • Clarify the importance of provisional restorations and the techniques used to fabricate temporary restorations. • Construct the temporary restorations. • Recognize the different techniques and methods for working cast and die. • Develop wax patterns for anterior and posterior teeth (crowns and bridges). • Distinguish the indications to the various fixed prostheses such as crowns, bridges and inlays and onlays ..., etc. • Understanding of various processing steps used during fabrication of fixed restorations. • Identify basic principles of tooth preparation provide the students with the, waxing, • Write a report about the steps that implemented in the laboratory.
Course Assessments	<p>Assignment 1: PBL (Report, p.pt presentation, Model) 15%</p> <p>Midterm: Theoretical Midterm 10%, practical midterm 10 %,</p> <p>Daily Assessments: Homework and Quizzes 5 %</p> <p>Final Exam: Theoretical 30%, Practical 30%</p> <p>A 60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction to Fixed prosthodontics. • Scope of fixed prosthodontics • Indications and contra-indications of different types fixed restorations • Types of fixed prosthodontics restorations. • Terminology of fixed prosthodontics. • Component of fixed partial bridge.
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Conventional fixed prosthesis. • Materials used for fixed restoration • Techniques used for constructing fixed prosthesis. • Steps in construction of cast restorations. • Types of fixed restorations and their classifications. • Contra-indications of partial coverage restorations. <p>Assignment 2 handed out</p>
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Conventional fixed prosthesis II • Fixed partial denture. • A primary abutments. • An intermediate abutments • Classification of fixed partial denture. • According to retention



	<ul style="list-style-type: none"> • Advantages, disadvantages, Indication, and contra-indication for different types of bridges.
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Conventional fixed prosthesis III • Classification of FPD : • According to materials • According to location
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Principles of tooth preparation. • Definition of tooth preparation and prepared teeth. • Purpose of tooth preparation. • Biomechanical principles of tooth preparation for a cast metal or porcelain restorations. <ul style="list-style-type: none"> 1- Preservation of tooth structure. <p>The results of excessive reduction of tooth structure during tooth preparation.</p>
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Biomechanical principles of tooth preparation for a cast metal or porcelain restorations: <p>2-Retention and resistance from.</p> <ul style="list-style-type: none"> • Path of insertion • Factors affecting the resistance form <ol style="list-style-type: none"> i. Taper ii. Surface area <ul style="list-style-type: none"> • Factors affecting surface area iii. Length and height. iv. Texture of preparation. v. Accessory means
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <p>3. Structural Durability (Preventing Deformation)</p> <ul style="list-style-type: none"> • Preparation Features Related to Structural Durability: <ol style="list-style-type: none"> a- Occlusion reduction. b- Axial reduction. c- Functional cusp level. <ul style="list-style-type: none"> • Inadequate functional cusp level may produce several problems. <p>4. Preservation of Periodontal Tissue.</p> <ul style="list-style-type: none"> • Finish line. • Requirement of finish line. • Classification of finish line according to location
Session 8 (Week 8)	<p>5 - Marginal Integrity.</p> <ul style="list-style-type: none"> • The Requirements of Restoration Margins • Types of finish lines • Chamfer finish line • Knife edge finish-line. • Shoulder finish line. • Shoulder with bevel. • Chamfer with bevel. • Advantages, disadvantages of each type.
Session 9 (Week 9)	PBL Assessment (Project Based Learning)



Session 10 (Week 10)	Midterm Exam
Session 11 (Week 11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Working (Master) Cast • Requirements of good Cast. • Before pouring the cast. • Pouring the cast. • Separating, Trimming, and Storing Casts.
Session 12 (Week 12)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Provisional (Interim) Restoration. • Requirements of Provisional Restoration. • Types of temporary crowns. • Techniques used for fabricating custom temporary restoration. • Advantages of indirect over direct technique • Cementing of the Temporary Crown or Bridge
Session 13 (Week 13)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Methods of Fabricating Custom Provisional Restoration. <ol style="list-style-type: none"> 1. Vacuum-Forming Methods. 2. Alternative Methods. <ol style="list-style-type: none"> a. Alginate Impression Template Method. b. Silicone Template Method
Session 14 (Week 14)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • The Die: • Ideal requirements of die • Requirements of die materials. • Types of die according to material used. <ol style="list-style-type: none"> 1. Gypsum products. 2. Resin dies or epoxy dies. 3. Amalgam dies. 4. Refractory die. 5. Electroplated die. <ol style="list-style-type: none"> I. Silver-plated die. II. Copper-plated die. 1. Gypsum products die. <ul style="list-style-type: none"> • Types of dental gypsum products • Advantages and disadvantages of gypsum products
Session 15 (Week 15)	Midterm practical exam
Session 16 (Week 16)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Properties of Gypsum Products. <ol style="list-style-type: none"> a. Strength: <ol style="list-style-type: none"> i. Crush strength ii. Wet strength iii. Dry strength. b. Setting time. <ol style="list-style-type: none"> i. Initial sitting time ii. Final sitting time. c. Setting expansion. <ol style="list-style-type: none"> i. Normal sitting expansion. ii. Hygroscopic sitting expansion. iii. Thermal sitting expansion.



Session 17 (Week 17)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Effect of Selected Variables on Crushing Strength. <ol style="list-style-type: none"> 1. Water-powder ratio 2. Mechanical mixing. 3. Chemical modifiers. • Effect of Selected Variables on Setting Time. <ol style="list-style-type: none"> 1. Water –powder ratio. 2. Water temperature. 3. Mixing. • Accelerator and retarders. • Effect of Water-Powder Ratio and Mixing Time on Setting Expansion
Session 18 (Week 18 &19)	<p>Topics to be covered in the session (week).</p> <ol style="list-style-type: none"> 2. Resin dies or epoxy dies. <ul style="list-style-type: none"> • Advantages and disadvantages 3. Amalgam dies. <ul style="list-style-type: none"> • Advantages and disadvantages 4. Refractory die. 5. Electroplated die. <ul style="list-style-type: none"> • Advantages and disadvantages. • The Working Cast & Die Systems. <ol style="list-style-type: none"> 1- Working cast with separated die. <ul style="list-style-type: none"> ○ Advantages. ○ Disadvantages. ○ Procedures. 2- Working cast with removable die.
Session 19 (Week 20 &21)	<p>Topics to be covered in the session (week).</p> <ol style="list-style-type: none"> 2. Working Cast with a Removable Die. <ul style="list-style-type: none"> ○ The Main Requirement of Working Cast with a Removable Die. ○ Advantages. ○ Disadvantages. • Techniques of Removable Die. <ol style="list-style-type: none"> 1- Dowel pin Technique. <ol style="list-style-type: none"> a- Single Dowel (Flat or Curved Single dowel pin). b- Double Dowel. 2- Pindex System. 3- Di-lock Technique. • Steps of fabrication.
Session 20 (Week 22 &23)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Wax pattern <ul style="list-style-type: none"> ○ Requirement of casting wax. • Techniques of a wax pattern. • Types of Waxes that used for Wax Pattern. <ol style="list-style-type: none"> 1- Type I waxes: are formulated for making intraoral (inlay) wax patterns. 2- 1- Type II waxes: are formulated for making wax pattern indirectly. • Methods of Wax Pattern Construction. <ol style="list-style-type: none"> 1. Dipping Method. 2. Addition Method. 3. Molten Press Method. 4. Injection Method.



Session 21 (Week 24)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> ● Die or Cast preparation Before Wax Pattern <ul style="list-style-type: none"> ○ Trimming the Die. ○ Shaping the die Handle. ○ Correction of Defects. ○ Marking the Margin. ○ Paint on the Die Spacer.
Session 22 (Week 25 & 26)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> ● Waxing Instruments <ul style="list-style-type: none"> ○ No 1: wax large addition instruments ○ No 2: wax lesser addition instruments. ○ No 3: burnisher for refining occlusal anatomy. ○ No 4: wax carvers ○ No 5: wax carvers. ○ No 6: wax burnisher. ○ No 7: waxing spatula for fundamental layer. ● Steps of Waxing a Pattern. ● The techniques for occlusal and axial contouring of wax patterns are: <ol style="list-style-type: none"> 1. Negative waxing, which is the buildup, smash, and carve technique. 2. Positive waxing, which consists of adding wax to a wax blank
Session 23 (Week 27)	Practical final exam
Session 26 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>
Generic Skills	<p>By the end of the course, the student be able to:</p> <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Implement of dental laboratory instruments and devices. - Write a report about the steps that implemented in the laboratory. - Use the Internet for preparing scientific researches. - Criticize his/her work. - Think critically to solve the problem may be faced during the work.
Course Change	<p>Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.</p>



Fixed Prosthodontics II


1	Course name	Fixed Prosthodontics II (Crowns and Bridges II)
2	Course Code	DL400
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Fixed Prosthodontics I (Crowns and Bridges I)
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course is designed to the undergraduate students at the 4 th year, and this course will provide the students with the necessary theoretical background that includes explanations the laboratory steps of fabricating metal restoration, metal ceramic system, all ceramic restoration, CAD/CAM, and dental implants.
Textbooks required for this Course:	Book Title & ISBN: Fundamentals' of fixed prosthodontics. Herbert T. Shillingburg , et.al. 4 th edition Additional Resources: Contemporary Fixed Prosthodontics. Stephen F. Rosenstiel, et al. 5 th edition Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
Course Duration	156 hours An additional 1 to 2 hours of homework per day is expected during this course.
Delivery	Presentation's Lectures, small discussion Groups, seminars, project based learning (PBL), videos, practical (laboratory).
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand the various processing steps used during fabrication of fixed prosthesis such as spruing, Investing and casting. • Identify the various materials used in different laboratory steps • Perform the casting, finishing, and polishing. • Recognize the theoretical background of pontic design and the different types of pontics and indications • Identify the different steps of constructing different fixed prosthesis. • Recognize different types and classification of sprue formers and the ideal area for attaching in the wax pattern. • Construct a metal ceramic restoration. • Write a report about the steps that implemented in the laboratory.



	<ul style="list-style-type: none"> • Develop students' time management skills. • Implement a dental laboratory instruments and devices professionally.
Course Assessments	<p>Assignment 1: PBL (Report, p.pt presentation, Model) 15%</p> <p>Midterm: Theoretical Midterm 10%, practical midterm 10 %,</p> <p>Daily Assessments: Homework and Quizzes 5 %</p> <p>Final Exam: Theoretical 30%, Practical 30%</p> <p>A 60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • The Spruing • Sprue • Purpose of spruing. • Different types of sprue former <ul style="list-style-type: none"> • According to material made of • According to thickness. • According to the Number & Shape of Sprue Former. • Spruing techniques.
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • The spruing II • Sprue diameter. • Sprue former length. • Sprue former direction. • Reservoir. • Purpose of reservoir. • Crucible former. • Types of crucible former • Casting ring and liners. • Considerations in selection of casting rings. • Purpose of ring liner
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Investing. • Requirements of Ideal investment materials. • Steps before investing procedure: • Classification of dental investment materials <ul style="list-style-type: none"> - Gypsum bonded investing material. - Phosphate bonded investing material. - Silica bonded investing material. • Composition of investment materials.
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • The investing II • Shrinkage Compensation Systems for Solidified Gold. • Mechanisms of expansion <ul style="list-style-type: none"> - Setting Expansion. - Hygroscopic Expansion. - Semi-hygroscopic Expansion. - Thermal Expansion. • Investing techniques. <ul style="list-style-type: none"> - Single technique.



	<ul style="list-style-type: none"> • Brush technique. • Vacuum technique. - Double technique.
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Wax elimination (burnout) • Purpose of Burnout. • Types of burnout. <ul style="list-style-type: none"> - Controlled burnout. - Non-controlled burnout. • Calibrating the Burnout Furnace's Temperature Indicator. • process of Burnout: • Technique of Controlled Burnout. <ol style="list-style-type: none"> a. High Heat Technique. b. Low Heat Technique <p>Factors Influencing Burnout Time and Temperature.</p> <ol style="list-style-type: none"> 1- Temperature Rise Time. 2- Number and Size of the Mold. 3- Preheated Oven
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Casting Process. • Definition of casting. • Casting Equipment. <ol style="list-style-type: none"> 1. Heat source. <ol style="list-style-type: none"> a. Blowpipe Flame (Blow Torch). <ul style="list-style-type: none"> • Zones of Blowpipe Flame (Torch Flame). <ul style="list-style-type: none"> - Mixing zone. - Combustion zone. - Reducing zone. - Oxidizing zone.
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> •Casting Procedures <ol style="list-style-type: none"> b. Electric source. 2. Casting Heating Force • Casting Process. <ol style="list-style-type: none"> 1- Balance the Machine. 2- Prepare the Crucible. 3- Determine the Amount of Alloy Needed. 4- Select the Metal Needed. 5- Wind the Casting Machine. 6- Adjust the Torch Flame. 7- Preheat the Crucible. 8- Melt the Gold and Apply Flux. 9- Position the Ring in the Casting Machine. 
Session 8 (Week 8)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Casting Recovery <ol style="list-style-type: none"> A- Recovery of the Casting. B- Cleaning of the Casting. C- Pickling.

	<ul style="list-style-type: none"> • Pickling Process. • An alternative method of pickling
Session 9 (Week 9)	PBL Assessment (Project Based Learning)
Session 10 (Week 10)	Midterm Exam
Session 11 (Week 11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Casting Finishing & polishing <p>c- Casting Finishing and Polishing:</p> <ol style="list-style-type: none"> I. The finishing <ol style="list-style-type: none"> 1. Inspecting the Casting for Defects. • The major kinds of defects. <ol style="list-style-type: none"> 2. Removing the Sprue. 3. Test-Fitting the Casting on the Die. 4. Rough-Finishing the Casting's Surface. 5. Adjusting Proximal Contacts. 6. Adjusting the Occlusion. II. Polishing the Casting. <ol style="list-style-type: none"> a. Preliminary Polish. b. Final Polish.
Session 12 (Week 12)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Metal-Ceramic Restoration. • Physical Characteristics of the Metal-Ceramic System. <ol style="list-style-type: none"> 1- Strength of the Bond. <ol style="list-style-type: none"> a. A chemical bond. b. A compression bond. c. A mechanical bond. 2- Strength of the Substructure. 3. Coefficients of Thermal Expansion. 4. Melting Range of Ceramic Alloys. 5. Thickness of the Veneer.
Session 13 (Week 13)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Metal Substructure Treatment. • Procedures of metal surface treatment. <ol style="list-style-type: none"> 1. Surface grinding. <ul style="list-style-type: none"> - Purposes of surface grinding 2. Ultrasonic cleaning with distilled water or steam cleaning. 3. Heating under vacuum at 1040° C for 2 minutes. 4. Deoxidizing with acids or air abrading with aluminum oxide. 5. Heating at atmospheric pressure at 1040° C for 2 minutes. • Metal Conditioning Agents. <ol style="list-style-type: none"> 1. Gold Metal Conditioners. 2. Metal Ceramic Conditioners. • Steps of metal conditioners application.
Session 14 (Week 14)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Porcelain Application & Firing. • Opaque Porcelain. • The major functions of opaque porcelain. • Opaque Effects. <ul style="list-style-type: none"> - White. - Gray.



	<ul style="list-style-type: none"> - Lilac Gray. - Pink. - Brown. <ul style="list-style-type: none"> • Applying Opaque Layer. <ul style="list-style-type: none"> • Applying. • Drying. • Firing.
Session 15 (Week 15)	Midterm practical exam
Session 16 (Week 16)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Porcelain condensation and shrinkage. • Porcelain Condensation. • Porcelain shrinkage. • Methods of Condensing Porcelain <ul style="list-style-type: none"> ○ Apply vibration by serrating or tapping with an instrument.. ○ Perform capillary action ○ Perform pressure packing by smoothing with a spatula or pressing with a clean tissue. ○ Continue by whipping.
Session 17 (Week 17)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • All ceramic restoration. • Advantages of all-ceramic restorations. • Disadvantages of all-ceramic restorations. • Types of Dental Ceramics. • Tooth Preparation Requirements • In-Ceram Alumina
Session 18 (Week 18 &19)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Preparation Steps for all ceramic restoration. <ol style="list-style-type: none"> 1- Complete a master cast with removable dies. 2- Die preparation. 3- Duplication. 4- Special plaster model. 5- Mixing slip material. 6- Slip application. 7- Sintering and finishing. 8- Glass infiltration. 9- Porcelain application.
Session 19 (Week 20 &21)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • CAD/CAM Restorations. • Definitions. • CAD CAM Process <ol style="list-style-type: none"> 1. The scanning device (optical impression). 2. The computer software (CAD). 3. The Manufacturing devices (CAM) <ol style="list-style-type: none"> a. Subtractive Manufacturing. b. Additive manufacturing. • Fabrication Procedure. • Materials used to form the ceramic block • Advantage of CAD–CAM systems.



	<ul style="list-style-type: none"> ● Disadvantage of CAD–CAM systems.
Session 20 (Week 22 & 23)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> ● Pontic and edentulous ridge. ● Ideal requirements of a pontic. ● Pontic design. ● Factors affecting the design of a pontic. <ul style="list-style-type: none"> -Space available for the placement of the pontic. -The contour of residual alveolar ridge. -Amount of occlusal load that is anticipated for that patient. ● General design consideration for a pontic. <ul style="list-style-type: none"> -Saddle pontic -Ridge lap pontic -Hygienic or sanitary pontic. ● Length of the edentulous span and occluso-gingival height of the pontic
Session 21 (Week 24)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> ● Aesthetic consideration for fixed restorations. ● Definitions. ● General principles of aesthetics. ● Factors of aesthetic dentofacial composition. ● Surgical and non-surgical methods to improve aesthetics. ● Types of aesthetic restorative material. ● Aesthetic fixed restorations.
Session 22 (Week 25 & 26)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> ● Dental Implants ● Indications and contra-indications of dental implants. ● General principles of implant planning. ● Clinical considerations <ul style="list-style-type: none"> ○ Misch Bone Quality Classification. <ul style="list-style-type: none"> - Bone Density ○ Bone height ○ Bone width ○ Bone length ○ Bone angulation. ● Planning dental implants in different clinical situations. <ul style="list-style-type: none"> - Available implant supported prosthetic solutions. - Number of implants required. ● Special consideration in restoring teeth in esthetic zone
Session 23 (Week 27)	Practical final exam
Session 24 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	<p>Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.</p>



Generic Skills	<p>By the end of the course, the student be able to:</p> <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Criticize his/her work. - Think critically to solve the problem may be faced during the work. - Implement of dental laboratory instruments and devices. - Use the Internet for preparing scientific researches. - Write a report about the steps that implemented in the laboratory.
Course Change	<p>Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.</p>


Microbiology



1	Course name	microbiology
2	Course Code	DL203
3	Course type: /general/specialty/optional	General
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Biology
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	<p>This course is designed to the undergraduate students at the 2nd year and, This course introduces dental technology students to oral microbiology. The basic principles of microbiology are presented in this course, with an emphasis on the relevance of these principles to human oral health. Diseases of microbial origin that concern the dental hygienist are presented to illustrate the principles of pathogenesis, host-parasite interaction, and modes of transmission. Infection control in a dental environment is emphasized.</p>
	Textbooks required for this Course:	<p>Book Title & ISBN: oral microbiology by Philip D Marsh& Micheal VMartin Additional Resources: Biology of microbiology by Micheal T. Madigan Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.</p>

Course Duration	156 hours An additional 1 to 2 hours of homework per day is expected during this course.
Delivery	Presentation's Lectures, small discussion Groups, seminars, project based learning (PBL), videos, practical (laboratory).
Course Objectives:	Upon successfully completing this course, students will be able to: a. Appreciate the diversity and complex microbial interactions within the oral microbiome and understand how the oral microbiota is shaped. b. Describe the major characteristics of supragingival and subgingival biofilms. c. Understand the innate and adaptive immune responses in the oral cavity. d. Understand the mechanisms utilized by bacteria to colonize the different niches in the oral cavity. e. Identify and describe the major characteristics of bacterial, fungal and viral pathogens associated with disease. f. Recognize the multifactorial aspects of dental caries and periodontitis. g. Recognize the possible associations of oral bacteria with systemic infections and cancer. h. Describe the available options for treatment and prevention of oral infections, recognize the benefits and limitations of the current therapeutic approaches, and identify areas for future research in this area..
Course Assessments	Assignment 1: PBL (Report, p.pt presentation, Model) 15% Midterm: Theoretical Midterm 10%, practical midterm 10 %, Daily Assessments: Homework and Quizzes 5 % Final Exam: Theoretical 30%, Practical 30% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to general microbiology. • Microbes • Key figures in the history of microbiology • Types of Cells. • Membrane bound organelles are found in eukaryotic cells.
Session 2 (Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Transport. • Taxonomy of microbiology . • The Prokaryotes (Kingdom Monera). • The Kingdom Protista. homework 1 handed out plus quiz 1
Session 3 (Week 3)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • The Kingdom Fungi • The Kingdom Plantae . • The Kingdom Animalia. homework 2 handed out plus quiz 2
Session 4 (Week 4)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Viruses • Growth and culture of bacteria. • Identifying bacterial species • Eukaryotic organisms that cause human disease – parasitic disease homework 3 handed out plus quiz 3



Session 5 (Week 5)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Definition of oral microflora . ● Microbial habitats. ● Factors affecting growth of oral microflora. ● Identification the different types of bacteria in the mouth. ● Important oral bacteria. homework 4 handed out plus quiz 4.
Session 6 (Week 6)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Clinical examples of microbes in the mouth. ● Flora in dental plaque. ● Changes in the oral flora with age . ● Bacterial endocarditis . homework 5 handed out plus quiz 5.
Session 7 (Week 7)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● . Dental plaque ● Macroscopic Structure and Composition of Dental Plaque: ● Materia alba. ● Calculus. ● Supragingival plaque. ● Subgingival plaque ● Organic constituents of the matrix of dental plaque. homework 6 handed out plus quiz 6.
Session 8 (Week 8)	5 – Dental plaque. <ul style="list-style-type: none"> ● The Inorganic Component of dental plaque. ● Formation of Dental Plaque. a) Formation of the pellicle coating on the tooth b) surface. c) Initial colonization by bacteria, and d) Secondary colonization and plaque maturation. homework 7 handed out plus quiz 7
Session 9 (Week 9)	review of the previous lesson
Session 10 (Week 10)	Midterm Exam
Session 11 (Week 11)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Host-parasite relationship. ● Mutualism. ● Parasitism. ● Pathogenicity quiz 8
Session 12 (Week 12 &13)	Topics to be covered in the session (week) <ul style="list-style-type: none"> ● Opportunistic pathogens. ● Infection. ● Virulence ● Host defenses. ● Inducible defenses. ● Antigens ● Natural antibodies ● Antimicrobial agents ● Host factors. <div style="text-align: right; margin-top: 20px;">  </div>

	homework 9 handed out plus quiz 9
Session 13 (Week 14 &15)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Oral immunity • Homeostasis and Immune System • Language of the Immune System • Key Elements of Immunity • Three Important Characteristics to Adaptive Immunity • Immunogens and Antigens. <p>homework 10 handed out plus quiz 10</p>
Session 14 (Week 16 & 17)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Five Classes [subclasses] of • Immunoglobulins • Blood Leukocytes • Granulocytes • Monocytes - Macrophages • Lymphocytes • Maturity of T and B Cells. <p>homework 11 handed out plus quiz 11</p>
Session 15 (Week 18)	Midterm practical exam
Session 16 (Week 19)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Types of Hypersensitivity Reactions • Progression of the Inflammatory Periodontal Lesion • Initial Lesion (2-4 days) • Early Lesion (4-7 days)
Session 17 (Week 20)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Infectious Diseases. <p>Bacterial Infections</p> <ol style="list-style-type: none"> 1. Impetigo 2. Tonsillitis and Pharyngitis 3. Tuberculosis 4. Actinomycosis 5. Syphilis
Session 18 (Week 21)	<p>Topics to be covered in the session (week).</p> <p>Infectious Diseases.</p> <ul style="list-style-type: none"> • Bacterial Infections <ol style="list-style-type: none"> 6. Necrotizing Ulcerative Gingivitis 7. Pericoronitis 8. Acute Osteomyelitis 9. Chronic Osteomyelitis
Session 19 (Week 22)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Infectious Diseases. <p>Fungal Infections</p> <ol style="list-style-type: none"> 1. Candidiasis 2. Deep fungal infections 3. Mucormycosisb- Double Dowel.
Session 20 (Week 23)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Infectious Diseases <p>Viral Infections.</p> <ol style="list-style-type: none"> 1. Human Papillomavirus Infection



	2. Herpes Simplex Infection
Session 21 (Week 24 &25)	Topics to be covered in the session (week). <ul style="list-style-type: none"> ● Infectious Diseases Viral Infections. 3. Varicella-Zoster Virus 4. Epstein-Barr Virus 5. Coxsackievirus Infections
Session 22 (Week 26)	Topics to be covered in the session (week). <ul style="list-style-type: none"> ● Hand-Foot-and-Mouth Disease ● Acute Lymphonodular Pharyngitis ● Other Viral Infections That May Have Oral Manifestations.
Session 23 (Week 27)	Practical final exam
Session 26 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	By the end of the course, the student be able to: <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Implement of dental laboratory instruments and devices. - Write a report about the steps that implemented in the laboratory. - Use the Internet for preparing scientific researches. - Criticize his/her work. - Think critically to solve the problem may be faced during the work.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Oral Pathology

1	Course name	Oral pathology
2	Course Code	DL404
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	No requirements
7	Program offered the course	Department of dental technology
8	Instruction Language	English
9	Date of course approval	2022



Brief Description:	This course will provide students with a fundamental understanding of the nature of oral pathology in a complete simplified way. Oral pathology course gives examples of oral disease and those lesions in the wide range of systemic disorders that have oral manifestations.
Textbooks required for this Course:	Book Title & ISBN: oral pathology for the dental hygienist, fourth edition, ibsen, phelan. united state of America, 2004. Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
Course Duration	156 hours An additional 1 to 2 hours of homework per day is expected during this course.
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, project based learning (PBL), videos, active participation, Laboratory experiments.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand the stages of disease formation, its nature and causes • Identify the students on the most important diseases the effect the oral tissue • Recognize the types of dental caries. • Identify representations, terms, conditions that used in oral pathology • Recognize different abnormality of the teeth. • Write the stages of plaque formation. • Implement a diagnoses about the disease by using special instruments.
Course Assessments	Assignment: 20% Laboratory exam: 10% Final Exam: 60% Daily Assessments: 10% A 06% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Introduction to principle of pathology • Types of the cells • Cellular adaptations to stress Overview of cell injury and cell death Causes of cell injury
Session 2 (Week 2)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Inflammation • Causes of inflammation • Types of inflammation • Acute inflammation • Chronic inflammation • complications Assignment 2 handed out



Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Repair Definition Factors affecting repair Local factors General factors Types of repairs
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Cell response to injury Causes of cell injury Mechanism of cell injury Effects of cell injury Pathological features
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Necrosis Definition Causes and pathogenesis Types of necrosis
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Apoptosis Definition Morphological changes Occurrence
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Infectious diseases ● Bacterial infections ● Definition ● Mode of infection ● Exogenous infection ● Endogenous infection
Session 8 (Week 8)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Fungal infections <p>Viral infections</p> <p>Mode of infection</p> <p>Mechanisms of cell injury by viruses</p> <p>Pathological changes</p>
Session 9 (Week 9)	PBL assessment (project based learning)
Session 10 (Week 10)	Midterm Exam
Session 11 (Week 11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> Disturbances of growth Atrophy Hypertrophy Hyperplasia Metaplasia Dysplasia



Session 12 (Week 12)	Topics to be covered in the session (week) Tumours Definition General characters of tumours Benign tumours Malignant tumours
Session 13 (Week 13)	Topics to be covered in the session (week) • dental caries • definition of dental caries Theories for dental caries Hypothesis for etiology of dental caries Role of saliva
Session 14 (Week 14)	Topics to be covered in the session (week) • Classification of dental caries • G.V. BLACK Who system
Session 15 (Week 15)	Topics to be covered in the session (week) • dental plaque • Definition of Dental plaque Bacterial Lifestyles Formation of Dental Plaque Biofilm
Session 16 (Week 16)	Midterm practical Exam
Session 17 (Week 17)	Topics to be covered in the session (week) • Gingivitis Clinical Features Gingival Bleeding Histopathological changes associated with gingivitis
Session 18 (Week 18)	Topics to be covered in the session (week) • Periodontitis • Factors involved in the severity of periodontitis Classification of periodontitis Periodontitis Association With Endodontic Lesion
Session 19 (Week 19)	Topics to be covered in the session (week) abnormalities of teeth Alterations in shape Gemination Fusion Concrescence Dilacerations Dens invaginatus



Session 20 (Week 20)	Topics to be covered in the session (week) abnormalities of teeth Alterations in shape Dens evaginatus Taurodontism Supernumerary roots Enamel pearls Attrition Abrasion Erosion
Session 21 (Week 21)	Topics to be covered in the session (week) abnormalities of teeth Alterations in size microdontia macrodontia
Session 22 (Week 22)	Topics to be covered in the session (week) abnormalities of teeth Alterations in number Anodontia Impaction Supernumerary teeth
Session 23 (Week 23)	Topics to be covered in the session (week) Pulp calcification Abnormalities of dental pulp Internal resorption External resorption
Session 24 (Week 24)	Topics to be covered in the session (week) Neoplasia Objectives description Causes of neoplasia
Session 25 (Week 25)	Topics to be covered in the session (week) Immunity Objectives Immune response Antigens Cells involved in the immune response
Session 26 (Week 26)	Topics to be covered in the session (week) Diseases affecting the temporomandibular joint Anatomy of the tempromandibular joint Normal joint function Temporomandibular disorders
Session 27 (Week 27)	Topics to be covered in the session (week) histopathological techniques steps of histopathology Tissue processing Microtomy Types of microtomes
Session 28 (Week 28)	Practical final exam
Session 29 (Week 29)	Theoretical and oral final exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Orthodontics Technology I

1	Course name	Orthodontics Technology I
2	Course Code	DL301
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Dental Anatomy
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course is designed to the undergraduate students at the 4 th year, and this course will provide the students with the necessary theoretical background that includes explanations the laboratory steps of fabricating Adam's clasp, Labial Bow, Active components of Removable Appliances and Functional appliances.
Textbooks required for this Course:	Orthodontic Removable Appliances, Sandhya Shyam Lohakare. Additional Resources: An Atlas of Removable Orthodontic Appliances Second edition, GORDON C. DICKSON Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
Course Duration	156 hours An additional 1 to 2 hours of homework per day is expected during this course.
Delivery	Presentation's Lectures, small discussion Groups, seminars, project based learning (PBL), videos, practical (laboratory).



Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand the various processing steps used during fabrication of Removable Orthodontic Appliances. • Identify the various materials used in different laboratory steps. • Recognize the theoretical background of Mechanical Appliances. and Functional Appliances. • Identify the different steps of constructing different Removable Orthodontic Appliances. • Write a report about the steps that implemented in the laboratory. • Develop students' time management skills. • Implement a dental laboratory instruments and devices professionally.
Course Assessments	<p>Assignment 1: PBL (Report, p.pt presentation, Model) 15%</p> <p>Midterm: Theoretical Midterm 10%, practical midterm 10 %,</p> <p>Daily Assessments: Homework and Quizzes 5 %</p> <p>Final Exam: Theoretical 40%, Practical 20%</p> <p>A 60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • History and Review of Literature • Introduction of removable orthodontics appliances • The Materials • The Tools • Wire Bending
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Classification of Orthodontic Appliances. • Biomechanics.
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Classification of malocclusion <ul style="list-style-type: none"> - Normal occlusion. - Class I occlusion. - Class II occlusion. - Class III occlusion. • Curve of Spee. • Wilson Curve.
Session 4 (Week 4 & 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Retentive components of Removable Appliances • Adam's Clasp • Modifications of Adam's clasp:- • C' clasp • Ball Clasp • Jackson's clasp • Lingual Extension Clasp • Arrowhead Clasp • Delta clasp
Session 5 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Labial bow • fabrication of Labial bow



Session 6 (Week 7)	Topics to be covered in the session (week) Introduction of Active components of Removable Appliances
Session 7 (Week 8 & 9)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Orthodontic Springs • Finger spring • Cranked single cantilever spring • Z- spring or Double cantilever spring • ' T' spring • Coffin spring
Session 8 (Week 10 & 11)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Orthodontic Springs • Finger spring • Cranked single cantilever spring • Z- spring or Double cantilever spring • ' T' spring • Coffin spring
Session 9 (Week 12)	PBL Assessment (Project Based Learning)
Session 11(Week 13)	Midterm Exam
Session 14 (Week 14& 15)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Canine distalization • Canine retractors - U loop canine retractor <ul style="list-style-type: none"> - Helical canine retractor - Buccal canine retractor - Palatal canine retraction
Session 16 (Week 16)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • APPLIANCE FOR ROTATION CORRECTION. • SCREW APPLIANCE: FOR EXPANSION
Session 17 (Week 17)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Retention.
Session 18 (Week 18)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Introduction of Functional appliances
Session 19 (Week 19)	Midterm practical exam
Session 20 (Week 20)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Bionator
Session 21 (Week 21)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Activator.
Session 22 (Week 22)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Space Maintainers
Session 23 (Week 23)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Plate Construction and Finishing.
Session 24 (Week 24)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Functional Occlusion and Occlusion Adjustment
Session 25 (Week 25)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • ELEMENTS OF CEPHALOMETRIC
Session 26 (Week 26)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Acrylic base plate Mangment
Session 27 (Week 27)	Practical final exam



Session 28 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	By the end of the course, the student be able to: <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Criticize his/her work. - Think critically to solve the problem may be faced during the work. - Implement of dental laboratory instruments and devices. - Use the Internet for preparing scientific researches. - Write a report about the steps that implemented in the laboratory.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Orthodontics Technology II

1	Course name	Orthodontics Technology II
2	Course Code	DL401
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Orthodontics Technology I
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	This course is designed to the undergraduate students at the 4 th year, and this course will provide the students with knowledge including an understanding of ideal occlusion form , function and the nature of normal occlusion for permanent dentation. In addition to theories of reconstruction of occlusion, tempromandibular joint(TMJ), types of articulators, mandibular movement.it also deals with problems of malocclusion and their relation with TMJ.



Textbooks required for this Course:	<p>Book Title & ISBN: Dental anatomy and occlusion. The Williams and Wilkins co,1969</p> <p>Additional Resources: Ash M, Nelson S "Wheeler's Dental anatomy ,physiology and occlusion"8th Edition, Elsevier 2003.</p> <p>Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.</p>
Course Duration	<p>156 hours</p> <p>An additional 1 to 2 hours of homework per day is expected during this course.</p>
Delivery	<p>Presentation's Lectures, small discussion Groups, seminars, videos, practical (laboratory).</p>
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand the ideal occlusion form and function. • Identify the occlusal contact point and all mandibular movements. • Perform the balancing occlusion. • Recognize the ecentric (working and balancing)occlusion • Identify the different steps of constructing occlusal surface and discuss types of contacts relating to the area of the occlusal surface on which their occur. • Recognize different types of mandibular movement and classification of malocclusion. • Construct the perfect occlusal surface for success the restoration. • Write a report about the steps that implemented in the laboratory. • Develop students' time management skills. • Implement a dental laboratory instruments and devices professionally.
Course Assessments	<p>Assignment 1: Report, p.pt presentation 15%</p> <p>Midterm: Theoretical Midterm 10%, practical midterm 10 %,</p> <p>Daily Assessments: Homework and Quizzes 5 %</p> <p>Final Exam: Theoretical 40%, Practical 20%</p> <p>A 60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage.
Session 1 (Week 1)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Introduction • Terminology used in occlusion . • Functional –working occlusion. • Nonfunctional-balancing occlusion. • Group function . • Canine guidance. • Incisal guidance
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Occlusion Morphology and Occlusion Concepts. • Centric relation and centric occlusion. • Working side and balancing side. • Eccentric occlusion • Traumatic occlusion
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p>



	<ul style="list-style-type: none"> • Anatomy and physiology of masticatory muscle. • Types of masticatory muscle. • Characteristic of masticatory muscle. • Structure of masticatory muscle.
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Action of primary and secondary muscle of mastication. • Function of masticatory muscle. • Neuromuscular control of mandibular movement.
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Tempromandibular joint (TMJ). • Anatomy of TMJ. • Components of TMJ. • Relation between TMJ and occlusion. • Signs and symptoms of TMJ disorder.
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Occlusal contact point. <ul style="list-style-type: none"> - Occlusal contact points with maxillary teeth. - Occlusal contact points with mandibular teeth. • Occlusal relationship of anterior teeth. • Occlusal relationship of posterior teeth.
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Articulator. • Purpose of articulator. • Uses of articulator. • Requirement of articulator • Advantages and limitation.
Session 8 (Week 8)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • classification of articulator. <ul style="list-style-type: none"> - Based on theory of occlusion. - Based on type of record. - Based on ability to simulate jaw movement. - Based on adjustability. • Components of articulator.
Session 9 (Week 9)	PBL Assessment (Project Based Learning)
Session 10 (Week 10)	Midterm Exam
Session 11 (Week 11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> • Mandibular movement. <ul style="list-style-type: none"> - Rotational movement . - Translation movement. - Opening and closing movement. - Protrusive movement. - Lateral movement.



Session 12 (Week 12)	Topics to be covered in the session (week) <ul style="list-style-type: none"> • Envelope of motion. <ul style="list-style-type: none"> • In sagittal plane. • In horizontal plane. • In frontal plane.
Session 13 (Week 13)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Principle of occlusion curvatures. • Dental arch formation. • Over bite. • Over jet.
Session 14 (Week 14)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Dental arch segment. • Phases in development of dental arch. • The leeway space.
Session 15 (Week 15)	Midterm practical exam
Session 16 (Week 16)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • The curves of dental arch. <ul style="list-style-type: none"> - Curve of Spee. - Curve of Wilson. - Curve of Monson. • The curvatures of individual teeth.
Session 17 (Week 17 & 18)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Angulation of individual teeth in relation to various planes. <ul style="list-style-type: none"> - Definition. - Importance. • Frontal view of the angulation of maxillary teeth. • Frontal view of the angulation of mandibular teeth.
Session 18 (Week 19)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • classification of occlusion. <ul style="list-style-type: none"> - Based on mandibular position. - Based on relation of first permanent molar . - Based on organization. - Based on pattern.
Session 19 (Week 20)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Six keys of normal occlusion. • Incorrect crown torque and occlusal findings. • Anterior and posterior occlusion in case of incorrect crown torque.
Session 20 (Week 21 & 22)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Malocclusion. • Definition. • Intra arch malocclusion. <ul style="list-style-type: none"> - Abnormal inclination. - Abnormal displacement. - Spacing and crowding.
Session 21 (Week 23)	Topics to be covered in the session (week). <ul style="list-style-type: none"> • Inter arch malocclusion. <ul style="list-style-type: none"> - Deep bite.



	<ul style="list-style-type: none"> - Open bite. • Skeletal malocclusion.
Session 22 (Week 24)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Classification of malocclusion. • Angel's classification. • Drawbacks of Angle's classification.
Session 23 (Week 25)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Balanced occlusion. • Objective of balanced occlusion. • Characteristics requirement of balanced occlusion. • Type of balanced occlusion.
Session 24 (Week 26)	<p>Topics to be covered in the session (week).</p> <ul style="list-style-type: none"> • Factor influencing balancing occlusion. • General consideration for balanced occlusion.
Session 23 (Week 27)	Practical final exam
Session 26 (Week 28)	Theoretical and oral Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, Implement of dental laboratory instruments and devices and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Partial Removable Prosthodontics I

1	Course name	Partial Removable prosthodontics 1
2	Course Code	DL303
3	Course type: /general/specialty/optional	specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	No requirements

7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description:	This course is designed to the undergraduate students at the 3 rd year and, the course will provide the students with the understanding of various processing steps used during fabrication of complete denture such as fabrication of the especial tray, occlusion rims, setting of the teeth, etc.
	Textbooks required for this Course:	Book Title & ISBN: Phillips' science of dental materials Removable partial prosthodontics Additional Resources: http://www-personal.umich.edu/~sbayne/dental-materials/RPD-Acrylic-HO.pdf - (http://www.fotosearch.com/photos-images/dentures.html). Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.
	Course Duration	156 hours in the year An additional 1 to 2 hours of homework per day is expected during this course.
	Delivery	Lecture- practice lectures – educational videos –training – collect information from libraries and internet - based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
	Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: <ul style="list-style-type: none"> • Understand the concept of occlusion and how to use it in complete denture and how to repair it and Etc. • Identify the different parts of complete denture. • Identify representations, terms, conditions..... etc. • Clarify the importance of provisional denture and the techniques used to fabricate complete denture. • Recognize the different techniques and methods for repairing , repasing, reline and duplication of complete denture. • Distinguish the indications to the various complete denture. • Understanding of various processing steps used during fabrication of complete denture. • Identify basic principles of tooth selection and arrangement. • Write a report about the steps that implemented in the laboratory.
	Course Assessments	Assignment 1: PBL (Report, p.pt presentation, Model) 15% Midterm: Theoretical Midterm 10%, practical midterm 10 % Daily Assessments: Homework and Quizzes 5 % Final Exam: Theoretical 30%, Practical 30% A 60 % is required for a pass in this course.
	Content Breakdown	Topical Coverage
	Session 1 (Week 1)	Topics to be covered in the session (week) Introduction of complete denture



Session 2 (Week 2)	Topics to be covered in the session (week) Fabrication of special tray
Session 3 (Week 3)	Topics to be covered in the session (week) Materials used to fabricate of special tray
Session 4 (Week 4)	Topics to be covered in the session (week) Impression and types of it.
Session 5 (Week 5)	Topics to be covered in the session (week) Impression materials
Session 6 (Week 6)	Topics to be covered in the session (week) - Relief
Session 7 (Week 7)	Topics to be covered in the session (week) - Posterior palatal seal (post-dam)
Session 8 (Week 8)	Topics to be covered in the session (week) - Face bow
Session 9 (Week 9)	Topics to be covered in the session (week) -Articulator
Session 10 (Week 10)	Topics to be covered in the session (week) -classification of articulator
Session 11 (Week 11)	Midterm exam
Session 12 (Week 12)	Topics to be covered in the session (week) - record base
Session 13 (Week 13)	Topics to be covered in the session (week) - Occlusal block
Session 14 (Week 14)	Topics to be covered in the session (week) Teeth selection
Session 15 (Week 15)	Midterm practical exam
Session 16 (Week 16)	Topics to be covered in the session (week) Setting of upper anterior teeth-
Session 17 (Week 17)	Topics to be covered in the session (week) -Setting of lower anterior teeth
Session 18 (Week 18)	Topics to be covered in the session (week) -Setting of upper posterior teeth.
Session 19 (Week 19)	Topics to be covered in the session (week) -Types of the posterior teeth
Session 20 (Week 20)	Practical Midterm Exam
Session 21 (Week 21)	Topics to be covered in the session (week) Wax up
Session 22 (Week 22)	•Flasking
Session 23 (Week 23)	Topics to be covered in the session (week) - Finishing of final stage
Session 24 (Week 24)	Topics to be covered in the session (week) -polishing of final stage



Session 25 (week 25)	Topics to be covered in the session (week) - Complete denture error
Session 26 (week 26)	Topics to be covered in the session (week) - Repair
Session 27 (week 27)	Topics to be covered in the session (week) - Rebase
Session 28 (week 28)	Topics to be covered in the session (week) - Reline
Session 29 (week 29)	Topics to be covered in the session (week) - Duplication of denture
Session 30 (week 30)	Topics to be covered in the session (week) - Presentation for every student
Session 31 (Week 31)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Partial Removable Prosthodontics II

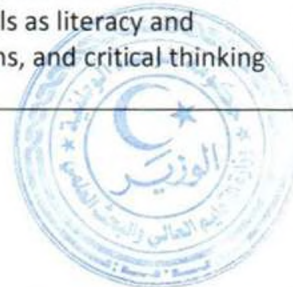
1	Course name	Partial Removable prosthodontic 2
2	Course Code	DL403
3	Course type: /general/specialty/optional	specialty
4	Accredited units	6
5	Educational hours	6
6	Pre-requisite requirements	Partial Removable prosthodontic 1
7	Program offered the course	Dental technology
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course is designed to the undergraduate students at the 4 th year, and this course will provide the students with the necessary theoretical background that includes explanations all the types of removable partial denture , indication , contraindication, the laboratory steps of fabricating



Textbooks required for this Course:	<p>Book Title & ISBN: Phillips' science of dental materials Removable partial prosthodontics Additional Resources: http://www-personal.umich.edu/~sbayne/dental-materials/RPD-Acrylic-HO.pdf- - (http://www.fotosearch.com/photos-images/dentures.html). Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.</p>
Course Duration	<p>156 hours in the year An additional 1 to 2 hours of homework per day is expected during this course.</p>
Delivery	<p>Lecture- practice lectures – educational videos –training – collect information from libraries and internet - based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.</p>
Course Objectives:	<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> • Understand the various processing steps used during fabrication of partial denture. • Identify the various materials used in fabrication. • Recognize the theoretical background of different partial dentures. • Identify the different steps of constructing different partial prosthesis. • Construct interim denture and flexible denture. • Implement a dental laboratory instruments and devices professionally.
Course Assessments	<p>Assignment 1: PBL (Report, p.pt presentation, Model) 15% Midterm: Theoretical Midterm 10%, practical midterm 10 %, Daily Assessments: Homework and Quizzes 5 % Final Exam: Theoretical 30%, Practical 30% A 60 % is required for a pass in this course.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Topics to be covered in the session (week) Introduction of removable partial denture (RPD) -</p>
Session 2 (Week 2)	<p>Topics to be covered in the session (week) - RPD component of Chromium cobalt</p>
Session 3 (Week 3)	<p>Topics to be covered in the session (week) - Major connector.</p>
Session 4 (Week 4)	<p>Topics to be covered in the session (week) major connector.maxillary-</p>
Session 5 (Week 5)	<p>Topics to be covered in the session (week) Mandibular major connector--</p>
Session 6(Week 6)	<p>Topics to be covered in the session (week) - types of minor connector</p>
Session 7 (Week 7)	<p>Topics to be covered in the session (week) -fabrication of minor connector</p>
Session 8(Week 8)	<p>Topics to be covered in the session (week) - Rest</p>



Session 9 (Week 9)	Topics to be covered in the session (week) -Types of Rest
Session 10 (Week 10)	Topics to be covered in the session (week) -Rest seat
Session 11 (Week 11)	Midterm Exam
Session 12 (Week 12)	Topics to be covered in the session (week) -Types of rest seat
Session 13 (Week 13)	Topics to be covered in the session (week) -Direct retainer for class I , II -Direct retainer for class III , IV
Session 14 (Week 14)	Topics to be covered in the session (week) -indirect retainer
Session 15 (Week 15)	Topics to be covered in the session (week) -types of indirect retainer
Session 16 (Week 16)	Topics to be covered in the session (week) - dental surveyor
Session 17 (Week 17)	Topics to be covered in the session (week) - Types of dental surveyor
Session 18 (Week 18)	Midterm practical exam
Session 19 (Week 19)	Topics to be covered in the session (week) - uses of dental surveyor
Session 20 (Week 20)	Topics to be covered in the session (week) - objectives of dental surveyor
Session 21 (week 21)	Topics to be covered in the session (week) - tooth selection
Session 22 (week 22)	Topics to be covered in the session (week) - types of Denture base
Session 23 (week 23)	Topics to be covered in the session (week) - RPD component of acrylic resin
Session 24 (week 24)	Topics to be covered in the session (week) - RPD acrylic resin fabrication
Session 25 (week 25)	Topics to be covered in the session (week) - Interim partial denture
Session 26 (week 26)	Topics to be covered in the session (week) - Flexible denture
Session 27 (week 27)	Topics to be covered in the session (week) - repair of partial denture.
Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.



Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Practical Training Course

1	Course name	Practical Training Course
2	Course Code	DL405
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Complete Denture Removable I,II Fixed prosthodontic I,II
7	Program offered the course	Department of Dental Technology
8	Instruction Language	English
9	Date of course approval	2018-2019
Brief Description:		Introducing the lab and its security and safety components, controls and regulations inside the lab and clinic, and the matters to be followed.
Textbooks required for this Course:		Book: Basics of Dental Technology: A Step by Step Approach Tony Johnson, David G. Patrick, Christopher W. Stokes, David G. Wildgoose, Duncan J. Wood Wiley, Aug 6, 2015 - Medical - 200 pages
Course Duration		28 Weeks
Delivery		Lectures, small discussion Groups, seminars, project-based learning (PBL), videos, practical (laboratory).
Course Objectives:		By the end of the course, the student be able to: <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Criticize his/her work. - Think critically to solve the problem may be faced during the work. - Implement of dental laboratory instruments and devices. - Use the Internet for preparing scientific researches. - Write a report about the steps that implemented in the laboratory.
Course Assessments		Midterm: 40%



	Final Exam: Theoretical 30%, Practical 30% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
(Week 1-27)	Before graduation, all students are required to spend a period of practical training at a rate of 4 hours per week in one of the dental laboratories in public dental clinics under the supervision of dental laboratory workers to help them receive cases from the clinic.
(Week 28)	Theoretical and oral Final Exam
Attendance Expectations	Students are expected to attend every session, lecture, and lab. Absences are permitted only if there is unavoidable reason.
Generic Skills	By the end of the course, the student be able to: <ul style="list-style-type: none"> - Communicate effectively with colleagues. - Work in group (team work). - Time management. - Give p.pt presentation. - Criticize his/her work. - Think critically to solve the problem may be faced during the work. - Implement of dental laboratory instruments and devices. - Use the Internet for preparing scientific researches. - Write a report about the steps that implemented in the laboratory.

Graduation Research project

1	Course name	Graduation Research project
2	Course Code	DL406
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4
5	Educational hours	4
6	Pre-requisite requirements	Research Methods and Data Analysis
7	Program offered the course	Dental Laboratories
8	Instruction Language	English
9	Date of course approval	
Parts of Research Paper		Title Page



➤ For the cover page, each department has a distinct color as the following:-

➤ Title page must contain the following:-

- University name (Al Asmarya University) (font size 18 and bold in golde colour)
- Faculty name (Faculty of Public health and Nursing) (font size 18 and bold in golde colour)
- Department name (Department of Public Health or Department of Nursing) (font size 18 and bold in golde colour)
- Title of the thesis (font size 16 and bold in golde colour)
- A Thesis Submitted in Fulfilment of the Requirements for the Degree of Bachelor of (Public Health or Nursing) (font size 14 and bold in golde colour)
- Students' names (font size 14 and bold in golde colour)
- Supervisor name (font size 14 and bold in golde colour)
- Academic year (e.g. 2017/2018) (font size 14 and bold in golde colour)

15. Font Type and Size

➤ All text in the report one font style should be used in throughout the thesis and should be (Times New Roman). Font size of the entire thesis should be 12 except captions for tables and figures, tables and references, which is 11 in size.

➤ The font size of Heading 1 (e.g. Chapters) should be 14 and bold and sub headings should be 12 and bold.

16. Page Layout and Margins

➤ The Page Layout of entire thesis must be portrait and in A4 size format. Landscape orientation may be used to fit figures or tables. The top, bottom, and right margins should be 2.5 cm and the left margin should be 3 cm.

17. Pagination

➤ Page numbers should be cantered at the bottom of the page. Preliminary pages (Dedication to list of Abbreviations) should be numbering in small roman numerals (i, ii, iii, etc.). The subsequent pages should be numbering numerals (1, 2, 3, etc.).

➤

18. Latin Terms

➤ Latin terms are always given in italics.

19. Abstract

➤ The abstract is a brief summary of the thesis. It presents all the major elements of the work in a highly condensed form. The length of the abstract should not exceeding 300 words. It includes background about the research topic, research objective, research methods, results, conclusion and recommendation.

20. Acknowledgement

➤ The researcher expresses his gratitude and appreciation to the people who have a role in completing the study.

21. Table of contents



➤ Contains a list of contents included in the study of research. The table of contents contains two main things: the title and the page where it could be found

➤ Make sure that the title of each contents should be self-explanatory and should not leave the reader confused.

➤ Write chapter and sub-topics below.

22. List of Figures

➤ Includes all tables, figures, graphs , photos, charts , and drawing included in the research

➤ Each presentation should be properly labeled with pagination.

23. CHAPTER I

E. Introduction

- This is the first part of the research paper
- This is where the researcher provide the topic of the research paper where the context in terms of content of the research paper is given

F. Problem of the study

- States the main problem that the researcher is trying to solve
- It follows the formulation of the title and should be faithful to it
- It specifically points the important questions that the study needs to answer
- It also serves as the bases for the questionnaires.

G. Objectives of the study

- The researcher should state the objectives of this study.

H. Significance of the Study

- The questions to answer here is" Why conduct the research?"
- The researcher have to identify who will benefit from the research and how they will be benefited.
- This should match with the recommendation.

24. CHAPTER II: LITERATURE REVIEW

➤ This is where you will use your note, Literature review should cover the general and specific information.

➤ Should not lift words from other sources, This will require your command of language and writing skills such as summarizing, paraphrasing and writing indirect speeches.

➤ Data and information can be taken from books, magazines, studies and newspapers that can be related to your research.

➤ Include the surnames of authors and the publication date of their work who provided sources for your study.

➤ Should include a title for the *previous studies*, and the title of the study, objective, methodology and the most important results should be written.

25. CHAPTER III. METHODS AND PROCEDURES

➤ Research Design

- Discuss the kind of research used in the study. Should answers why the method used is appropriate for the study.
- Example of research design: Descriptive survey method



	<ul style="list-style-type: none"> ➤ <i>Study Sample</i> <ul style="list-style-type: none"> ● Defines how the population samples are chosen. ➤ <i>Scope and limitation of the Study</i> <ul style="list-style-type: none"> ● Determines the coverage of the research and all the things that it will cover in order to be specific. <ul style="list-style-type: none"> ● It includes the following: <ul style="list-style-type: none"> ✓ Actual place where the study will be conducted ✓ Duration of the conduct of the study ✓ Limit of the number of respondents. ➤ <i>Procedure:</i> <ul style="list-style-type: none"> ● Outlines the detailed methodology that was carried out to process the samples in your study. ➤ <i>Statistical analysis of data</i> <ul style="list-style-type: none"> ● Shows statistical software and tests used in this study. ➤ <i>Ethics of study</i> <ul style="list-style-type: none"> ● Ethical permit must be written to conduct this study. <p>26. CHAPTER IV : RESULTS OF DATA ANALYSIS</p> <ul style="list-style-type: none"> ➤ Presents all the data gathered by tabulating all the gathered information. <ul style="list-style-type: none"> ➤ Aside from the tables, an interpretation of each presented data should follow. This will serve as the basis of the summary of findings. <p>27. CHAPTER V: DISSECTION , CONCLUSIONS AND RECOMMENDATIONS</p> <ul style="list-style-type: none"> ➤ <i>Dissection</i> <ul style="list-style-type: none"> ● Interpret and explain your results and compare them with others findings. ➤ <i>Conclusions</i> <ul style="list-style-type: none"> ● Concludes the major contributions of the significant findings. ➤ <i>Recommendations</i> <ul style="list-style-type: none"> ● This should be directly based on the significance of the study. ● This also includes recommended actions that should be done after the conduct of the study such as further assessment of the subject, focus on other factors etc.
<p>CITATION AND REFERENCING</p>	<ul style="list-style-type: none"> ● Student follows the Harvard for literature citation and referencing. Students are highly advised to use reference manger software like Endnote or Mendeley. ● Examples of Harvard citation and referencing:- <ul style="list-style-type: none"> ● Journal article <ul style="list-style-type: none"> ● In-text citation: HbA1c levels are elevated well in advance of the clinical development of type 2 diabetes (Pradhan et al.,2007). ● In reference list: Pradhan, A.D., Rifai, N., Buring, J.E. & Ridker, P.M. 2007. Haemoglobin A1c predicts diabetes but not cardiovascular disease in nondiabetic women. The American journal of medicine, 120(8):720-727. ● Websites <ul style="list-style-type: none"> ● In-text citation: Haemoglobin A1C testing (A1C) is the test used to measure your average blood glucose level over an extended period of time (2to 3 months) (Simmons,2014).



- In reference list: Simmons, J. 2014. Haemoglobin A1C Testing. [Online]. Available: <https://type2diabetes.com/diagnosis-and-testing/hemoglobin-a1c/>[Accessed21November 2018].
- Thesis
- In-text citation: The rate of false positive cells can be reduced by targetting more than one chromosomal abnormality (Kasprzyk,1998).
- In reference list: Kasprzyk, A. 1998. Investigation of clonality and minimal residual disease in haematological malignancy using fluorescent in situ hybridization. PhD, University of London.
- Book
- In-text citation: Giardia transmission occurs by the fecal-oral route, either directly, via person to person contact or indirectly, via contamination of surface water or food (Satoskar,2009).
- In reference list: Satoskar, A.R. 2009. Medical parasitology. Texas/USA: CRC Press.



8- قسم الإدارة الصحية



إدارة الموارد البشرية

1	اسم المقرر الدراسي	إدارة الموارد البشرية
2	رمز المقرر	HA406
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	مبادئ الإدارة
7	البرنامج المقدم للدورة	قسم الإدارة الصحية
8	لغة التدريس	اللغة العربية واللغة الانجليزية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	يعطي هذا المقرر الى الطلاب بعد اجتياز مقرر مبادئ الإدارة (HA222) ، الذي يُدرّس لهم في الفصل الدراسي الثاني من كل عام. يقدم هذا المقرر دراسة الدور الأساسي لإدارة الموارد البشرية داخلا لمؤسسات الصحية. ويشمل مفهوم وانواع وتخصصات إدارة الموارد البشرية والحفاظ عليها وتطويرها باستمرار، ومبررات التحول من إدارة شؤون الموظفين الى مفهوم إدارة الموارد البشرية، وتخطيط وتنظيم الموارد البشرية في ظل تحديات المعاصرة، وتقديم أساس شامل حول آلية اعداد التحليل وتصميم العمل للوظائف وأهمية صيانة وتطوير نظام معلومات خاص بالموارد البشرية في المؤسسات. يهدف المقرر إلى تمكين الطالب من التخطيط والتنظيم والتوجيه والرقابة على الموارد البشرية من خلال تطوير الإدارة الحيوية لإدارة الموارد البشرية والمديرين التنفيذيين وكبار القادة بالإضافة الى تطوير وصيانة شبكة الانترنت ونظم الاتصال الحديثة.
الكتب المقررة	عنوان الكتاب المقرر و ISBN: إدارة الموارد البشرية تأليف (Gary Dessler) تعريب ومراجعة أ.د.محمد سيد احمد عبدالمتعال...استاذ ادارة الاعمال كلية التجارة جامعة المنصورة. يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
المدة الزمنية للمقرر	28 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: تعريف الطلاب بماهية ادارة الموارد البشرية تعريف الطالب بتحليل العمل من خلال وصف ومواصفات الوظيفة توضيح للطلاب تخطيط إدارة القوي العاملة. تعريف الطالب بكيفية استقطاب الإيادي العاملة في المنظمات. تعريف الطالب بطرق التدريب وتنمية الموارد البشرية.
طريقة التقييم	الامتحان النصفى 30% الامتحان النهائي 60% الواجبات المنزلية ، النشاطات الصفية 10% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	ادارة الموارد البشرية ، ماهيتها ، طورها ، وأهدافها ، والعائد والتكلفة المصاحبة لها.
الأسبوع الثاني	تحليل وتوصيف العمل.
الأسبوع الثالث	الوظيفة ، تصميمها ، توصيفها ، مواصفات شاغلها
الأسبوع الرابع	تخطيط الاحتياجات من الموارد البشرية ، النموذج الأساسي وتحليل المعروض منها.
الأسبوع الخامس	الاستقطاب ، الاختيار والتعيين للموارد البشرية.

الأُسبوع السادس	تصميم نظام الأُجور.
الأُسبوع السابع	طرق تقييم الوظائف وتحديد الدرجات الوظيفية والأجر المناسب لها.
الأُسبوع الثامن	الامتحان النصفى
الأُسبوع التاسع	الحوافز والمزايا والخدمات.
الأُسبوع العاشر	اعلام الأفراد بنتائج التقييم وكيفية ادارة نتائج التقييم.
الأُسبوع الحادي عشر	تقييم الأداء. وإدارة النتائج المترتبة عليه.
الأُسبوع الثاني عشر	التدريب ،أهميته وأنواعه ، كيفية تحديد الاحتياجات التدريبية.
الأُسبوع الثالث عشر	التدريب ,خطواته من المسئول عنه , أنواعه.
الأُسبوع الرابع عشر	تصميم برنامج التدريب.
الأُسبوع الخامس عشر	تخطيط وتنمية المسار الوظيفي.
الأُسبوع السادس عشر	الامتحان النهائى
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	يتم تعديل المعلومات الواردة في مخطط هذه الدورة التدريبية وفق التطور العلمي ومقترحات استاذ المادة . وتتم مراجعة محتوى الدورات بشكل مستمر للتأكد من ملاءمتها لتغيير التعليم الوظيفي واحتياجات التسويق. سيحاول الاستاذ تقديم إشعار بالتغييرات للقسم العلمي لاقرارها وتبليغ الطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني.



الإدارة المالية

1	اسم المقرر الدراسي	الإدارة المالية
2	رمز المقرر	HA304
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	مبادئ الإدارة
7	البرنامج المقدم للدورة	الإدارة الصحية
8	لغة التدريس	اللغة العربية والانجليزية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	يعطي هذا المقرر الى الطلاب بعد اجتياز مقرر مبادئ الإدارة (HA 222)، الذي يُدرّس لهم في الفصل الدراسي الثاني من كل عام. يقدم هذا المقرر دراسة تفصيلية عن مفهوم وأنواع الإدارة المالية، وتشمل أساليب التحليل المالي وأنواع القوائم المالية والقيم الزمنية للنقود وتقييم الأدوات المالية واستخدام طرق تقييم المشاريع الاستثمارية. يهدف المقرر الى تمكين الطالب من حساب المعادلات المالية المستخدمة المشروعات المالية وتفسير نتائج التحليل المالي للاختيار بين المشروعات الاستثمارية والمقارنة بين العائد والمخاطر.
الكتب المقررة	عنوان الكتاب المقرر و ISBN: اساسيات الإدارة المالية
المدة الزمنية للمقرر	28 ساعة تدريسية
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: 1- تزويد الطلاب بالمعرفة اللازمة للوظيفة المالية (مفهومها ، اهدافها، وتطورها) . 2- إلمام الطلاب بعمليات التحليل المالي . 3- تعرف الطلاب بالتنبؤ المالي وكيفية اتخاذ القرارات المتعلقة بتوفير الموارد المالية 4- توضيح للطلاب طرق تقييم مقترحات الإنفاق الراسمالي، وكيفية إدارة هذا النوع من الاستثمارات.
طريقة التقييم	الامتحان النصفى 30% الامتحان النهائى 60% الواجبات المنزلية ، النشاطات الصفية 10% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	مفهوم الإدارة المالية (تعريفها، أهدافها، وظائفها، تطورها)،
الأسبوع الثاني	القوة الإيرادية ووسائل تحسينها
الأسبوع الثالث	القوائم المالية و التحليل المالي،
الأسبوع الرابع	دراسة القوائم المالية المقارنة.
الأسبوع الخامس	القيمة الزمنية للنقود (تعريفها،
الأسبوع السادس	وكيفية حساب القيمة الحالية والمستقبلية
الأسبوع السابع	تخطيط الاستثمارات الراسمالية (مفهوم الإنفاق التشغيلي و الإنفاق الراسمالي) ،
الأسبوع الثامن	الامتحان النصفي

الأسبوع التاسع	طرق تقييم مقترحات الانفاق الراسمالي.
الأسبوع العاشر	المخاطرة والعائد والروافع المالية
الأسبوع الحادي عشر	مصادر التمويل (الائتمان التجاري،)
الأسبوع الثاني عشر	الإيمان المصرفي
الأسبوع الثالث عشر	الاسهم، السندات
الأسبوع الرابع عشر	تكلفة الاموال و قرارات الهيكل المالي
الأسبوع الخامس عشر	مراجعة
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالغياب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	يتم تعديل المعلومات الواردة في مخطط هذه الدورة التدريبية وفق التطور العلمي ومقترحات استاذ المادة . وتتم مراجعة محتوى الدورات بشكل مستمر للتأكد من ملاءمتها لتغيير التعليم الوظيفي واحتياجات التسويق. سيحاول الاستاذ تقديم إشعار بالتغييرات للقسم العلمي لاقرارها وتبليغ الطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني.



الاقتصاد الصحي

الاقتصاد الصحي	اسم المقرر الدراسي	1
HA303	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
مبادئ اقتصاد	المتطلبات المطلوبة مسبقا	6
الادارة الصحية	البرنامج المقدم للدورة	7
اللغة العربية والانجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9

وصف موجز للمقرر	يعطي هذا المقرر الى الطلاب بعد اجتياز مقرر مبادئ الاقتصاد (HA327)، الذي يُدرّس لهم في الفصل الدراسي الثالث من كل عام. يقدم هذا المقرر دراسة شاملة عن أساسيات اقتصاديات الصحة وآلياتها وأنواعها المختلفة والعوامل المؤثرة على التمويل للصحة وتمويل الرعاية الصحية ويتضمن ايضا عقود التأمين، ويشرح التحليل الاقتصادي والنظري للاقتصادية في وصف الموارد وتحديد خصائصها وتصنيفاتها واستخداماتها بالإضافة إلى بطرق تنميتها والمحافظة عليها والآثار الاقتصادية في سوق الخدمات الصحية. يهدف هذا المقرر إلى تمكين الطالب من تحليل وقبول العرض والطلب في الخدمات الصحية والعوامل المؤثرة عليها، والمعرفة الاقتصادية عن الصحة والحياة والأسواق الاقتصادية وآلياتها والتوازنات الاقتصادية الخاصة بها في سوق الخدمات الصحية، والتعرف على السلع الصحية وأسباب فشل السوق وعدم كفاءة سوقها السلوكي كذالك عقود التأمين. وكيفية التمويل للصحة وتمويل الرعاية الصحية والعوامل التي تؤثر على تكاليف الرعاية الصحية في المجتمع، وقياس المنافع والتكاليف المترتبة على الخدمات الصحية وتحليل المنافع والتكاليف وأساليب التقييم المبنية على التفاضل. وإجراء معادلات توازن الصحة والاستدامة الاقتصادية في القطاع الصحي.
الكتب المقررة	عنوان الكتاب المقرر و ISBN: اقتصاديات الرعاية الصحية موارد إضافية: مقدمة في الاقتصاد الصحي يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
المدة الزمنية للمقرر	28 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: 1. تعريف الطلاب بتطبيق مبادئ الاقتصاد في ميدان الصحة 2. تعريف الطلاب على آليات العرض والطلب في مجال الصحة 3. دعم الطالب بالعلوم المحلية والدولية وبالمهارات الضرورية اللازمة لفهم كيفية تمويل الخدمات الصحية 4. تعريف الطلاب بأنظمة التأمين الصحي المطبقة في بعض البلدان وكيفية التقييم الاقتصادي لبرامج الرعاية الصحية.
طريقة التقييم	الامتحان النصفى: 30% الامتحان النهائي: 60% الواجبات المنزلية، النشاطات الصفية: 10% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسي



الأسبوع الأول	المفاهيم الأساسية في اقتصاديات الصحة.
الأسبوع الثاني	عرض وطلب السلع والخدمات الصحية.
الأسبوع الثالث	عرض السلع والخدمات الصحية.
الأسبوع الرابع	تمويل الصحة والرعاية الصحية.
الأسبوع الخامس	المدفوعات لمقدمي الرعاية الصحية.
الأسبوع السادس	التأمين الصحي الخاص
الأسبوع السابع	تحقيق التغطية الصحية الشاملة.
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	مراحل التقييم الاقتصادي وتحديد مشكلة اتخاذ القرار.
الأسبوع العاشر	تحديد وقياس وتقييم النتائج
الأسبوع الحادي عشر	النظام الصحي الأمريكي
الأسبوع الثاني عشر	النظام الصحي الفرنسي
الأسبوع الثالث عشر	النظام الصحي الإسباني.
الأسبوع الرابع عشر	النظام الصحي المحلي
الأسبوع الخامس عشر	مراجعة
الأسبوع السادس عشر	الامتحان النهائى
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	يتم تعديل المعلومات الواردة في مخطط هذه الدورة التدريبية وفق التطور العلمي ومقترحات استاذ المادة . وتتم مراجعة محتوى الدورات بشكل مستمر للتأكد من ملاءمتها لتغيير التعليم الوظيفي واحتياجات التسويق. سيحاول الاستاذ تقديم إشعار بالتغييرات للقسم العلمي لاقرارها وتبليغ الطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني.

القوانين و التشريعات الصحية

1	اسم المقرر الدراسي	القوانين و التشريعات الصحية
2	رمز المقرر	HA405
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	الانظمة والسياسات الصحية
7	البرنامج المقدم للدورة	الادارة الصحية
8	لغة التدريس	اللغة العربية واللغة الإنجليزية
9	تاريخ الموافقة على المقرر	2022



وصف موجز للمقرر	تزويد الطالب بالمعلومات الكافية عن القوانين والتشريعات الصحية المحلية والدولية من حيث نشأتها وتعديلاتها وعلاقتها بالقوانين الصحية الدولية وطرق استنباط القوانين الصحية بما يتماشى مع المبادئ الخاصة بالدولة الليبية والشريعة الإسلامية
الكتب المقررة	القوانين والتشريعات الليبية المنظمة للعمل الصحي - القانون الصحي الليبي وتعديلاته (106) و ISBN : موارد إضافية: من الانترنت تتعلق بمواضيع الدراسة تم استخدام روابط من الشبكة المعلوماتية ويمكن استخدام كتب إضافية و بحوث وروابط نت لمواضيع من الانترنت وفقا لتقدير استاذ المقرر ..
المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر (2) ساعة اسبوعيا.
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: <ul style="list-style-type: none"> ▪ فهم لما يحتويه المقررات من خلال دراسة كل موضوع بتفاصيله على حدا . ▪ تحديد ومحاولة إيجاد الحلول لتلك المشاكل القانونية التي يقع فيها المشرع الصحي . ▪ التعرف على النصوص القانونية وفهمها بشكل صحيح . ▪ تحديد المشكلة وطريقة حلها و الوقوف على أفضل السبل للوصول إلي الظواهر السلبية ▪ التعرف على مختلف التطبيقات القانونية ومدى معالجة القضاء للعديد من المشاكل الصحية والبيئية ▪ بناء ولو كان من غير ذوي الاختصاص ملكة قانونية تمكن الطالب من إثراء فكره القانون ▪ كتابة بحوث وورقات عمل تستند على فهم عميق لما درسه الطالب خلال المادة العلمية.
طريقة التقييم	<ul style="list-style-type: none"> ● الامتحان النصفى 30% ● الامتحان النهائى 60% ● الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية 10% ● درجة النجاح: 60..
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	المواضيع التي سيتم تغطيتها في الأسبوع ● مقدمة والتعريف بالمقرر
الأسبوع الثاني	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ مفاهيم أساسية ▪ الصحة الجسدية ▪ الطرق المستخدمة لتقدير الصحة الجسدية ▪ الصحة النفسية ▪ علامات تدل على الصحة النفسية ▪ الصحة الاجتماعية
الأسبوع الثالث	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ صحة إيجابية ▪ المعايير الصحية ومعدل وفيات الرضع ▪ متوسط العمر المتوقع للخدمات والأنشطة الصحية
الأسبوع الرابع	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ صحة إيجابية ▪ المعايير الصحية ومعدل وفيات الرضع ▪ متوسط العمر المتوقع للخدمات والأنشطة الصحية
الأسبوع الخامس	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ واجب الكادر الصحي للمؤسسة التي يعمل فيها ▪ العلاقات المهنية: العلاقة بين الكادر الصحي والزملاء ▪ إحالة المرضى ▪ العلاقة مع طاقم التمريض ▪ العلاقة مع المهن الصحية المساندة ▪ القضايا الاجتماعية المتعلقة بالصحة



الأسبوع السادس	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ مبدأ التعامل السري فيما يتعلق بقصر المرضى ▪ مبدأ التعامل السري فيما يتعلق بإفشاء التقارير الطبية لمؤسسات جمع البيانات ▪ أخلاقيات البحث الطبي ▪ شروط البحث عن الأجنة ▪ متى تتوقف عن البحث
الأسبوع السابع	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ أخلاقيات المهن الطبية والصحية ▪ علاقة الكادر الصحي بالمريض ▪ آداب المهنة الصحية ▪ واجبات العاملين الصحيين ▪ علاقة الكادر الصحي بالمريض ▪ واجبات الكادر الصحي تجاه المريض ▪ واجبات الكادر الصحي تجاه مهنته
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	المواضيع التي سيتم تغطيتها في الأسبوع. <ul style="list-style-type: none"> ▪ تعريف الأمراض المعدية ▪ مكافحة الأمراض المعدية
الأسبوع العاشر	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ الحجر الصحي وإشكالية تطبيقه. ▪ مدي معالجة القانون الليبي (106) والمقارن للمخالفين للنظام الصحي .
الأسبوع الحادب عشر	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ المرافق الصحية العامة والخاصة . ▪ تعريف المرفق الصحي. ▪ أنواع المرافق العامة الصحية.
الأسبوع الثاني عشر	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ المركز الوطني للأمراض السارية وعلاقته بالتشريعات الصحية المنظمة للصحة العامة
الأسبوع الثالث عشر	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ سياسات الطب الوقائي ودورها في الحد من انتشار الأمراض السارية.
الأسبوع الرابع عشر	المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> ▪ السياسات والإجراءات والأنظمة الإدارية المنظمة للعملية الصحية بين مستويات النظام الصحي (سياسات الإحالة والدخول)
الأسبوع الخامس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي.



لتخطيط والتقييم الصحي

التخطيط والتقييم الصحي	اسم المقرر الدراسي	1
HA309	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
مبادئ الادارة	المتطلبات المطلوبة مسبقا	6
الادارة الصحية	البرنامج المقدم للدورة	7
اللغة العربية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9

يركز هذا المقرر على شرح مفهوم التخطيط الصحي وتبيان أهميته بالنسبة للمؤسسات الصحية كأداة لتلبية احتياجات المواطنين الصحية وذلك من خلال وضع الخطة المناسبة لتأمين الموارد البشرية والمادية اللازمة لتلبية هذه الاحتياجات سواء أكان ذلك على المستوى المجتمعي ككل أو على مستوى الإدارة الصحية. كما يركز على شرح مفهوم السياسات الصحية وتوضيح محاورها الرئيسية.	وصف موجز للمقرر
عنوان الكتاب المقرر و ISBN: تخطيط وتصميم مرافق الرعاية الصحية موارد إضافية: كتاب تقييم الخدمات الصحية يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.	الكتب المقررة
28 ساعة	المدة الزمنية للمقرر
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.	طريقة التدريس
عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: 1. القدرة على تحليل السياسات الصحية والتخطيط للخدمة الصحية 2. القدرة على الاستجابة مع معطيات السياسات الصحية 3. دعم الطالب بالعلوم المحلية والدولية وبالمهارات الضرورية اللازمة لفهم كيفية القيام بالتخطيط الصحي على المستوى الكلي والجزئي. 4. تحفيز الطالب لكي يعكس قدراته في التعامل مع التجربة الميدانية في الاستقصاء والبحث والتحرري في مجالات التخطيط الصحي والسياسات الصحية	المستهدف
الامتحان النصفى :30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح: 60%	طريقة التقييم
محتوى المقرر الدراسي	محتويات المقرر
مقدمة في تخطيط الخدمات الصحية	الأسبوع الأول
نظرة عامة حول التخطيط الصحي	الأسبوع الثاني
أهمية التخطيط الصحي	الأسبوع الثالث
عملية التخطيط	الأسبوع الرابع
تطوير الخطة ووضعها حيز التنفيذ	الأسبوع الخامس
ملية التقييم المجتمعي	الأسبوع السادس
تحديد الخصائص الصحية للسكان	الأسبوع السابع
امتحان نصفي	الأسبوع الثامن



الأسبوع التاسع	تدقيق التخطيط الصحي و مناهج بحثه
الأسبوع العاشر	التخطيط الاستراتيجي
الأسبوع الحادي عشر	تخطيط الاحتياجات البشرية الصحية
الأسبوع الثاني عشر	الجديد في تخطيط قدرات المستشفيات
الأسبوع الثالث عشر	السياسات الصحية
الأسبوع الرابع عشر	محاور السياسات الصحية
الأسبوع الخامس عشر	خاتمة ومراجعة للمقرر
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط هذه الدورة التدريبية صحيحة في وقت النشر. تتم مراجعة محتوى الدورة بشكل مستمر من قبل أستاذ المادة والقسم العلمي للتأكد من ملاءمته للمتطلبات المهنية المتغيرة للتعليم والتسويق. سيحاول المعلم تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضًا مراجعة الجدول الزمني.

الرقابة والتفتيش الصحي

1	اسم المقرر الدراسي	الرقابة والتفتيش الصحي
2	رمز المقرر	HA407
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	لا يوجد
7	البرنامج المقدم للدورة	قسم الادارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	يقدم هذا المقرر دراسة شاملة عن أساسيات الرقابة والتفتيش الصحي وأنواعه، وخصائص الرقابة الجيدة وسماتها وأدواتها وأساليبها والإجراءات الخاصة بالرقابة في أداء المؤسسات والأفراد، ودورها في برامج الإصلاح والتحديث الإداري في مختلف الإدارات بما في ذلك القطاعات التشريعية والقضائية والتنفيذية وشرح المسؤولية الاجتماعية وآليات الرقابة المطبقة في المؤسسات مثل التجارب العالمية والعربية والمحلية في تعزيز النزاهة ومكافحة الفساد، ودور الهيئات الرقابية في تعميق أسس النزاهة والشفافية والمساءلة القانونية والإدارية والاجتماعية.
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يهدف هذا المقرر إلى تمكين الطالب من وضع استراتيجيات تعزيز النزاهة ومكافحة الفساد. ومعرفة أهمية جهاز الرقابة والتفتيش والمتابعة التي تؤدي إلى إصلاح المنظمات والقضاء على الفساد وذلك من خلال معرفة علاقتها بالوظائف الإدارية الأخرى وأدواتها وأيضاً توقبت مراحل أو خطوات القيام بالرقابة الإدارية داخل المنظمات الصحية.	
عنوان الكتاب المقرر و ISBN: الرقابة الصحية موارد إضافية: كتاب تقييم الخدمات الصحية يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقاً لتقدير استاذ المقرر.	الكتب المقررة
28 ساعة	المدة الزمنية للمقرر
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المختبرية.	طريقة التدريس
عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: 1. التعرف على اكتشاف الانحرافات والأخطاء وقت حدوثها، ومنع تكرارها أو تزايدها مستقبلاً. 2. التعرف على أفضل الأنماط الرقابية الصحية التي تحقق من خلالها الأجهزة الرقابية الصحية الفاعلية في رقابتها على المباني والمصانع والمحلات التي تقوم بتصنيع وبيع المواد الغذائية وما في حكمها. 3. التعرف على الضغوطات التي تواجه مدققي الدوائر الرقابية الصحية، والتي تحول دون تطبيقهم لإجراءات الرقابة. 4. التعرف على المبادئ الأخلاقية التي يجب أن يمتلكها ويلتزم بها مدققو الرقابة الصحية لتحقيق الفاعلية في عملهم الرقابي. 5. التعرف على درجة تطبيق المعايير الرقابية الصحية وهيكلية العمل الرقابي الصحي؛ لتحقيق فاعلية العمل الرقابي. 6. التعرف على مدى قيام مدققي الرقابة الصحية بفحص أنظمة، وإجراءات العمل الرقابي؛ لتحقيق الفاعلية في عملهم الرقابي.	المستهدف
الامتحان النصفي: 30% الامتحان النهائي: 60% الواجبات المنزلية، النشاطات الصفية: 10% درجة النجاح: 60%	طريقة التقييم
محتوى المقرر الدراسي	محتويات المقرر
التعريف بأهداف ومحتويات المقرر وطرق التقييم المتبعة	الأسبوع الأول
أساسيات الرقابة والتفتيش الصحي وأنواعها،	الأسبوع الثاني
وخصائص الرقابة الجيدة وسماستها وأدواتها وأساليبها	الأسبوع الثالث
تعريف بالمخاطر الصحية	الأسبوع الرابع
تطبيق الإشتراطات الصحية في مباني ومرافق المنشآت الغذائية وتشمل: تصميم المباني - الجدران - الأرضيات - الأبواب - وغيرها. الأجهزة والمعدات الأيدي العاملة	الأسبوع الخامس
نظام السلامة الغذائية	الأسبوع السادس
التعريف بأنظمة الرقابة المطبقة على المنشآت الغذائية	الأسبوع السابع
امتحان نصفي	الأسبوع الثامن
التفتيش الصحي على المنشآت الغذائية	الأسبوع التاسع
طرق الوقاية ومكافحة الآفات في المنشآت الصحية	الأسبوع العاشر
النفائيات الطبية في المنشآت الصحية وطرق معالجته	الأسبوع الحادي عشر
زيارة ميدانية إلى إحدى المنشآت الصحية	الأسبوع الثاني عشر
السياسات الصحية	الأسبوع الثالث عشر
زيارة ميدانية إلى إحدى المنشآت الصحية المستشفى العام نموذج	الأسبوع الرابع عشر
خاتمة ومراجعة للمقرر	الأسبوع الخامس عشر
الامتحان النهائي	الأسبوع السادس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي، وفي الوقت المحدد، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب



مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقررات.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط هذه الدورة التدريبية صحيحة في وقت النشر. تتم مراجعة محتوى الدورة بشكل مستمر من قبل أستاذ المادة وقسم العلوم للتأكد من ملاءمته للمتطلبات المهنية المتغيرة للتعليم والتسويق. سيحاول المعلم تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضًا مراجعة الجدول الزمني

السلوك التنظيمي

1	اسم المقرر الدراسي	السلوك التنظيمي
2	رمز المقرر	HA305
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	لا يوجد
7	البرنامج المقدم للدورة	قسم الادارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022
وصف موجز للمقرر		يقدم هذا المقرر دراسة تفصيلية عن العلوم السلوكية و تشمل تعريف السلوك التنظيمي في الادارة بالإضافة إلى الجوانب الشخصية التي تؤثر على توجيه الموارد البشرية والنظريات المتعلقة بسلوكيات العاملين في العمل ونظريات الدوافع والحوافز والقيادة بالإضافة إلى فرق العمل وتشكيل الجماعات داخل المنظمات والآداب التي يجب ان يتحلى بها العاملين في منظمات قطاع الأعمال. يهدف المقرر إلى اكساب الطالب من التعامل مع المشاكل المتعلقة بالأفراد، وتشخيص المشاكل المحتملة التي قد تواجهها منظمة الصحة وتطبيق القرارات والتي تضمن جودة الخدمات وتدعيم انماط المشاركة الحديثة للعاملين في الادارة في ظل التغييرات العالمية والعولمة.
الكتب المقررة		عنوان الكتاب المقرر و ISBN: السلوك التنظيمي مدخل بناء المهارات موارد إضافية: السلوك التنظيمي في المنظمات يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
المدة الزمنية للمقرر		28 ساعة
طريقة التدريس		المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.
المستهدف		عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: أ) تعريف الطالب بمفهوم السلوك الانساني داخل المنظمات. ب) توضيح للطلاب محددات الشخصية، وتفسير الانماط والسميات المكونة لشخصية الانسان. ج) تعريف الطلاب بالفرق بين التعليم و التعلم والثقافة. د) تعريف الطالب بالصراعات التي تنشأ بين الجماعات داخل المنظمات.



طريقة التقييم	الامتحان النصفى 30% الامتحان النهائى 60% الواجبات المنزلية ، النشاطات الصفية 10% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسى
الأسبوع الأول	نظرة عامة على السلوك التنظيمى.
الأسبوع الثانى	الحوافز. الشخصية , التعلم , الادراك.
الأسبوع الثالث	التحفيز والأداء.
الأسبوع الرابع	تصميم الوظيفة .
الأسبوع الخامس	أساسات المجموعات داخل المنظمة.
الأسبوع السادس	أبعاد المجموعات فى السلوك التنظيمى.
الأسبوع السابع	السلوك داخل المجموعات.
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	القيادة.
الأسبوع العاشر	الأبعاد التنظيمية البيئة والأهداف.
الأسبوع الحادى عشر	التصميم التنظيمى.
الأسبوع الثانى عشر	صنع القرار والمعلومات .
الأسبوع الثالث عشر	تقييم الأداء.
الأسبوع الرابع عشر	المكافأة فى المنظمات.
الأسبوع الخامس عشر	التغيير والتطوير التنظيمى.
الأسبوع السادس عشر	الامتحان النهائى
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسى ، و فى الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة فى جميع جوانب حياتهم، بما فى ذلك المهارات التى تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي فى جميع المقرر.
التغيير والتعديل فى المقرر الدراسى	المعلومات الواردة فى مخطط هذه الدورة التدريبية صحيحة فى وقت النشر. تتم مراجعة محتوى الدورة بشكل مستمر من قبل أستاذ المادة وقسم العلوم للتأكد من ملاءمته للمتطلبات المهنية المتغيرة للتعليم والتسويق. سيحاول المعلم تقديم إشعار بالتغييرات للطلاب فى أقرب وقت ممكن. يمكن أيضاً مراجعة الجدول الزمنى

طرق البحث

1	اسم المقرر الدراسى	طرق البحث
2	رمز المقرر	HA308
3	نوع المقرر الدراسى: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقاً	الاحصاء الحيوي
7	البرنامج المقدم للدورة	قسم الادارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022



<p>يقدم هذا المقرر معرفة أسس البحث العلمي وأهدافه ومراحله وأنواع البحوث ومنهجيته، وتطبيق مراحل البحث بدءاً من تحديد مشكلة البحث وكتابة المراجع العلمية، وضع أهداف وفرضيات ومسلمات البحث، بناء أدوات البحث وتصميم مقاييس المعرفة والاتجاهات والميول والسلوكيات وجمع البيانات، تحليل البيانات باستعمال البرنامج الإحصائي SPSS، كتابة تقرير البحث، وضع الخلاصة والتوصيات القابلة للتطبيق.</p> <p>يهدف المقرر إلى تمكين الطلاب من صياغة مشكلة البحث، وتحديد أساليب المعاينة وأدوات جمع البيانات وتحليلها وتصميم البحث وإعداد الخطة البحثية وكتابة تقرير البحث وعرضه. ومعرفة القضايا والمشكلات المعاصرة في البحث العلمي في مجال الإارة الصحية وكيفية التعامل معها. واستخدام مختلف أدوات التحليل الإحصائي لبيانات البحث العلمي والأساليب الحسابية الخاصة بتحليل البيانات.</p>	<p>وصف موجز للمقرر</p>
<p>عنوان الكتاب المقرر و ISBN: أصول البحث العلمي ومنهجه موارد إضافية: يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقاً لتقدير استاذ المقرر.</p>	<p>الكتب المقررة</p>
<p>عند الانتهاء من هذه الدورة ، سيكون الطالب قد أثبت بشكل موثوق قدرته على:</p> <ul style="list-style-type: none"> التعرف على البحث العلمي و على تنمية إدراك الطالب وزيادة قدرته على الاستفادة من الموارد الطبيعية والبشرية ، وبما يوفر حياة حضارية كريمة للفرد والمجتمع . تعريف الطالب بأن البحث العلمي هو سلوك إجرائي واع يحدث بعمليات تخطيطية وتنفيذية متنوعة للحصول على النتائج المقصودة . ويتألف البحث العلمي من خطوات متعاقبة ومنظمة يكمل أحداها الآخر بشرط ان تكتمل وفق جدول زمني محدد ومنظم مسبقا . 	<p>المستهدف</p>
<p>28 ساعة</p>	<p>المدة الزمنية للمقرر</p>
<p>المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المخبرية.</p>	<p>طريقة التدريس</p>
<p>الامتحان النصفي : 30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح: 60%</p>	<p>طريقة التقييم</p>
<p>محتوى المقرر الدراسي</p>	<p>محتويات المقرر</p>
<p>خلفية عامه تتضمن مراحل تطور البحث العلم ومفهومه وأهميته.</p>	<p>الأسبوع الأول</p>
<p>المعرفة العلمية وأهدافها.</p>	<p>الأسبوع الثاني</p>
<p>خطوات البحث العلمي .</p>	<p>الأسبوع الثالث</p>
<p>خصائص ومهارات الباحث الجيد.</p>	<p>الأسبوع الرابع</p>
<p>اختيار موضوع البحث وإعداد وتصميم خطة البحث.</p>	<p>الأسبوع الخامس</p>
<p>عناصر خطة البحث ومحتوياتها.</p>	<p>الأسبوع السادس</p>
<p>أدوات جمع البيانات وتصميمها.</p>	<p>الأسبوع السابع</p>
<p>امتحان نصفي</p>	<p>الأسبوع الثامن</p>
<p>دراسة العينة ومجتمع الدراسة.</p>	<p>الأسبوع التاسع</p>
<p>الأساليب المستخدمة في تحليل البيانات.</p>	<p>الأسبوع العاشر</p>
<p>كتابة البحث - هيكل البحث والاقتراس والمراجع.</p>	<p>الأسبوع الحادي عشر</p>
<p>الجوانب الموضوعية والشكلية في البحث</p>	<p>الأسبوع الثاني عشر</p>
<p>خلفية عامه تتضمن مراحل تطور البحث العلم ومفهومه وأهميته.</p>	<p>الأسبوع الثالث عشر</p>
<p>المعرفة العلمية وأهدافها.</p>	<p>الأسبوع الرابع عشر</p>
<p>مراجعة</p>	<p>الأسبوع الخامس عشر</p>
<p>الامتحان النهائي</p>	<p>الأسبوع السادس عشر</p>
<p>من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.</p>	<p>الحضور والغياب</p>
<p>تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول</p>	<p>مهارات عامة</p>

الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	
المعلومات الواردة في مخطط هذه الدورة التدريبية صحيحة في وقت النشر. تتم مراجعة محتوى الدورة بشكل مستمر من قبل أستاذ المادة وقسم العلوم للتأكد من ملاءمته للمتطلبات المهنية المتغيرة للتعليم والتسويق. سيحاول المعلم تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضًا مراجعة الجدول الزمني.	التغيير والتعديل في المقرر الدراسي

علم الامراض

علم الامراض	اسم المقرر الدراسي	1
HA208	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
علم الاحياء العام	المتطلبات المطلوبة مسبقا	6
قسم الادارة الصحية	البرنامج المقدم للمقرر	7
اللغة الإنجليزية اللغة العربية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
يقدم هذا المقرر كافة المسميات المعروفة في علم الأمراض من أنواع المسببات والأعراض والعلامات المرضية وكيفية حدوث الأمراض ثم يتطرق لدراسة التغيرات التي تطرأ على تركيب الخلايا والأنسجة ذات العلاقة بالأمراض المختلفة التي تؤثر على جسم الإنسان. يهدف المقرر إلى تزويد الطلاب بصورة واضحة عن ممارسة مهنته الطبية للتعرف على العينات المرضية التي تشمل أعضاء الجسم المختلفة ومصابة بأمراض متنوعة حتى يلم الطالب في النهاية بالجانب التطبيقي.		وصف موجز للمقرر
عنوان الكتاب المقرر و ISBN: Kenneth Todar كتب إضافية Martinko, and Parker المقرر. عدد الساعات المطلوب لتدريس المقرر 28 ساعة		الكتب المقررة
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية. عند الانتهاء من هذه الدورة ، سيكون الطالب قد أثبت بشكل موثوق قدرته على		المدة الزمنية للمقرر
<ul style="list-style-type: none"> - المعرفة الأساسية لعلم الأمراض العام. - التعرف على العمليات المرضية الأساسية العامة، والية الإصابة بالامراض . - التعرف على التقنيات المستعملة في عملية تشخيص الأمراض وطرق الوقاية منها وإدارتها. - التعرف على انواع الامراض المختلفة ودراسة اسباب حدوثها وربطها بالازمات الصحية وكيفية الحد من حدوثها وفق الية علمية واضحة. - التعرف طرق تشخيص الانواع المختلفة من الامراض وطرق التفريق بين امراض المجتمع والامراض لعامة. 		طريقة التدريس
الامتحان النصفى 30% الامتحان النهائي 60% الواجبات المنزلية ، النشاطات الصفية 10% درجة النجاح: 50%		المستهدف
محتوى المقرر الدراسي		طريقة التقييم
Topics to be covered in the week		محتويات المقرر
<ul style="list-style-type: none"> • Introduction • -Infections disease 		الأسبوع الأول

<ul style="list-style-type: none"> • Topics to be covered in the week ○ Chronic disease and disorders 	الأسبوع الثاني
Topics to be covered in the week <ul style="list-style-type: none"> • General mechanisms of disease • Infection –inflammation –Immune injury -Host response repair – Neoplasia-Genetic-Metabolic deficiency 	الأسبوع الثالث
Topics to be covered in the week <ul style="list-style-type: none"> • Principle of disease occurrence 	الأسبوع الرابع
Topics to be covered in the week <ul style="list-style-type: none"> • Cardiovascular disease • Cerebrovascular disease. 	الأسبوع الخامس
Topics to be covered in the week <ul style="list-style-type: none"> • Cancers with highest fatality rates • Other cancers 	الأسبوع السادس
Topics to be covered in the week <ul style="list-style-type: none"> • Chronic respiratory, digestive and excretory disease 	الأسبوع السابع
الامتحان النصفى	
Topics that will be covered from the ninth week to the fourteenth week <ul style="list-style-type: none"> • Chronic skin and musculoskeletal disorders • Lab diagnostic in pathology • Sensory nervous disease . 	الأسبوع التاسع الى الأسبوع الرابع عشر
الامتحان النهائي	
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، وفي الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الأسبوع السادس عشر
<ul style="list-style-type: none"> • ان يكون الطالب قادراً على الابتكار وحل المشاكل. • -أن يكون الطالب قادراً على البحث في المراجع والدوريات. • أن يكون الطالب قادراً على العمل ضمن فريق • أن يكون الطالب قادراً استخدام وسائل التقنية الحديثة- 	الحضور والغياب
المعلومات الواردة في مخطط هذه الدورة التدريبية صحيحة في وقت النشر. تتم مراجعة محتوى الدورة بشكل مستمر من قبل أستاذ المادة وقسم العلوم للتأكد من ملاءمته للمتطلبات المهنية المتغيرة للتعليم والتسويق. سيحاول المعلم تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضاً مراجعة الجدول الزمني	مهارات عامة
التغيير والتعديل في المقرر الدراسي	الحضور والغياب



علم التشريح

1	اسم المقرر الدراسي	Anatomy - علم التشريح
2	رمز المقرر	HA201
3	نوع المقرر الدراسي: عام/تخصص/اختياري	Specialty
4	الوحدات المعتمدة	3
5	ساعات التعليم	4
6	المتطلبات المطلوبة مسبقاً	الاحياء العامة
7	البرنامج المقدم للدورة	الادارة الصحية
8	لغة التدريس	English
9	تاريخ الموافقة على المقرر	2022
وصف موجز للمقرر		مكن مقررات القسم الطالب من معرفة تركيب جسم الإنسان العيني، والمجهري، وفي صور الأشعة، وعلاقة ذلك بوظائف الأعضاء، وتطبيق ما يتعلمه على حالات سريرية.

الكتب المقررة	Snell Clinical Anatomy by Regions 9781609134464 ISBN:
المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر 42 ساعة من المتوقع أن يتم توفير ساعات إضافية من 2 إلى 4 من الواجبات المنزلية يومياً خلال هذا المقرر
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المختبرية.
المستهدف	يجب أن يكون الطالب قادرًا على: أ- وصف الهيكل العام للعظم وسرد وظائف أجزائه. ب- يميز بين العظام داخل الغشاء وداخل الغضروف ويشرح كيف تتطور هذه العظام وتنمو. ت- وصف كيفية تضمين النسيج الضام في بنية العضلات الهيكلية ث- تسمية أربعة أنواع من الخلايا العصبية ووصف وظائف كل منها. ج- التمييز بين الغدد الصماء والغدد الصماء. ح- تسمية أجهزة الجهاز البولي وتحديد وظائفها العامة. خ- تسمية أجزاء الجهاز التناسلي الذكري ووصف الوظائف العامة لكل جزء. د- قائمة الوظائف العامة للجهاز التنفسي.
طريقة التقييم	الامتحان النصفى 30% الامتحان النهائى 60% الواجبات المنزلية ، النشاطات الصفية 10% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	Introduction Cells & Tissues
الأسبوع الثاني	Integumentary System: Skin Integumentary System: Appendages
الأسبوع الثالث	Skeletal System: Bone Skeletal System: Axial
الأسبوع الرابع	Skeletal System: Appendicular Skeletal System: Joints
الأسبوع الخامس	Muscular System: Muscles Muscular System: H&N TAP
الأسبوع السادس	Muscular System: Extremities Muscular System: Cardiac
الأسبوع السابع	Blood & Vessels
الأسبوع الثامن	الامتحان النصفى
من الأسبوع التاسع الى الأسبوع الرابع عشر	Nervous System: Nerves Nervous System: CNS Nervous System: Peripheral Nervous System: Somatic/Autonomic Nervous System: Special Senses Endocrine System: Glands Lymphatic System Respiratory System Digestive System Urinary System Reproductive System/Embryology
الأسبوع السادس عشر	الامتحان النهائى
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	1- ان يكون الطالب قادرا على فهم المصطلحات التشريحية واستعمالها بصورة صحيحة 2 - ان يكون الطالب فهم التشريح السطحي والداخلي لجسم الإنسان. 3- ان يكون الطالب على معرفة الأهمية السريرية لعلم التشريح وعلاقتها بتشخيص الأمراض.

المعلومات الواردة في مخطط هذه الدورة التدريبية صحيحة في وقت النشر. تتم مراجعة محتوى الدورة بشكل مستمر من قبل أستاذ المادة وقسم العلوم للتأكد من ملاءمته للمتطلبات المهنية المتغيرة للتعليم والتسويق. سيحاول المعلم تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضًا مراجعة الجدول الزمني.	التغيير والتعديل في المقرر الدراسي
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علم وظائف الأعضاء

1	Course name	Physiology
2	Course Code	HA201
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Anatomy
7	Program offered the course	Health Administration
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Physiology is the study of how the human body works. It describes the chemistry and physics behind basic body functions, from how molecules behave in cells to how systems of organs work together. It helps us understand what happens in a healthy body in everyday life and what goes wrong when someone gets sick. Most of physiology depends on basic research studies carried out in a laboratory. Some physiologists study single proteins or cells, while others might do research on how cells interact to form tissues, organs, and systems within the body. While human anatomy is the study of the body's structures, physiology is the study of how those structures work. An imaging scan like an X-ray or ultrasound can show your anatomy, but doctors use other tests -- like urine and blood tests or electrocardiograms (EKGs) - to reveal details about your body's physiology. Doctors use physiology to learn more about many different organ systems.
Textbooks required for this Course:		Book Title & AITBS: Anatomy and Physiology Additional Resources: 1 st addition
Course Duration		56 hours
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.
Course Objectives:		The student should be able to: 1. Provide a course of study in mammalian, principally human, systems physiology, building on knowledge of basic physiological principles established in the Part IA Physiology of Organisms course; 2. Expand on some areas touched on in 1A Physiology of Organisms and to introduce new and more complex physiological functions; 3. Develop further practical biological skills introduced in 1A Physiology of Organisms;



	4. Prepare students for a number of Part II Natural Science courses, principally Physiology, Development & Neuroscience, but also Pharmacology, Pathology and Zoology, among others.
Course Assessments	Assignment 1: 30% Daily Assessments: 10% Final Exam: 60% 50 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	Introduction to Physiology
Session 2 (Week 2)	-Tissue-formation-repair
Session 3 (Week 3)	- Membranes & glands – functions
Session 4 (Week 4)	- Bones – Functions and movements of the axial and appendicular skeleton, bone healing
Session 5 (Week 5)	- Muscle movements, Muscle tone, Physiology of muscle contraction
Session 6 (Week 6)	- Functions of the brain, spinal cord, renal and spinal nerves
Session 7 (Week 7)	- Blood formation, composition, blood groups, blood coagulation
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	- Functions of respiratory organs
Session 10 (Week 10)	- Exchange of gases in tissues
Session 11 (Week 11)	- Metabolism of carbohydrates. Protein and fat
Session 12 (Week 12)	- Functions of kidneys, ureters, urinary bladder & urethra
Session 13 (Week 13)	- Functions of skin, eye, ear, nose, tongue.
Session 14 (Week 14)	- Functions of Pituitary, pineal body, thymus, thyroid, parathyroid, pancreas, Suprarenal, Placenta and ovaries & Testes
Session 15 (Week 15)	- Functions of female reproductive organs; Functions of the breast, female sexual cycle.
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arrive on time, return from breaks promptly, and remain until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. The timetable may also be revised.



نظم المعلومات والسجلات الطبية

1	اسم المقرر الدراسي	نظم المعلومات والسجلات الطبية
2	رمز المقرر	HA402
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	3
5	ساعات التعليم	4
6	المتطلبات المطلوبة مسبقاً	(HA 222) مبادئ الإدارة
7	البرنامج المقدم للدورة	الإدارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	<p>يعطي هذا المقرر إلى الطلاب بعد اجتياز مقرر مبادئ الإدارة (HA 222)، الذي يُدرّس لهم في الفصل الدراسي الثاني من كل عام.</p> <p>يقدم هذا المقرر دراسة تفصيلية عن أنظمة المعلومات والسجلات الطبية بالتعريف عنها وعن أنواعها وأهميتها ودورها الاستراتيجي في مراحل اتخاذ القرارات الإدارية والعلاقة بين نظم المعلومات وعناصر النظام الصحي ويجري التأكيد على خصوصية النظام الصحي، ويشمل بتعريف وصفي وعملي ل مبادئ البيانات و المعلومات بالإضافة إلى التحليل والتصميم والتنفيذ والتقييم للبيانات، وتشمل حوسبة الأنظمة الصحية والطرق والتقنيات من أجل معلوماتية فعالة وكيفية الاستفادة من التقنيات الإلكترونية لتكامل خدمات الرعاية الصحية في مستوياتها الثلاث واستعمالها في اتخاذ القرارات والتخطيط والمتابعة، وإعداد السجلات الطبية والأنظمة المعمول بها في السجل الطبي من حيث التصنيف والترقيم والفهرسة للأمراض وطرق التقنيات الحديثة من الحفظ والاسترجاع للسجل الطبي جري ويشرح كيفية تيسير الإجراءات على المرضى في كافة الأمور الصحية وقياس المشكلات الصحية البحث فيها.</p> <p>يهدف المقرر إلى استخدام الطالب الأجهزة والبرامج والاتصالات المستخدمة في أنظمة المعلومات وأنظمة المعلومات الصحية والأرشيف الإلكترونية وتقييم أجهزة نظام المعلومات وفهم الفرق بين السجلات الورقية والإلكترونية.</p>
الكتب المقررة	<p>عنوان الكتاب المقرر و ISBN:</p> <p>- إدارة المستشفيات منظور تطبيقي المجلد التاسع المؤلف د. محمد عبد المنعم شعيب</p> <p>- إدارة نظم معلومات لاستراتيجية- مجموعة من الاكاديميين في مجال العلوم الانسانية</p> <p>- تحت إشراف / د. السعيد مبروك ابراهيم .</p> <p>- يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقاً لتقدير استاذ المقرر.</p>
المدة الزمنية للمقرر	56 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المختبرية.
المستهدف	<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <ul style="list-style-type: none"> - ان يعرف الطالب استخدام الأجهزة والبرامج والاتصالات المستخدمة في أنظمة المعلومات وأنظمة المعلومات الصحية والأرشيف الإلكترونية - تقييم أجهزة نظام المعلومات - فهم الفرق بين السجلات الورقية والإلكترونية. - التعرف على توجهات تقنية المعلومات و التي من شأنها التأثير على المنظمات في المستقبل.
طريقة التقييم	<p>الامتحان النصفي : 30%</p> <p>الامتحان النهائي : 60%</p> <p>الواجبات المنزلية ، النشاطات الصفية : 10%</p> <p>درجة النجاح: 60%</p>
محتويات المقرر	محتوى المقرر الدراسي



الأُسبوع الأول	دراسة أنظمة المعلومات والسجلات الطبية عنها (التعريف - أنواعها) الاستراتيجية في مراحل اتخاذ القرارات الإدارية والعلاقة بين نظم المعلومات وعناصر النظام الصحي ويجري التأكيد على بالإضافة إلى التحليل والتصميم والتنفيذ والتقييم للبيانات
الأُسبوع الثاني	دراسة أنظمة المعلومات والسجلات الطبية (أهميتها - دورها)
الأُسبوع الثالث	النظام الصحي، تعريف وصفي وعملي ل مبادئ البيانات و المعلومات
الأُسبوع الرابع	السجلات الطبية والأنظمة المعمول بها في السجل الطبي
الأُسبوع الخامس	مفهوم وطبيعة نظم المعلومات والسجل الطبي
الأُسبوع السادس	تقنية المعلومات والدور الاستراتيجي لنظم المعلومات.
الأُسبوع السابع	نظام المعلومات الادارية.
الأُسبوع الثامن	الامتحان النصفى
الأُسبوع التاسع	. نظم دعم القرارات ونظم المعلومات والإدارة واتخاذ القرارات
الأُسبوع العاشر	. قواعد بيانات السجل الطبي , طبيعتها , خصائصها , نظم ادارتها
الأُسبوع الحادي عشر	مخازن البيانات والاتصالات اللاسلكية والشبكات والانترنت
الأُسبوع الثاني عشر	تحليل وتصميم نظام المعلومات الادارية.
الأُسبوع الثالث عشر	, مخازن البيانات والاتصالات اللاسلكية والشبكات والانترنت
الأُسبوع الرابع عشر	تدريب ميداني
الأُسبوع الخامس عشر	مراجعة
الأُسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي و صدور الموافقة من مجلس القسم العلمي.

مبادئ الإدارة

1	اسم المقرر الدراسي	مبادئ الإدارة
2	رمز المقرر	HA202
3	نوع المقرر الدراسي: عام/تخصص/اختياري	عام
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	لا يوجد
7	البرنامج المقدم للدورة	الادارة الصحية
8	لغة التدريس	اللغة العربية والانجليزية

2022	تاريخ الموافقة على المقرر	9
<p>التعريف بالمقرر الدراسي وما يتضمنه من مواضيع للتعريف بطبيعة المقرر : يقدم هذا المقرر دراسة أسس ومبادئ العلوم الإدارية الإدارية الصحية، حيث يتضمن مفهوم الإدارة، أهميتها، مجالاتها، تاريخ نشأتها، الفرق بين الإدارة الصحية والإدارة العامة، وعلاقتها مع العلوم الأخرى، بالإضافة الى النظريات الرئيسية في الإدارة، وشرح أهم وظائف الإدارة الصحية من تخطيط وأنواعه ومكوناته بالإضافة إلى عملية التنظيم الإداري الصحي من حيث المفهوم والأهداف وعناصره والفرق بين تفويض السلطة ونقلها ومحددات التفويض والتنسيق بين الوحدات التنظيمية، وأساسيات القيادة الإدارية ونظرياتها وأنماط القيادة وأنواعها، بالإضافة إلى أساسيات اتخاذ القرارات الإدارية، وأساسيات الاتصالات الإدارية، ومفهوم الرقابة وأنواعها، وأيضاً عن وظائف المنشأة المالية والإنتاج والتسويق وإدارة تنمية الموارد البشرية ووظيفة العلاقات العامة. يهدف المقرر إلى تعريف الطلاب بأسس ومبادئ الإدارة الصحية والتقنيات الإدارية المتعلقة بالوظائف التشغيلية الهامة التي تمارسها المنظمات والمؤسسات العامة المختلفة والصحية خصوصاً</p>	وصف موجز للمقرر	
<p>عنوان الكتاب المقرر و ISBN: الإدارة: المبادئ والمهارات وظائف ادارة الاعمال مبادئ ادارة الاعمال: الاساسيات والاتجاهات الحديثة يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقاً لتقدير استاذ المقرر.</p>	الكتب المقررة	
28 ساعة تدريسية	المدة الزمنية للمقرر	
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المختبرية.	طريقة التدريس	
<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: • فهم الطالب لمبادئ ادارة بصفة عامة . • تعريف الطالب بأهمية كل من عملية تحديد الاهداف واتخاذ القرارات • تعريف الطالب بمنظمات الاعمال وبيئتها الداخلية والخارجية • تعريف الطالب بوظائف -أنشطة- منظمات الاعمال الاساسية • بناء مهارة العمل الجماعي في تحليل المشاكل الادارية وايجاد الحلول لها • تطوير مهارة النقاش وإبداء الرأي في حل المشاكل الادارية.</p>	المستهدف	
<p>الامتحان النصفى: 30% الامتحان النهائي: 60% الواجبات المنزلية ، النشاطات الصفية: 10% درجة النجاح: 60%</p>	طريقة التقييم	
محتوى المقرر الدراسي	محتويات المقرر	
• تحديد الاهداف : المفهوم والأهمية.	الأسبوع الأول	
• علاقة الاهداف بالتخطيط والمستويات الإدارية.	الأسبوع الثاني	
• اتخاذ القرارات : المفهوم والأهمية	الأسبوع الثالث	
أنواع القرارات وخصائص كل منها	الأسبوع الرابع	
خطوات عملية اتخاذ القرارات	الأسبوع الخامس	
بيئة المنظمة (البيئة الداخلية، البيئة الخارجية)	الأسبوع السادس	
منظمات الأعمال التعريف ودوافع الانشاء	الأسبوع السابع	
أنواع وتصنيفات منظمات الاعمال	الأسبوع الثامن	
خطوات عملية اتخاذ القرارات	الأسبوع الثامن	
امتحان النصفى .	الأسبوع الثامن	
المسئولية الاجتماعية والأخلاقية لمنظمات الاعمال	الأسبوع التاسع	
وظائف منظمات الأعمال ووظيفة الإنتاج	الأسبوع العاشر	
وظيفة الشراء	الأسبوع الحادي عشر	
وظيفة التخزين	الأسبوع الثاني عشر	
وظيفة التسويق	الأسبوع الثالث عشر	
وظيفة التمويل	الأسبوع الرابع عشر	
مراجعة	الأسبوع الخامس عشر	
امتحان نهائي	الأسبوع السادس عشر	



الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي.

مبادئ الاقتصاد

1	اسم المقرر الدراسي	مبادئ الاقتصاد
2	رمز المقرر	HA204
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	لا يوجد
7	البرنامج المقدم للدورة	الادارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	<p>يعطي هذا المقرر الى الطلاب بعد اجتياز مقرر مبادئالاقتصاد (HA327)، الذي يُدرّس لهم في الفصل الدراسي الثالث من كل عام.</p> <p>يقدم هذا المقرر دراسة شاملة عن أسس اقتصاديات الصحة وآلياتها وأنواعها المختلفة والعوامل المؤثرة على التمويل الصحي وتمويل الرعاية الصحية ويتضمن ايضا عقود التأمين، وبشرح التحليل الاقتصادي والنظرية الاقتصادية في وصف الموارد وتحديد خصائصها وتصنيفاتها واستخداماتها بالإضافة إلى طرق تنميتها والمحافظة عليها والآثار الاقتصادية في سوق الخدمات الصحية.</p> <p>يهدف هذا المقرر إلى تمكين الطالب من تحليل قوى العرض والطلب في الخدمات الصحية والعوامل المؤثرة عليها، والمعرفة الاقتصادية عن الصحة والحياة والأسواق الاقتصادية وآلياتها والتوازنات الاقتصادية الخاصة بها في سوق الخدمات الصحية، والتعرف على السلع الصحية وأسباب فشل السوق وعد مكفاءة سوق هذه السلع وكذلك عقود التأمين. وكيفية التمويل الصحي وتمويل الرعاية الصحية والعوامل التي تؤثر على تكاليف الرعاية الصحية في المجتمع، وقياس المنافع والتكاليف المترتبة على الخدمات الصحية وتحليل المنافع والتكاليف وأساليب التقييم المبنية على التفضيل. واجراء معادلات توازن الصحة والاستدامة الاقتصادية في القطاع الصحي.</p>
الكتب المقررة	<p>عنوان الكتاب المقرر و: ISBN اقتصاديات الصحة - مجموعة مؤلفين- مدخل الى الاقتصاد الصحي - لورنا جينيس - فرجينيا وايز مان - ترجمة مجموعة مؤلفين. طباعة المركز العربي لتأليف وترجمة العلوم الصحية.- الكويت.</p> <p>موارد إضافية:</p> <p>يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر..</p>
المدة الزمنية للمقرر	عدد الساعات المطلوب لتدريس المقرر اسبوعيا ساعتين وبمجموع الساعات الدراسية في الدورة(28) ساعة.

طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المختبرية.
المستهدف	<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <ul style="list-style-type: none"> • ان يكون يتعرف الطالب على المشكلة الاقتصادية وخاصة ندرة الموارد الاقتصادية • ان يكون الطالب ملماً بأدوات التحليل الجزئي مثل الطلب والعرض و المرونات وأسلوب المنفعة • ان يكون الطالب مستوعباً لنظرية الانتاج والتكاليف • ان يستوعب الطالب نظريات الاسواق المختلفة مثل سوق (المنافسة والاحتكار) • تعريف الطالب ببعض مفاهيم الاقتصاد الجزئي والاقتصاد الكلي. • تعريف الطالب بالقطاع المصرفي وآلية عمل المؤسسات المالية.
طريقة التقييم	<p>الامتحان النصفي 30% الامتحان النهائي 60% الواجبات المنزلية ، النشاطات الصفية 10 درجة النجاح: 60 %</p>
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	المصطلحات الاساسية في الاقتصاد
الأسبوع الثاني	نظرية الطلب -
الأسبوع الثالث	نظرية العرض
الأسبوع الرابع	مرونة الطلب والعرض
الأسبوع الخامس	نظرية الطلب والمنفعة -
الأسبوع السادس	منحنيات السواء
الأسبوع السابع	نظرية الانتاج -
الأسبوع الثامن	نظرية التكاليف
الأسبوع التاسع	سوق المنافسة الكاملة-سوق الاحتكار
الأسبوع العاشر	مفاهيم في الاقتصاد الكلي
الأسبوع الحادي عشر	مفاهيم في الاقتصاد الجزئي
الأسبوع الثاني عشر	التجارة الدولية
الأسبوع الثالث عشر	النقود والمؤسسات الدولية
الأسبوع الرابع عشر	مراجعة
الأسبوع الخامس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضاً مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.

مبادئ المحاسبة

اسم المقرر الدراسي	1	مبادئ المحاسبة
رمز المقرر	2	HA205



3	نوع المقرر الدراسي: عام/ تخصص/ اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقاً	لا توجد
7	البرنامج المقدم للدورة	قسم الادارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	يقدم هذا المقرر دراسة شاملة عن المحاسبة وتعريفها ونشأتها، وتطورها، والوحدة الاقتصادية وعلاقتها بالدورة المحاسبية، نظام القيد المزدوج، تحليل العمليات المالية من خلال أثبات القيود المحاسبية في دفتر اليومية، الترحيل والترصيد في دفتر الأستاذ، إعداد ميزان المراجعة، وإعداد القوائم المالية، شرح المبادئ والفرصيات المحاسبية، والقياس المحاسبي للذمم المدينة والمخزون، وقيود وحسابات الاقفال في نهاية الدورة المالية.
الكتب المقررة	يهدف هذا المقرر إلى تمكين الطالب من تسوية حسابات النقدية والبنك وإعداد مطابقة كشف البنك، ومعالجة حسابات المدينين ومخصصها، ومعالجة جرد المخزون السلعي وأنظمتها، معالجة الاستثمارات في الأوراق المالية، معالجة الأوراق التجارية، التسويات الجردية، استخدام أوراق العمل وأعداد التقارير المالية والحسابات الختامية بعد التسويات الجردية وأوراق العمل متضمنة ميزان المراجعة المعدل، الأخطاء المحاسبية ومعالجاتها، الأصول الثابتة وطرق إهلاكها، والتعرف على المصاريف الايرادية والرأسمالية
عنوان الكتاب المقرر و ISBN:	مبادئ المحاسبة المالية- مبادئ علم المحاسبة الحديثة (الجزء الأول) يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقاً لتقدير استاذ المقرر.
المدة الزمنية للمقرر	28 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتياً، المشاركة النشطة، التجارب المختبرية.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: • التعرف على ما هو علم المحاسبة وما الفروض المبادئ المحاسبية التي يستند عليها هذا العلم . • تمكين الطالب من إثبات القيود اليومية وترحيلها وترصيدها وإعداد ميزان المراجعة . • يفهم الطالب كيفية إجراء المعالجات المحاسبية الخاصة بالمبيعات والمشتريات والخاصة بالخصم. • تمكين الطالب من إعداد الحسابات الختامية والقوائم المالية مرتبة ترتيباً فنياً. • يدرك الطالب طرق تصحيح الأخطاء إن وجدت
طريقة التقييم	الامتحان النصفى : 30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح : 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	مدخل إلى علم المحاسبة ومفهومها
الأسبوع الثاني	الدورة المحاسبية بانواعها
الأسبوع الثالث	المعالجة المحاسبية للعمليات التمويلية والرأسمالية
الأسبوع الرابع	المعالجة المحاسبية لعمليات الشراء
الأسبوع الخامس	المعالجة المحاسبية لعمليات البيع
الأسبوع السادس	المعالجة المحاسبية لعمليات الخصم
الأسبوع السابع	دراسة القوائم المالية
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	الحسابات الختامية
الأسبوع العاشر	الاطفاء المحاسبية و طرق تصحيح الأخطاء المحاسبية



الأُسبوع الحادي عشر	جرد المصروفات والارادات
الأُسبوع الثاني عشر	جرد المخزون السلعي
الأُسبوع الثالث عشر	جرد الأوراق المالية والتجارية
الأُسبوع الرابع عشر	جرد الخزينة والمصروف
الأُسبوع الخامس عشر	فائمه التسوسية واعداد القوائم المالية
الأُسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.

نظم المعلومات الادارية

1	اسم المقرر الدراسي	نظم المعلومات الادارية
2	رمز المقرر	HA209
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	لا يوجد
7	البرنامج المقدم للدورة	قسم الادارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022
	وصف موجز للمقرر	يقدم هذا المقرر دراسة عن نظم المعلومات الإدارية في المؤسسات، والتعريف بالمفاهيم الأساسية لنظم المعلومات الإدارية وطبيعتها ووظائفها وأهميتها في مراحل اتخاذ القرارات الإدارية والتحليل والتصميم والتنفيذ والتقييم والتطبيقات للمؤسسات الصحية، وقواعد تخزين البيانات وكيفية بنائها، بالإضافة إلى دراسة الشبكات والاتصالات وأمن المعلومات ودورها في إدارة وتطوير وجودة نظم المعلومات الإدارية. يهدف هذا المقرر إلى تمكين الطالب من القيام بإدارة المعلومات الإدارية وتنظيمها والتعرف على الأجزاء المكونة لها واتخاذ القرارات الإدارية والتخطيط للتطبيق لنظم المعلومات الإدارية، وحل إشكالات الأعمال من خلال استخدام الاتصالات والشبكات وأمن المعلومات وإدارة المعالجة التحليلية الفورية.
	الكتب المقررة	عنوان الكتاب المقرر و ISBN: التحليل والتصميم والنمذجة الحديثة لنظم المعلومات



موارد إضافية: نظم المعلومات الإدارية يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.	
المدة الزمنية للمقرر	28 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: - فهم كيفية استخدام المنظمات لنظم المعلومات كميزة تنافسية. - التعرف على مفاهيم ندمجة البيانات (مخططات الكينونات - العلاقات) المستخدمة في تطوير قواعد البيانات. - يصنف المفاهيم المتعلقة بالحاسوب، المادي، البرامج، الاتصالات، قواعد البيانات، تطوير النظم. - التعرف على توجهات تقنية المعلومات و التي من شأنها التأثير على المنظمات في المستقبل.
طريقة التقييم	الامتحان النصفى 30% الامتحان النهائي 60% الواجبات المنزلية ، النشاطات الصفية 10% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	مفهوم وطبيعة نظم المعلومات الإدارية.
الأسبوع الثاني	نظم الاتصالات ونظرية المعلومات.
الأسبوع الثالث	العوامل التي تبرر الحاجة للمعلومات وثورة نظم المعلومات.
الأسبوع الرابع	تقنية المعلومات والدور الاستراتيجي لنظم المعلومات.
الأسبوع الخامس	نظام المعلومات الإدارية.
الأسبوع السادس	نظم دعم القرارات ونظم المعلومات والإدارة واتخاذ القرارات
الأسبوع السابع	دور تقنية المعلومات في تغيير العملية الإدارية
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	الوقت , الحجم , والأنواع في عالم الحواسيب.
الأسبوع العاشر	نظام التقييم وبرامج تشغيل الحاسوب.
الأسبوع الحادي عشر	الأجيال المختلفة للغات البرمجة وقواعد ومخازن البيانات.
الأسبوع الثاني عشر	قواعد البيانات , طبيعتها , خصائصها , نظم ادارتها ,
الأسبوع الثالث عشر	مخازن البيانات والاتصالات اللاسلكية والشبكات والانترنت.
الأسبوع الرابع عشر	التجارة الالكترونية وتقنية الأعمال الالكترونية
الأسبوع الخامس عشر	تحليل وتصميم نظام المعلومات.
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي



إدارة الازمات الصحية

1	اسم المقرر الدراسي	إدارة الازمات الصحية
2	رمز المقرر	HA 401
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	إدارة المستشفيات والخدمات الصحية
7	البرنامج المقدم للدورة	قسم الادارة الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	<p>يقدم هذا المقرر دراسة شاملة عن المخاطر الصحية والتأمين، والذي يشمل تقييم المخاطر البيئية والأمنية وغيرها، ويتضمن دراسة نماذج احتمال بايزي، وتحليل المخاطر الاحتمالية، وتحليل السبب الجذري وتحليل وضع الفشل، وكذلك أنواع التأمين ومراحله ومنهجيته وأهدافه وتطبيقه وتقدير تغطيته للمخاطر وحساب الأقساط ومبادئ إعادة التأمين والمخاطر الاستثنائية.</p> <p>يهدف المقرر إلى تمكين الطلاب من تحليل وتفسير النماذج المسببة للمخاطر واختبار دقة هذه النماذج ضد تقارير الإصابة الموجودة وتحليل المخاطر النوعية والكمية، بالإضافة إلى تحليل وتقييم الصحة وموثوقية تحليل المخاطر، والطرق إعادة التأمين التي يعملونها في السياسة العامة بشأن القضايا المتعلقة بالتعويض عن المخاطر للأفراد والمؤسسات الصحية.</p>
الكتب المقررة	<p>عنوان الكتاب المقرر و ISBN: إدارة المخاطر الصحية موارد إضافية: كتاب تقييم الخدمات الصحية يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.</p>
المدة الزمنية للمقرر	28 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.
المستهدف	<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <ul style="list-style-type: none"> - أهداف المقرر: - يغطي هذا المقرر المعارف والمهارات المرتبطة بإدارة الازمات، حيث يتم بيان مفهوم الازمات وأسبابها وأنواعها، ومراحل الازمة ومراحل إدارتها، ومتطلبات إدارتها، والأسلوب العلمي في التعامل معها، والنصائح المقدمة في هذا المجال.. - يهدف المقرر إلى تكوين المهارات والكفاءات المرتبطة بإدارة الازمات وكيفية تطبيقها على أرض الواقع
طريقة التقييم	<p>الامتحان النصفي: 30% الامتحان النهائي: 60% الواجبات المنزلية، النشاطات الصفية: 10% درجة النجاح: 60%</p>
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	طبيعة الخطر ومكوناته والمفاهيم ذات العلاقة.
الأسبوع الثاني	تصنيف المخاطر.
الأسبوع الثالث	ادارة المخاطر .
الأسبوع الرابع	التأمين الصحي، مفهومه طبيعته، وأنواعه وكيفية استخدامه للحد من المخاطر.

الأسبوع الخامس	هيئات التأمين الصحي .
الأسبوع السادس	عقد التأمين الصحي , تعريفه وعناصره وشروطه القانونية.
الأسبوع السابع	خصائص عقود التأمين الصحي .
الأسبوع الثامن	امتحان نصفى
الأسبوع التاسع	المبادئ القانونية لعقود التأمين الصحي .
الأسبوع العاشر	الاكتتاب في التأمين الصحي .
الأسبوع الحادي عشر	التسعير في عقود التأمين الصحي .
الأسبوع الثاني عشر	المطالبات في التأمين الصحي
الأسبوع الثالث عشر	اعادة التأمين الصحي .
الأسبوع الرابع عشر	طبيعة الخطر ومكوناته والمفاهيم ذات العلاقة.
الأسبوع الخامس عشر	تصنيف المخاطر. ادارة المخاطر .
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالغياب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي.

Health Administration

1	Course name	Health Administration
2	Course Code	HA403
3	Course type: /general/specialty/optional	Optional
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	-
7	Program offered the course	Theory
8	Instruction Language	English
9	Date of course approval	2017
تعريف الطالب بالادارة الصحية ونشاتها والانظمة الادارية الصحية في العالم ووطنها بالعلوم الصحية العملية والنظرية		وصف موجز للمقرر
عنوان الكتاب المقرر و ISBN: إدارة الصحة العامة: مبادئ الإدارة القائمة على السكان ، الطبعة الثانية ؛ نوفيك لام ، موروسي ، ميس جي ؛ جونز وبارتليت للنشر. 2007 ؛ ردمك -- - 13 : 9780763738426 بوشبيندر، إسبي، وشانكس، إناتش (2012). مقدمة في إدارة الرعاية الصحية. جونز وبارتليت ، الناشر ، الإصدار الثاني يمكن استخدام كتب اضافيه وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.		الكتب المقررة



عدد الساعات المطلوب لتدريس المقرر اربع ساعتين اسبوعيا بمجموع طيلة الدورة (28) ساعة	المدة الزمنية للمقرر
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، الزيارات الميدانية.	طريقة التدريس
<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <ul style="list-style-type: none"> ▪ فهم الادارة الصحية وإعطاء الطالب فكرة عن البرامج العالمية الخاصة بها. ▪ تحديد لماذا الاهتمام بهذه المادة. ▪ التعرف علي المشكلات الإدارية الصحية الشائعة بينها. ▪ تحديد المشكلات الإدارية و تأثيرها علي الأنظمة الصحية. ▪ كتابة مجموعة من التقارير عن الوضع الإداري بالدولة ومحاولة تعريف الطالب علي طريقة وضع الحلول لها. ▪ تطوير المنهج الدراسي وفق التطور العلمي في هذا المجال. 	المستهدف
<ul style="list-style-type: none"> • الامتحان النصفى 30% • الامتحان النهائي 60% • الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية 10% • درجة النجاح: 60.. 	طريقة التقييم
محتوى المقرر الدراسي	محتويات المقرر
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الأول
<ul style="list-style-type: none"> • مقدمة والتعريف بالمقرر. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثاني
<p>نظرية النظم:</p> <ul style="list-style-type: none"> ▪ النظم الصحية. ▪ أمثلة عن الأنظمة الصحية. ▪ المستشفى كنظام مفتوح 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثالث
<ul style="list-style-type: none"> ▪ نظرة عامة على الإدارة الصحية.. 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الرابع
<p>وظائف الادارة الصحية:</p> <ul style="list-style-type: none"> ▪ التخطيط الصحي. ▪ التنظيم الصحي. ▪ التوجيه و القيادة الإدارية. ▪ الضبط و الرقابة الإدارية. ▪ تقييم الأداء 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الخامس
<ul style="list-style-type: none"> ▪ إدارة فرق العمل الصحية والعمل ضمن فرق ومهني الصحة العامة 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السادس
<ul style="list-style-type: none"> • السياسة الصحية. • الأدلة و الاجراءات الإدارية اللببية 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع السابع
<ul style="list-style-type: none"> • تصميم البرامج الصحية وتقييمها 	
الامتحان النصفى	الأسبوع الثامن
المواضيع التي سيتم تغطيتها في الأسبوع.	الأسبوع التاسع
<ul style="list-style-type: none"> ▪ تمويل الرعاية الصحية والخدمات الصحية والتأمين الصحي 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع العاشر
<ul style="list-style-type: none"> ▪ إدارة للموارد البشرية الصحية 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الحادب عشر
<ul style="list-style-type: none"> ▪ إدارة المعلومات و المؤشرات الصحية. ▪ السجلات الطبية. ▪ الأرشفة الالكترونية الطبية 	
المواضيع التي سيتم تغطيتها في الأسبوع	الأسبوع الثاني عشر



إدارة تكنولوجيا المعلومات الصحية	
المواضيع التي سيتم تغطيتها في الأسبوع أخلاقيات الرعاية الصحية التعامل مع المرضى	الأسبوع الثالث عشر
المواضيع التي سيتم تغطيتها في الأسبوع التسويق الصحي	الأسبوع الرابع عشر
الامتحان النهائي	الأسبوع السادس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيجادل الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدر الموافقة من مجلس القسم العلمي.	التغيير والتعديل في المقرر الدراسي

التسويق الصحي

التسويق الصحي	اسم المقرر الدراسي	1
HA307	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
مبادئ التسويق	المتطلبات المطلوبة مسبقا	6
قسم الادارة الصحية	البرنامج المقدم للدورة	7
اللغة العربية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
<p>يعطي هذا المقرر الى الطلاب بعد اجتياز مقرر مبادئ التسويق (HA427)، الذي يُدرّس لهم في الفصل الدراسي الرابع من كل عام.</p> <p>يقدم هذا المقرر دراسة عندور التسويق ونظم وأبعاد النشاط التسويق بالصحة وأهميته وأنواعه ودوره في تنظيم إدارة التسويق وآليات تخطيط التسويق للمستشفيات والخدمات الصحية واهم المنتجات التي تقدمها ومراحل التسويق من الترويج لها وتسعيرها وتوزيعها، وتنظيم ادارة التسويق وهيكلتها التنظيمية في المستشفيات والخدمات الصحية وخصائصها وطرق تطويرها، ويتضمن شرح القضايا المعاصرة في مجال تسويق المستشفيات والخدمات الصحية واختيار السوق لتلبية احتياجات العملاء (العملاء والمواطنين والمرضى) مع تلبية متطلبات الممارس والمؤسسة، وشرح كيف يتخذ المستهلكون والشركات قراراتهم المتعلقة بالرعاية الصحية، بالإضافة الى وصف صناعة وتسويق الخدمات والأنظمة والنماذج وأساليب قياس مفهوم جودة الخدمات وتسعيرها وترويجها وتوزيعها واساليب التسويق الدولي.</p>		وصف موجز للمقرر



يهدف هذا المقرر من تمكين الطالب من وصف وتحليل وجمع المعلومات التسويقية وتنفيذ خطط التسويق خاصة بهم، وكيفية تقسيم المنتجات الخدمية واستهدافها ووضعها بشكل سليم داخل المؤسسات الصحية والتعرف على احتياجات السوق والعملاء، وتطوير منتجات وخدمات عالية الجودة، وتسعيرها بشكل صحيح، والإبلاغ عن عروضهم، والتواصل معهم، وجعلها في متناولهم.	
عنوان الكتاب المقرر و ISBN: التسويق الصحي /د.محمد تالصيرفي2021م يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.	الكتب المقررة
28 ساعة	المدة الزمنية للمقرر
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:	طريقة التدريس
أ) تعريف الطلاب بطبيعة وأهمية وظيفة التسويق ب) تعريف الطالب بالمزيج التسويقي وعناصره (المنتج- التسعير- التوزيع- الترويج). ج) تعريف الطلاب بدوافع الشراء للمستهلك د) تعريف الطلاب بقنوات ومنافذ التوزيع . هـ) تعريف الطالب بطبيعة وأهمية التسويق الصحي . و) تسويق المنتجات والخدمات الصحية . ز) تسويق الارشادات الصحية .	المستهدف
الامتحان النصفى :30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح : 60%	طريقة التقييم
محتوى المقرر الدراسي	التوزيع الزمني
تعريف التسويق , والمفاهيم والمصطلحات التسويقية.	الأسبوع الأول
أهمية التسويق وتطوره عبر المراحل المختلفة .	الأسبوع الثاني
إدارة التسويق – تنظيمها والهدف منها,	الأسبوع الثالث
التسويق ونظرية النظم.	الأسبوع الرابع
البيئة التسويقية.	الأسبوع الخامس
السلع وأنواعها , وخصائص السوق الصناعي والإنتاجي والصحي .	الأسبوع السادس
الخدمات الصحية تعريفها, خصائصها, وكيفية تسويق الخدمات الصحية	الأسبوع السابع
امتحان نصفى	الأسبوع الثامن
سلوك المستهلك ودوافع الشراء	الأسبوع التاسع
تجزئة الأسواق	الأسبوع العاشر
. المزيج التسويقي وعناصره- المنتج- التسعير- التوزيع- الترويج. للمنتجات والخدمات الصحية	الأسبوع الحادي عشر
قنوات ومنافذ التوزيع	الأسبوع الثاني عشر
استراتيجيات التسعير الصحي .	الأسبوع الثالث عشر
المصطلحات التسويقية.	الأسبوع الرابع عشر
مراجعة	الأسبوع الخامس عشر
الامتحان النهائي	الأسبوع السادس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة



**التغيير والتعديل في
المقرر الدراسي**

المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.



19- إدارة المستشفيات والخدمات الصحية:

1	اسم المقرر الدراسي	إدارة المستشفيات والخدمات الصحية
2	رمز المقرر	HA301
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	مبادئ الإدارة
7	البرنامج المقدم للدورة	قسم الإدارو الصحية
8	لغة التدريس	اللغة العربية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	يعطي هذا المقرر الى الطلاب بعد اجتياز مقرر مبادئ الإدارة (HA 222)، الذي يُدرّس لهم في الفصل الدراسي الثاني من كل عام. يقدم هذا المقرر دراسة عن إدارة المستشفيات والخدمات الصحية، ويتضمن شرحا عن التخطيط والهيكل التنظيمي والإدارة المالية والبشرية وإدارة الموارد في المستشفيات والخدمات الصحية. يهدف المقرر إلى تمكين الطالب من إدارة علاقات المستشفيات والخدمات الصحية وإدارة علاقات المرضى في المستشفيات واجراء عمليات التدقيق الطبي واعتمادات المستشفيات من خلال حلال مشكلات وصنع القرارات، والتعامل مع كافة القضايا المتعلقة وإعداد التقارير.
الكتب المقررة	عنوان الكتاب المقرر و ISBN: إدارة الخدمات الصحية يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
المدة الزمنية للمقرر	28 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: • الاستيعاب الكامل والدقيق لعناصر العملية الإدارية • تطبيق عناصر العملية الإدارية على المنظمات الصحية • تنمية المهارات اللازمة لاستخدام عناصر العملية الإدارية في حل مشكلات المنظمات الصحية. • كتابة تقارير حول وضع المستشفيات والخدمات الصحية
طريقة التقييم	الامتحان النصفى 30% الامتحان النهائي 60% الواجبات المنزلية، النشاطات الصفية 10% درجة النجاح: 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	إدارة المستشفيات: المفهوم والأهمية والخصوصية
الأسبوع الثاني	نظريات الإدارة الحديث (نشأة الإدارة الصحية وامستشفيات نضره تاريخية).
الأسبوع الثالث	العملية الإدارية في المستشفيات المنظمات الصحية
الأسبوع الرابع	خصائص المدير الصحي وانواع المدراء والعملية الاداريه
الأسبوع الخامس	نظام الرعاية الصحية التعريف والمكونات
الأسبوع السادس	التخطيط الإستراتيجي في المستشفيات والمنظمة الصحية الأهمية والمفهوم والخصائص
الأسبوع السابع	نظريات التنظيم وتصميم الهيكل التنظيمي للمنظمة الصحية
الأسبوع الثامن	امتحان النصفى
الأسبوع التاسع	مناقشة الخصائص والنظريات للمنظمات الصحية
الأسبوع العاشر	تصميم الهيكل وتكوين الدوائر والهيكل المركب وعلاقات السلطة وتفويضها



الأسبوع الحادي عشر	الرقابة في المنظمات الصحية
الأسبوع الثاني عشر	المفهوم و الأهمية ورقابة جودة الرعاية الصحية
الأسبوع الثالث عشر	الاتصال في المنظمات الصحية أسباب الضعف والمبادئ العامة والتحسين
الأسبوع الرابع عشر	رقابة جودة خدمات الأطباء
الأسبوع الخامس عشر	مراجعة
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي..

الاحياء الدقيقة

1	اسم المقرر الدراسي	الاحياء الدقيقة
2	رمز المقرر	HA206
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	الاحياء العامة
7	البرنامج المقدم للدورة	قسم الادارة الصحية
8	لغة التدريس	اللغة الإنجليزية
9	تاريخ الموافقة على المقرر	2022
وصف موجز للمقرر		يقدم هذا المقرر أساسيات علم الأحياء الدقيقة، حيث تشمل الدراسة طرق تصنيف مجموعات الأحياء الدقيقة المختلفة مع الوصف الشكلي والتركيبى لكل مجموعة وطرق دراسة وظائفها، كما تشمل مقدمة موجزة عن الأمراض المعدية من حيث أنواع الأحياء الدقيقة المسببة لها والتحكم في الإصابات التي تسببها الأحياء الدقيقة. يهدف المقرر إلى تزويد الطلاب بصورة واضحة عن مبادئ علم الأحياء الدقيقة والمجموعات المختلفة وأهميتها. وتدريب الطلاب على تجهيز الاوساط الغذائية وتنمية الأحياء الدقيقة وتصنيفها.
الكتب المقررة		عنوان الكتاب المقرر و ISBN: Medical Microbiology موارد إضافية: Medical Microbiology; a Guide to Microbial Infections: Pathogenesis, Immunity, Laboratory Diagnosis and Control
المدة الزمنية للمقرر		عدد الساعات المطلوب لتدريس المقرر 4ساعات أسبوعيا لمدة 14 الأسبوع
طريقة التدريس		المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.



<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <ol style="list-style-type: none"> 1- التعرف على الأحياء الدقيقة المسببة للأمراض وكيفية عزلها وتنميتها بشكل سليم. 2- التعرف على أنواع البكتيريا التي تصيب مختلف أعضاء الجسم ونوع العينات المناسبة وطرق جمعها. 3- التعرف على أنواع الميكروبات الممرضة ورصد نتائجها وتفسيرها في ضوء اختبارات الجودة السريرية. 4- التعرف على الأوساط المزرعية المناسبة لنمو البكتيريا والفحوصات المخبرية اللازمة لتشخيصها وكيفية تفسير النتائج والعلاج المناسب لكل حالة. 	<p>المستهدف</p>
<p>الامتحان النصفى 30% الامتحان النهائي العملي 20% الامتحان النهائي 40% الواجبات المنزلية ، النشاطات الصفية 10% 60% درجة النجاح</p>	<p>طريقة التقييم</p>
<p>محتوى المقرر الدراسي</p>	<p>محتويات المقرر</p>
<ul style="list-style-type: none"> • Introduction to clinical microbiology, infectious organisms, normal flora: friend and foe 	<p>الأسبوع الأول</p>
<ul style="list-style-type: none"> • General diagnostic principles and considerations (aims of clinical microbiology 	<p>الأسبوع الثاني</p>
<ul style="list-style-type: none"> • specimen collection/transport/processing 	<p>الأسبوع الثالث</p>
<ul style="list-style-type: none"> • culture and non-culture techniques 	<p>الأسبوع الرابع</p>
<ul style="list-style-type: none"> • methods of bacterial identification and sensitivity testing 	<p>الأسبوع الخامس</p>
<ul style="list-style-type: none"> • Upper respiratory tract infection 	<p>الأسبوع السادس</p>
<ul style="list-style-type: none"> • Lower respiratory tract infection (pneumonia, tuberculosis) 	<p>الأسبوع السابع</p>
<p>الامتحان النصفى</p>	<p>الأسبوع الثامن</p>
<ul style="list-style-type: none"> • Urinary tract infection 	<p>الأسبوع التاسع</p>
<ul style="list-style-type: none"> • Sexually transmitted infection (gonorrhoea, chlamydia, syphilis) 	<p>الأسبوع العاشر</p>
<ul style="list-style-type: none"> • Antimicrobial Agents 	<p>الأسبوع الحادي عشر</p>
<ul style="list-style-type: none"> • General Clinical Microbiology Laboratory Methods 	<p>الأسبوع الثاني عشر</p>
<ul style="list-style-type: none"> • Gastrointestinal infection (Clostridium difficile) 	<p>الأسبوع الثالث عشر</p>
<p>مراجعة</p>	<p>الأسبوع الرابع عشر</p>
<p>الامتحان النهائي</p>	<p>الأسبوع الخامس عشر</p>
<p>من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.</p>	<p>الحضور والغياب</p>
<p>كيفية التواصل باستخدام اللغة العلمية المناسبة لتقارير المختبرات السريرية. إجراء الفحوصات المخبرية للتحري عن العوامل المضادة للمكروبات. العمل بشكل تعاون جماعي.</p>	<p>مهارات عامة</p>
<p>. المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.</p>	<p>التغيير والتعديل في المقرر الدراسي</p>



علم الأوبئة

علم الاوبئة	اسم المقرر الدراسي	1
HA206	رمز المقرر	2
تخصص	نوع المقرر الدراسي: عام/تخصص/اختياري	3
3	الوحدات المعتمدة	4
4	ساعات التعليم	5
علم الامراض (HA 422)	المتطلبات المطلوبة مسبقا	6
قسم الادارة الصحية	البرنامج المقدم للدورة	7
اللغة العربية واللغة الانجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9

Brief Description:	Epidemiology we are divided in to two. The aim of this course is to give students grounding in the basic concepts of epidemiology. Students will gain knowledge about: measuring and interpreting patterns of disease occurrence; routine sources of data, their strengths and limitations; study designs used in epidemiology and when to apply them; epidemiological models of causation; and will begin to critically appraise epidemiological literature with reference to issues of study design and interpretation of results
Textbooks required for this Course:	<p>1. Aschengrau A & Seage GR. Essentials of Epidemiology in Public Health. 3 rd Edition (2014).</p> <p>2. Additional required readings will be assigned to supplement the main textbook or as part of various homework assignments; a list of these is provided on the next page. Readings that are published, journal articles can be accessed via the NYU Library's journal access that is located under the Research tab of NYUHome. I also reserve the right to add readings during the course of the semester as appropriate.</p> <p>Additional resources:</p> <p>1. A good online text: Principles of Epidemiology: An Introduction to Applied Epidemiology and Biostatistics. Second Edition. It is available at: http://www.phppo.cdc.gov/PHTN/catalog/pdf/Epi_Course.pdf</p> <p>2. Epidemiology, the Internet and Global Health. An online compilation of hundreds of lectures on a wide variety of topics; I would recommend this site to anyone interested in further reading on a specific subject area. The site can be accessed at http://www.pitt.edu/~super1/</p>
Course Duration	28 hours
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>Upon completion of the course, the student will have reliably demonstrated the ability to:</p> <ol style="list-style-type: none"> 1. Explain the role of epidemiology in public health.



	<ol style="list-style-type: none"> 2. .2Describe and calculate the epidemiological measures used to identify and estimate health problems in and across specific population groups. 3. .3Describe the set of epidemiological study designs used to examine the health status of the population and be able to assess the strengths and limitations of each. 4. Define and describe the effect of bias and confusion in epidemiological studies 5. Understand the concepts of screening and testing in a range of health and other settings. 6. Understand and apply the necessary epidemiological criteria to establish causal relationships. 7. Understand and apply key ethical issues for conducting epidemiological and other scientific investigations. 8. Critical reading and evaluation of epidemiological studies in the medical or public health literature..
Course Assessments	<ul style="list-style-type: none"> • periodic duties.0% • Field Training Manual.10% • Midterm exam30% • Final exam 60% • is required for a pass in this course60%
Content Breakdown	Topical Coverage
(Week 1)	Definition of Epidemiology Historical of Epidemiology
(Week 2)	Uses of epidemiology Core Epidemiologic Functions
(Week 3)	The Epidemiologic Approach Defining health and disease
(Week 4)	Diagnostic criteria Measuring disease frequency
(Week 5)	Descriptive Epidemiology
(Week 6)	Analytic Epidemiology
(Week 7)	Concepts of Disease Occurrence Natural History and Spectrum of Disease
(Week 8)	Midterm Exam
(Week 9)	Chain of Infection
(Week 10)	Epidemic Disease Occurrence
(Week 11)	Organizing Data Types of Variables
(Week 12)	Frequency Distributions Properties of Frequency Distributions
(Week 13)	Methods for Summarizing Data Measures of Central Location
(Week 14)	Measures of Spread
(Week 15)	Choosing the Right Measure of Central Location and Spread
(Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	1. Demonstrate ethical choices, values and professional practices implicit in public health decisions while considering the effect of choices on community stewardship, equity, social justice and accountability.



	2. Gather, process, and present information to different audiences in-person, through information technologies, or through media channels.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

مدخل الصحة العامة

1	اسم المقرر الدراسي	مقدمة الصحة العامة
2	رمز المقرر	HA203
3	نوع المقرر الدراسي: عام/تخصص/اختياري	تخصص
4	الوحدات المعتمدة	2
5	ساعات التعليم	2
6	المتطلبات المطلوبة مسبقا	لا يوجد
7	البرنامج المقدم للمقرر	قسم الادارة الصحية
8	لغة التدريس	اللغة العربية و اللغة الانجليزية
9	تاريخ الموافقة على المقرر	2022

وصف موجز للمقرر	هذا المقرر عبارة عن مقدمة للمفاهيم والممارسات الأساسية في الصحة العامة، والذي يركز على علم الوقاية من الأمراض، وإطالة الحياة، وتعزيز الصحة من خلال تنظيم الجهود المجتمعية. سيتم التعرف على صحة الفرد والسكان كمفهوم متطور ومتعدد الأبعاد من خلال السياقات التاريخية والثقافية والنفسية والاجتماعية والاقتصادية والبيئية. وسيتم استكشاف الأهداف والأدوار للتخصصات المتعددة والتحديات، وضبط الممارسات الصحية العامة. أيضا سيتم عرض استراتيجيات التدخل التي تستهدف صحة المجتمع والسكان.
الكتب المقررة	عنوان الكتاب المقرر و ISBN: -الثقافة الصحية د. أحمد محمد بدح مبادئ في الصحة العامة -مبادئ الصحة العامة - د. محمود حمزة (- Handbook of Nutrition and food, second edition, fildman ,2007 - The nutrition and Health Dictionary, Russel,Williams,1995 - يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.
المدة الزمنية للمقرر	56 ساعة
طريقة التدريس	المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.
المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على 1. ان يتعرف الطالب علي مفاهيم واساسيات الصحة العامة 2. ان يتعرف الطالب على مصدر العدوى ، دخول العدوى. الوقاية من الأمراض المعدية ومكافحتها. 3. ان يتمكن الطالب من التعرف عل أنواع المؤشرات الصحية و قياس المخاطر بالأمثلة 4. ان يفهم الطالب أنواع الدراسات الوبائية والتعريف على أنواع اللقاحات وجدول التحصين.



طريقة التقييم	الامتحان النصفى : 30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح : 60%
محتويات المقرر	محتوى المقرر الدراسي
الأسبوع الأول	مفاهيم وتعريفات الصحة العامة أهداف الصحة العامة و مستويات الصحة.
الأسبوع الثاني	علم الأوبئة ، المثلث الوبائي. العوامل التي تؤثر على الصحة والمرض.
الأسبوع الثالث	خصائص عوامل الأمراض المعدية والمناعة.
الأسبوع الرابع	-العوامل البيئية. خطوات انتشار الأمراض المعدية.
الأسبوع الخامس	العدوى ، التعريف ، مصدر العدوى ، دخول العدوى.
الأسبوع السادس	الوقاية من الأمراض المعدية ومكافحتها.
الأسبوع السابع	أنواع وأسباب الأمراض.
الأسبوع الثامن	الامتحان النصفى
الأسبوع التاسع	- الالتهابات الفيروسية وأمثلة عليها، الالتهابات البكتيرية وأمثلة عليها.
الأسبوع العاشر	مفاهيم المؤشرات الصحية
الأسبوع الحادي عشر	صحة الأم والطفل - تعريف وأهداف صحة الأم.
الأسبوع الثاني عشر	برنامج صحة الأم ويشمل: رعاية ما قبل الحمل. رعاية ما قبل الولادة. رعاية الولادة. رعاية ما بعد الولادة. التثقيف الصحي.
الأسبوع الثالث عشر	نتائج الحمل والعوامل المؤثرة عليه. مشاكل صحة الأم.
الأسبوع الرابع عشر	المشاكل الصحية في سن ما قبل المدرسة، الأطفال المعوقين. الخدج الصحة المدرسية
الأسبوع الخامس عشر	الدراسات الوبائية أنواع الدراسات الوبائية وأمثلة عليها
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة على القسم العلمي وصدور الموافقة من مجلس القسم العلمي

مهارات التواصل

اسم المقرر الدراسي	1	مهارات التواصل
رمز المقرر	2	HA408
نوع المقرر الدراسي: عام/تخصص/اختياري	3	عام
الوحدات المعتمدة	4	2
ساعات التعليم	5	2
المتطلبات المطلوبة مسبقا	6	مبادئ الإدارة
البرنامج المقدم للدورة	7	قسم الإدارة الصحية
لغة التدريس	8	اللغة العربية - اللغة الإنجليزية



2022	تاريخ الموافقة على المقرر	9
يهدف المقرر إلى تزويد الطلاب بمهارات التواصل لديهم وتعزيزها، وتشجيع الطلاب على تطوير الممارسة التطبيقية والشفوية وإعطاء مهارات العروض التقديمية وتقييم مهاراتهم الأكاديمية والشخصية ودعمهم لتطوير عدد من المهارات القابلة للنقل الرئيسي مثل تدوين الملاحظات وكتابة المقالات والتقارير ومهارات الامتحان.		وصف موجز للمقرر
عنوان الكتاب المقرر و ISBN: موسوعة أريد العربية د. سيف السويدي مهارات البحث وكتابة تقارير والوصف الذهني وفريق العمل موارد إضافية: يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر		الكتب المقررة
عدد الساعات المطلوب لتدريس المقرر 28 ساعة من المتوقع أن يتم توفير ساعات إضافية من 3 إلى 6 ساعات من الواجبات المنزلية خلال هذا المقرر		المدة الزمنية للمقرر
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب العملية		طريقة التدريس
عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على إكساب الطالب المهارات اللازمة لتطوير الذات والتواصل مع الآخرين والاستماع والانصات وتقبل الرأي الآخر بدون تعصب أو انحياز وتطوير ثقافة العمل الجماعي كفريق بما يكفل تحسين علاقاته وسمو المجتمع.		المستهدف
الامتحان النصفى 30% الامتحان النهائي 60% الواجبات المنزلية، النشاطات الصفية 10% درجة النجاح 60 درجة.		طريقة التقييم
محتويات المقرر		التوزيع الزمني
المواضيع التي سيتم تغطيتها في الأسبوع : • التعرف على مفهوم التواصل وأهميته وفوائده في الحياة • وأنواعه ومنظومة عمله.		الأسبوع الأول
المواضيع التي سيتم تغطيتها في الأسبوع : • التعرف على عناصر التواصل. • الاتصالات الشفوية والكتابية		الأسبوع الثاني
المواضيع التي سيتم تغطيتها في الأسبوع: • خصائص المتصل الفعال والعوامل التي تؤثر في فعالية الاتصال • الاتصالات باستخدام لغة الجسد وكيفية الاتصال والتنسيق بين الاتصال اللفظي والجسدي		الأسبوع الثالث
المواضيع التي سيتم تغطيتها في الأسبوع • اختيار وسيلة التواصل. • تدوين الملاحظات الصحية		الأسبوع الرابع
المواضيع التي سيتم تغطيتها في الأسبوع : • تأثير التكنولوجيا على التواصل بين الحضارات ومعوقات التواصل. • كتابة المقالات والتقارير الصحية		الأسبوع الخامس
المواضيع التي سيتم تغطيتها في الأسبوع : • التواصل مع المجموعات وتنمية المهارات العملية والتطبيقية		الأسبوع السادس
المواضيع التي سيتم تغطيتها في الأسبوع • مفهوم مهارات الاستماع وأهميتها وأنواع الاستماع والفروقات بينها		الأسبوع السابع
الامتحان النصفى		الأسبوع الثامن
المواضيع التي سيتم تغطيتها في الأسبوع : • معوقات الاستماع الفعال والصراعات واساليب التعامل معها		الأسبوع التاسع
المواضيع التي سيتم تغطيتها في الأسبوع : • تقبل الرأي الآخر وتنمية المهارات العملية والتطبيقية		الأسبوع الحادي عشر
المواضيع التي سيتم تغطيتها في الأسبوع : • مفهوم وأهمية التواصل المهني، والعمل ضمن فريق		الأسبوع الثاني عشر
المواضيع التي سيتم تغطيتها في الأسبوع : • مبادئ الحوار والتفاوض، وتنمية المهارات العملية والتطبيقية.		الأسبوع الثالث عشر
المواضيع التي سيتم تغطيتها في الأسبوع : • اللقاء: أهميته وأهدافه، وعناصر وأدوات العرض الجيد.		الأسبوع الرابع عشر



• التحضير للإلقاء، وتنمية المهارات العملية والتطبيقية.	
المواضيع التي سيتم تغطيتها في الأسبوع (برنامج تدريبي فريق العمل والعمل التطوري)	الأسبوع الخامس عشر
• أهمية العمل التطوعي.	
• عناصر الفريق الجيد	
الامتحان النهائي	الأسبوع السادس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
- أن يكون الطالب قادرا على التواصل الفعال بكل جوانبه الهامة.	مهارات عامة
-2 أن يكون الطالب مدركا لمهاراته الشخصية وكيفية تطويرها.	
-3 أن يكون الطالب قادرا علي تحديد المشكلة ومعرفة اسبابها وايجاد الحلول لها.	
-4 أن يكون الطالب قادرا علي تجميع البيانات وتحويله لبيانات.	
-5 أن يكون الطالب قادرا على العمل الجماعي وتوزيع المهام.	
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي	التغيير والتعديل في المقرر الدراسي

اخلاقيات المهنة الطبية:

اخلاقيات المهنة	اسم المقرر الدراسي	1
HA408	رمز المقرر	2
عام	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
لا يوجد	المتطلبات المطلوبة مسبقا	6
قسم الادارة الصحية	البرنامج المقدم للدورة	7
اللغة العربية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9

يقدم هذا المقرر دراسة وتعريف ومفاهيم إخلاقيات المهن الطبية و الفائدة من دراستها، كما يتطرق إلى تداخلاتها مع الاحتراف الطبي والحقوق البشرية والقانون، يتضمن شرح لأهم خصائص الأخلاقيات الطبية ويؤكد على خصوصية العلاقة التي تربط الطبيب بالمريض بوجه خاص وبالزملاء والمجتمع بوجه عام مع ذكر بعض الحالات التطبيقية. و دور الأخلاقيات وارتباطها بالبحث العلمي و القيمة العلمية والاجتماعية والأخطار والفوائد ذات العلاقة.	وصف موجز للمقرر
يهدف هذا المقرر إلى تمكين الطالب بمعرفة حقوقه ومسؤولياته نحو الأطباء والمرضى والزملاء وكيفية التعامل مع المجتمع.	
عنوان الكتاب المقرر و ISBN:	الكتب المقررة
موسوعة اخلاقيات مهنة الطب	
- يمكن استخدام كتب اضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر	
28 ساعة	المدة الزمنية للمقرر
المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة..	طريقة التدريس



المستهدف	عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على: 1- التعرف على اخلاقيات المهن الطبية وعلاقتها بالادارات الصحية . 2- التعرف على مفهوم ومصادر الاخلاقيات المهن الطبية في الادارة الصحية 3- التعرف على المبادئ الاخلاقية في الممارسات الصحية . 4- التعرف على واجبات الطبيب نحو المريض والعلاقة التي تربط الطبيب أو المشرف الصحي بالمريض
طريقة التقييم	الامتحان النصفي : 30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح : 60%
التوزيع الزمني	محتوى المقرر الدراسي
الأسبوع الأول	مفهوم وأهمية علم اخلاقيات المهنة
الأسبوع الثاني	مصادر علم اخلاقيات المهنة
الأسبوع الثالث	الاخلاقيات الطبية بين الفلسفة الغربية والنظرة الاسلامية
الأسبوع الرابع	الابعاد الجديدة لعلم اخلاقيات المهنة
الأسبوع الخامس	المبادئ الاخلاقية الاساسية في الممارسات الصحية والطبية
الأسبوع السادس	العوامل المؤثرة على العلاقة بين الطبيب والمريض
الأسبوع السابع	واجبات الطبيب
الأسبوع الثامن	الامتحان النهائي
الأسبوع التاسع	الخطأ الطبي في الممارسة الطبية والاهمال الطبي
الأسبوع العاشر	واجب الكادر الصحي للمؤسسة التي يعمل فيها والعلاقات المهنية: العلاقة بين الكادر الصحي والزملاء.
الأسبوع الحادي عشر	العلاقة مع المهن الصحية المساندة والقضايا الاجتماعية المتعلقة بالصحة.
الأسبوع الثاني عشر	مبدأ التعامل السري فيما يتعلق بقصر المرضى مبدأ التعامل السري فيما يتعلق بإفشاء التقارير الطبية لمؤسسات جمع البيانات أخلاقيات البحث الطبي
الأسبوع الثالث عشر	أخلاقيات المهن الطبية والصحية علاقة الكادر الصحي بالمريض
الأسبوع الرابع عشر	آداب المهنة الصحية واجبات العاملين الصحيين
الأسبوع الخامس عشر	واجبات الكادر الصحي تجاه المريض واجبات الكادر الصحي تجاه مهنته
الأسبوع السادس عشر	الامتحان النهائي
الحضور والغياب	من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.
مهارات عامة	تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.
التغيير والتعديل في المقرر الدراسي	. المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغيير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الاستاذ تقديم إشعار بالتغييرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغييرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي



Policies and Health Measures

1	Course name	Policies and Health Measures
2	Course Code	HA306
3	Course type: /general/specialty/optional	specialty
4	Accredited units	3
5	Educational hours	4
6	Pre-requisite requirements	Health Legislation and Ethics
7	Program offered the course	Health Administration
8	Instruction Language	English language
9	Date of course approval	2022
Brief Description:		<p>This course will provide students with a fundamental understanding of the nature of :</p> <ol style="list-style-type: none"> 1. Identify major components and issues in the organization, financing, and delivery of the public health system. 2. Describe the legal and ethical bases of public health. 3. Describe how public policy both creates and solves public health problems. 4. Apply principles of strategic planning. 5. Discuss the policy process for improving the health status of population
Textbooks required for this Course:		<p>Book Title & ISBN: Public Health Administration: Principles for Population---Based Management, Second Edition; Novick L, Morrow C, Mays G; Jones & Bartlett Publishers; 2007; ISBN---13: 9780763738426</p> <p>Additional Resources: Buchbinder, S.B., & Shanks, N.H. (2012). Introduction to Health Care Management. Jones & Bartlett, Publishers, 2nd Edition</p> <p>Additional textbooks, handouts, and web links may be used in this course at the discretion of your instructor.</p>
Course Duration		<p>56 hours</p> <p>An additional 3 to 4 hours of homework per day is expected during this course.</p>
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<p>Upon completion of this course, the student will be highly familiar with a wide range of public health topics, including:</p> <ol style="list-style-type: none"> 1. Identify major components and issues in the organization, financing, and delivery of the public health system. 1. health system. 2. Describe the legal and ethical bases of public health. 3. Describe how public policy both creates and solves public health problems.



	<p>4. Apply principles of strategic planning.</p> <p>5. Discuss the policy process for improving the health status of populations.</p>
Course Assessments	<ul style="list-style-type: none"> ● Homework and field research, class activities 10% ● midterm exam 30% ● Practical exam 0% ● Final Exam 60% <p>Passing score: 60%</p>
Content Breakdown	Topics Coverage
Session 1 (Week 1)	<ul style="list-style-type: none"> ● Topics to be covered in the session (week) ● Introduction : An Overview of Health Care Management ● Leadership
Session 2 (Week 2)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● public health and working in teams ● public health professionals
Session 3 (Week 3)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Leading & managing ● Health Planning & Evaluation
Session 4 (Week 4)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Health Care Organizations of the public health system ● Community assessment
Session 5 (Week 5)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● This course will examine governance, policy, strategy, service-delivery and decision-making in the health sector.
Session 6 (Week 6)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Assessment and strategic planning ● Financing Health care & Health Services and Health Insurance
Session 7 (Week 7)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● The Strategic Management of Human Resources ● Information Technology
Session 8 (Week 8)	Midterm Exam
Session 9 (Week 9)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Health Care Ethics ● Program design and evaluation
Session 10 (Week 10)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Assessment the outcomes of health service.
Session 11 (Week 11)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● The efficiency and quality of health services ● policies to reduce inequities in healthcare services and health outcomes.
Session 12 (Week 12)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● Participants will learn health economics ● policy concepts and develop knowledge
Session 13 (Week 13)	<p>Topics to be covered in the session (week)</p> <ul style="list-style-type: none"> ● skills to address policy and service delivery challenges
Session 14 (Week 14)	<p>Topics to be covered in the session (week)</p>



	<ul style="list-style-type: none"> ● دور التشريعات الصحية في تطوير سياسات الخدمات الصحية في ليبيا. ● دور التنمية الصحية في توفير الحقوق الصحية. ● Role of Health Development for providing Right to Health
Session 16 (Week 16)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

إدارة جودة الرعاية الصحية:

اسم المقرر الدراسي	1	ادارة جودة الرعاية الصحية
رمز المقرر	2	HA404
نوع المقرر الدراسي: عام/تخصص/اختياري	3	تخصص
الوحدات المعتمدة	4	2
ساعات التعليم	5	2
المتطلبات المطلوبة مسبقا	6	مبادئ الادارة
البرنامج المقدم للدورة	7	قسم الادارة الصحية
لغة التدريس	8	اللغة العربية واللغة الإنجليزية
تاريخ الموافقة على المقرر	9	2022

وصف موجز للمقرر	يعطي هذا المقرر الى الطلاب بعد اجتياز مقرر مبادئ الصحة العامة (HA 222)، يقدم هذا المقرر دراسة شاملة عن إدارة جودة الرعاية الصحية وسلامة المريض والمبادئ والمتطلبات الأساسية لإدارة الجودة في المؤسسات الصحية، ويتضمن التعريف بنظام إدارة الجودة الشاملة ومتطلباتها تطبيقاتها، وقياساتها، ومؤشراتها وتحدياتها في المؤسسات الصحية
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<p>ودورها في تحسين مستوى الخدمات المقدمة للمرضى كما ونوعا باقل التكاليف الممكنة، كما يتطرق إلى تعريف مراحل تقديم الخدمة الصحية وضبط جودة الخدمات في ما يتعلق بالأساليب والخرائط والتكاليف والمعايير، ومتطلبات تطبيق الجودة الشاملة ونظام إدارة الجودة والمواصفات من حيث المفهوم والفوائد والأنواع والخطوات المطلوبة للحصول على شهادة الأيزو ISO.</p> <p>يهدف المقرر إلى اكساب الطالب مهارة استخدام التطبيقات والأدوات المختلفة للتحكم في جودة خدمات الرعاية الصحية، بما في ذلك مخططات التحكم، ومخططات باريتو، ومخططات الفحص، والمخططات البيانية، والرسوم البيانية المتناثرة وغيرها من الأساليب الكمية، وممارسة هذه التقنيات والتطبيقات في المرافق الصحية مثل المستشفيات ومراكز الرعاية الصحية.</p>	
<p>عنوان الكتاب المقرر و ISBN : إدارة الجودة الشاملة موارد إضافية: يمكن استخدام كتب إضافية وبحوث وروابط لمواضيع من الإنترنت وفقا لتقدير استاذ المقرر.</p>	<p>الكتب المقررة</p>
<p>30 ساعة</p>	<p>المدة الزمنية للمقرر</p>
<p>المحاضرات، التفاعل والنقاش الجماعي، الأنشطة الموجهة ذاتيا، المشاركة النشطة، التجارب المختبرية.</p>	<p>طريقة التدريس</p>
<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <p>(أ) توضيح المبادي الاساسية للطلاب فيما يتعلق بالجودة . (ب) العمل على تفهيم الطالب المشاكل بإدارة الجودة الشاملة. (ج) معرفة الطالب لاهم أبعاد ادارة الجودة الشاملة. (د) معرفة الطالب لاهم رواد ادارة الجودة الشاملة. (هـ) معرفة بعض النماذج عن ادارة الجودة الشاملة.</p>	<p>أهداف المقرر</p>
<p>الامتحان النصفى :30% الامتحان النهائي : 60% الواجبات المنزلية ، النشاطات الصفية : 10% درجة النجاح : 60%</p>	<p>طريقة التقييم</p>
<p>محتوى المقرر الدراسي</p>	<p>التوزيع الزمني</p>
<p>▪ مفهوم الجودة والتطور التاريخي لإدارة الجودة.</p>	<p>الأسبوع الأول</p>
<p>▪ تطور المعايير العالمية للجودة ، المعيار الصناعي الياباني . ومعيار الأيزو 9000</p>	<p>الأسبوع الثاني</p>
<p>▪ الادارة الحديثة للجودة ، إدوارد ديمينغ وكارو ايشيكاوا.</p>	<p>الأسبوع الثالث</p>
<p>▪ المؤثرات المعاصرة للاهتمام بالجودة ، جائزة ديمينغ . وجائزة بالدريج القومية.</p>	<p>الأسبوع الرابع</p>
<p>▪ تأكيد الجودة : المفهوم والنطاق.</p>	<p>الأسبوع الخامس</p>
<p>▪ الجودة الصحية (المفهوم والاهداف ، والخصائص)</p>	<p>الأسبوع السادس</p>
<p>▪ الوظائف والإدارات المستولة عن الجودة.</p>	<p>الأسبوع السابع</p>
<p>الامتحان النصفى</p>	<p>الأسبوع الثامن</p>
<p>▪ نظام تأكيد الجودة الصحية : مراقبة الجودة الصحية ، مهام نظام مراقبة الجودة الصحية ، أهم الفروق بينهما.</p>	<p>الأسبوع التاسع</p>
<p>▪ نظام تأكيد الجودة :تصميم الجودة الصحية المفهوم ومخاطر المنتجين ، والعملاء.</p>	<p>الأسبوع العاشر</p>
<p>▪ تكلفة انخفاض الجودة والمخاطر الصحية في ذلك على المنتجين والعملاء.</p>	<p>الأسبوع الحادي عشر</p>
<p>▪ سياسة الجودة ، مفهومها ، نظام الأيزو 9000 ، وإدارة الجودة الشاملة TQM</p>	<p>الأسبوع الثاني عشر</p>
<p>▪ ادارة الجودة الشاملة TQM العناصر والجودة كأسلوب حياة.</p>	<p>الأسبوع الثالث عشر</p>
<p>▪ هيكل الجودة الصحية ، التخطيط ، المراقبة ، التحسين المستمر ، ودعم الادارة للجودة.</p>	<p>الأسبوع الرابع عشر</p>
<p>▪ عملية التحسين المستمر، خطواتها، توثيق الجودة.</p>	<p>الأسبوع الخامس عشر</p>
<p>الامتحان النهائي</p>	<p>الأسبوع السادس عشر</p>
<p>من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.</p>	<p>الحضور والغياب</p>
<p>تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.</p>	<p>مهارات عامة</p>

<p>يتم تعديل المعلومات الواردة في مخطط هذه الدورة التدريبية وفق التطور العلمي ومقترحات استاذ المادة</p> <p>وتتم مراجعة محتوى الدورات بشكل مستمر للتأكد من ملاءمتها لتغيير التعليم الوظيفي واحتياجات التسويق.</p> <p>سيحاول الأستاذ تقديم إشعار بالتغييرات للقسم العلمي لإقرارها وتبليغ الطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني.</p>	<p>التغيير والتعديل في المقرر الدراسي</p>
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الادارة الاستراتيجية

الادارة الاستراتيجية	اسم المقرر الدراسي	1
HA302	رمز المقرر	2
optional	نوع المقرر الدراسي: عام/تخصص/اختياري	3
2	الوحدات المعتمدة	4
2	ساعات التعليم	5
مبادئ الادارة	المتطلبات المطلوبة مسبقا	6
قسم الادارة الصحية	البرنامج المقدم للدورة	7
اللغة العربية واللغة الإنجليزية	لغة التدريس	8
2022	تاريخ الموافقة على المقرر	9
<ul style="list-style-type: none"> تعريف الطالب بالإدارة الاستراتيجية الصحية ونشاتها والأنظمة الإدارية الصحية في العالم وربطها بالعلوم الصحية العملية والنظرية يدور هذا المقرر حول الإستراتيجية وتوليد القيمة تحدد كل مؤسسة بشكل معلن أو مستتر المجال أو الهدف (scope) العملياتي للأعمال الذي بموجبه تتنافس مع الآخرين. إن جملة القرارات المتخذة في هذا السياق تشكل إستراتيجية المؤسسة (Corporate strategy). أما تلك المتخذة حول كيفية التنافس في الأسواق المستهدفة، فتشكل استراتيجية الأعمال (Business- Level strategy). <p>يركز هذا المقرر على كيفية بناء المؤسسة لهاتين الاستراتيجيتين وذلك ضمن فهم واسع وعميق للمنظور الإداري والعلاقات بين مختلف وظائف المؤسسة ضمن بيئة الأعمال التي تعمل فيها.</p>		وصف موجز للمقرر
<p>عنوان الكتاب المقرر و ISBN:</p> <ul style="list-style-type: none"> John A. Pearce II ,Richard B. Robinson, Jr., Strategic Management -Formulation, Implementation, and Control, 12th edition, 2010 Strategic Management: Text and Cases, 5/e, by Dess Lumpkin/ Eisner, McGraw-Hill Higher Education , 2008 		الكتب المقررة
عدد الساعات المطلوب لتدريس المقرر ساعتين اسبوعيا بمجموع طيلة الدورة (28) ساعة		المدة الزمنية للمقرر
<ul style="list-style-type: none"> المحاضرات العلمية ، التفاعل . الأنشطة الموجهة ذاتيا، المشاركة النشطة. تطبيقات برامج حاسوبية / أو برمجة زيارة ميدانية: مشاريع/ موقع انشاء/ مكاتب مهنية حلقات النقاش 		طريقة التدريس



<p>عند الانتهاء من دراسة المقرر، سيكون الطالب قد أثبت بشكل موثوق القدرة على:</p> <ul style="list-style-type: none"> • تمكين الطالب من اكتساب القدرة على صياغة رؤية المنظمة ورسالتها وتحديد غاياتها على المدى البعيد، وأهدافها المتوسطة والقريبة، بما يضمن للمنظمة الاستمرار في البيئة التي تعمل بها، التعرف إلى أهم المداخل المستخدمة في بناء استراتيجيات منظمات الأعمال الفعالة وتحديد أبعاد العلاقات المتوقعة بينها وبين بيئتها. ويتناول دراسة عملية الإدارة الإستراتيجية وسياسات الأعمال على مستوى المنشأة. • التركيز على المعالجة الشاملة المتكاملة لكافة السياسات والاستراتيجيات من خلال نظام متكامل لاتخاذ القرارات. • يعتمد المقرر على القراءات والمقالات العلمية واستخدام الحالات والتطبيقات العملية. 	<p>أهداف المقرر</p>
<ul style="list-style-type: none"> • الامتحان النصفى 30% • الامتحان النهائى 60% • الواجبات المنزلية والبحوث الدراسية الميدانية ، النشاطات الصفية 10% • درجة النجاح: 60.. 	<p>طريقة التقييم</p>
<p>محتوى المقرر الدراسي</p>	<p>محتويات المقرر</p>
<p>المواضيع التي سيتم تغطيتها في الأسبوع</p> <ul style="list-style-type: none"> • مقدمة والتعريف بالمقرر. ▪ نظرة عامة على الإدارة الصحية. • تقديم المقرر، مكونات الإدارة الاستراتيجية، البيئة العامة للأعمال، ودخول الأسواق الخارجية. 	<p>الأسبوع الأول</p>
<p>المواضيع التي سيتم تغطيتها في الأسبوع:</p> <p>النظم الإدارية وعلاقتها بالإدارة الاستراتيجية:</p> <ul style="list-style-type: none"> ▪ النظم الصحية. ▪ أمثلة عن الأنظمة الصحية. ▪ المستشفى كنظام مفتوح. <p>إعداد الخطط :</p> <ul style="list-style-type: none"> ▪ إعداد الاستراتيجية ▪ إعداد الخطط التنفيذية 	<p>الأسبوع الثاني</p>
<p>المواضيع التي سيتم تغطيتها في الأسبوع</p> <ul style="list-style-type: none"> ▪ رسالة المؤسسة الصحية ورؤيتها والمسؤوليات الاجتماعية. 	<p>الأسبوع الثالث</p>
<p>المواضيع التي سيتم تغطيتها في الأسبوع</p> <p>التخطيط الصحي إحدى وظائف الإدارة الصحية وعلاقته بوظائف الإدارة الأخرى :</p> <ul style="list-style-type: none"> ▪ التنظيم الصحي. ▪ التوجيه و القيادة الإدارية الصحية. ▪ الضبط و الرقابة الإدارية الصحية. ▪ تقييم الأداء والتغذية الراجعة للمؤسسة الصحية. 	<p>الأسبوع الرابع</p>
<p>المواضيع التي سيتم تغطيتها في الأسبوع</p> <ul style="list-style-type: none"> ▪ تحليل البيئة الخارجية للمؤسسة الصحية ▪ التحليل الداخلي للمؤسسة الصحية. 	<p>الأسبوع الخامس</p>
<p>المواضيع التي سيتم تغطيتها في الأسبوع</p> <ul style="list-style-type: none"> • السياسة الصحة. • الأدلة و الاجراءات الإدارية للبيئة 	<p>الأسبوع السادس</p>
<p>المواضيع التي سيتم تغطيتها في الأسبوع</p> <ul style="list-style-type: none"> • تصميم البرامج الصحية وتقييمها. • الأهداف بعيدة المدى والاستراتيجيات العامة • الاستراتيجيات الكبرى للمؤسسة الصحية. 	<p>الأسبوع السابع</p>
<p>الامتحان النصفى</p>	<p>الأسبوع الثامن</p>



المواضيع التي سيتم تغطيتها في الأسبوع. <ul style="list-style-type: none"> تمويل الخطط الاستراتيجية بالرعاية الصحية والخدمات الصحية . وضع الاستراتيجيات الخاصة بسوق العمل الصحي. وضع الاستراتيجيات الخاصة بالأعمال المتعددة ذات العلاقة بالمؤسسة الصحية. 	الأسبوع التاسع
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> الخطط التنفيذية والأهداف قصيرة المدى 	الأسبوع العاشر
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> إدارة التكتيكات الوظيفية(طرق توزيع المهام والمسؤوليات داخل التنظيم الصحي ونطاق العمل). 	الأسبوع الحادي عشر
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> إدارة تكنولوجيا المعلومات الصحية وعلاقتها بالإدارة الاستراتيجية وتحديد المشكلات وصناعة القرار بالمنظمة الصحية. 	الأسبوع الثاني عشر
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> سياسات التنفيذ . علي مستوي الإدارات العليا. علي مستوي الادارة الوسطي. علي مستوي الادارة التنفيذية. 	الأسبوع الثالث عشر
المواضيع التي سيتم تغطيتها في الأسبوع <ul style="list-style-type: none"> إعادة الهيكلة، وإعادة الهندسة، والتركيز التنظيمي. الرقابة الإستراتيجية والتحسين المستمر والتغذية الراجعة. 	الأسبوع الرابع عشر
الامتحان النهائي	الأسبوع الخامس عشر
من المتوقع أن يحضر الطلاب كل المقرر الدراسي ، و في الوقت المحدد ، ولا يسمح بالتغيب إلا لأسباب طبية ويجب دعمه بمذكرة الطبيب.	الحضور والغياب
تلتزم الكلية بضمان حصول الطلاب على كامل المعرفة والمهارات اللازمة للمشاركة الكاملة في جميع جوانب حياتهم، بما في ذلك المهارات التي تمكنهم من أن يكونوا متعلمين مدى الحياة. لضمان حصول الخريجين على هذا الإعداد، سيتم تضمين مهارات عامة مثل الكمبيوتر والاتصالات الشخصية ومهارات التفكير النقدي في جميع المقرر.	مهارات عامة
المعلومات الواردة في مخطط المقرر الدراسي صحيحة في وقت النشر. تتم مراجعة مفردات المقرر بشكل مستمر للتأكد من ملاءمتها للتغير التعليمي للتوظيف واحتياجات سوق العمل. سيحاول الأستاذ تقديم إشعار بالتغيرات للطلاب في أقرب وقت ممكن. يمكن أيضا مراجعة الجدول الزمني بحيث يتم تعديل المقرر وفق ما يراه استاذ المادة من تطور وذلك بعد عرض التغيرات الواردة علي القسم العلمي وصدور الموافقة من مجلس القسم العلمي.	التغيير والتعديل في المقرر الدراسي

Graduation Research project

1	Course name	Graduation Research project
2	Course Code	HA409
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	2
5	Educational hours	2
6	Pre-requisite requirements	Research Methods and Data Analysis



7	Program offered the course	Health Administration
8	Instruction Language	English
9	Date of course approval	

Parts of Research Paper

28. Title Page
- For the cover page, each department has a distinct color as the following:-
 - Title page must contain the following:-
 - University name (Al Asmarya University) (font size 18 and bold in golde colour)
 - Faculty name (Faculty of Public health and Nursing) (font size 18 and bold in golde colour)
 - Department name (Department of Public Health or Department of Nursing) (font size 18 and bold in golde colour)
 - Title of the thesis (font size 16 and bold in golde colour)
 - A Thesis Submitted in Fulfilment of the Requirements for the Degree of Bachelor of (Public Health or Nursing) (font size 14 and bold in golde colour)
 - Students' names (font size 14 and bold in golde colour)
 - Supervisor name (font size 14 and bold in golde colour)
 - Academic year (e.g. 2017/2018) (font size 14 and bold in golde colour)
29. Font Type and Size
- All text in the report one font style should be used in throughout the thesis and should be (Times New Roman). Font size of the entire thesis should be 12 except captions for tables and figures, tables and references, which is 11 in size.
 - The font size of Heading 1 (e.g. Chapters) should be 14 and bold and sub headings should be 12 and bold.
30. Page Layout and Margins
- The Page Layout of entire thesis must be portrait and in A4 size format. Landscape orientation may be used to fit figures or tables. The top, bottom, and right margins should be 2.5 cm and the left margin should be 3 cm.
31. Pagination
- Page numbers should be cantered at the bottom of the page. Preliminary pages (Dedication to list of Abbreviations) should be numbering in small roman numerals (i, ii, iii, etc.). The subsequent pages should be numbering numerals (1, 2, 3, etc.).
32. Latin Terms
- Latin terms are always given in italics.
33. Abstract
- The abstract is a brief summary of the thesis. It presents all the major elements of the work in a highly condensed form. The length of the abstract should not exceeding 300 words. It includes background



about the research topic, research objective, research methods, results, conclusion and recommendation.

34. Acknowledgement

➤ The researcher expresses his gratitude and appreciation to the people who have a role in completing the study.

35. Table of contents

➤ Contains a list of contents included in the study of research. The table of contents contains two main things: the title and the page where it could be found

➤ Make sure that the title of each contents should be self-explanatory and should not leave the reader confused.

➤ Write chapter and sub-topics below.

36. List of Figures

➤ Includes all tables, figures, graphs , photos, charts , and drawing included in the research

➤ Each presentation should be properly labeled with pagination.

37. CHAPTER I

I. Introduction

● This is the first part of the research paper

● This is where the researcher provide the topic of the research paper where the context in terms of content of the research paper is given

J. Problem of the study

● States the main problem that the researcher is trying to solve

● It follows the formulation of the title and should be faithful to it

● It specifically points the important questions that the study needs to answer

● It also serves as the bases for the questionnaires.

K. Objectives of the study

● The researcher should state the objectives of this study.

L. Significance of the Study

● The questions to answer here is" Why conduct the research?"

● The researcher have to identify who will benefit from the research and how they will be benefited.

● This should match with the recommendation.

38. CHAPTER II: LITERATURE REVIEW

➤ This is where you will use your note, Literature review should cover the general and specific information.

➤ Should not lift words from other sources, This will require your command of language and writing skills such as summarizing, paraphrasing and writing indirect speeches.

➤ Data and information can be taken from books, magazines, studies and newspapers that can be related to your research.

➤ Include the surnames of authors and the publication date of their work who provided sources for your study.

➤ Should include a title for the *previous studies*, and the title of the study, objective, methodology and the most important results should be written.

39. CHAPTER III. METHODS AND PROCEDURES



	<ul style="list-style-type: none"> ➤ <i>Research Design</i> <ul style="list-style-type: none"> ● Discuss the kind of research used in the study. Should answers why the method used is appropriate for the study. ● Example of research design: Descriptive survey method ➤ <i>Study Sample</i> <ul style="list-style-type: none"> ● Defines how the population samples are chosen. ➤ <i>Scope and limitation of the Study</i> <ul style="list-style-type: none"> ● Determines the coverage of the research and all the things that it will cover in order to be specific. ● It includes the following: <ul style="list-style-type: none"> ✓ Actual place where the study will be conducted ✓ Duration of the conduct of the study ✓ Limit of the number of respondents. ➤ <i>Procedure:</i> <ul style="list-style-type: none"> ● Outlines the detailed methodology that was carried out to process the samples in your study. ➤ <i>Statistical analysis of data</i> <ul style="list-style-type: none"> ● Shows statistical software and tests used in this study. ➤ <i>Ethics of study</i> <ul style="list-style-type: none"> ● Ethical permit must be written to conduct this study. <p>40. CHAPTER IV : RESULTS OF DATA ANALYSIS</p> <ul style="list-style-type: none"> ➤ Presents all the data gathered by tabulating all the gathered information. ➤ Aside from the tables, an interpretation of each presented data should follow. This will serve as the basis of the summary of findings. <p>41. CHAPTER V: DISSECTION , CONCLUSIONS AND RECOMMENDATIONS</p> <ul style="list-style-type: none"> ➤ <i>Dissection</i> <ul style="list-style-type: none"> ● Interpret and explain your results and compare them with others findings. ➤ <i>Conclusions</i> <ul style="list-style-type: none"> ● Concludes the major contributions of the significant findings. ➤ <i>Recommendations</i> <ul style="list-style-type: none"> ● This should be directly based on the significance of the study. ● This also includes recommended actions that should be done after the conduct of the study such as further assessment of the subject, focus on other factors etc.
<p>CITATION AND REFERENCING</p>	<ul style="list-style-type: none"> ● Student follows the Harvard for literature citation and referencing. Students are highly advised to use reference manger software like Endnote or Mendeley. ● Examples of Harvard citation and referencing:- ● Journal article ● In-text citation: HbA1c levels are elevated well in advance of the clinical development of type 2 diabetes (Pradhan et al.,2007). ● In reference list: Pradhan, A.D., Rifai, N., Buring, J.E. & Ridker, P.M. 2007. Haemoglobin A1c predicts diabetes but not cardiovascular disease in nondiabetic women. The American journal of medicine, 120(8):720-727. ●



- Websites
- In-text citation: Haemoglobin A1C testing (A1C) is the test used to measure your average blood glucose level over an extended period of time (2to 3 months) (Simmons,2014).
- In reference list: Simmons, J. 2014. Haemoglobin A1C Testing. [Online]. Available: <https://type2diabetes.com/diagnosis-and-testing/hemoglobin-a1c/>[Accessed21November 2018].
- Thesis
- In-text citation: The rate of false positive cells can be reduced by targetting more than one chromosomal abnormality (Kasprzyk,1998).
- In reference list: Kasprzyk, A. 1998. Investigation of clonality and minimal residual disease in haematological malignancy using fluorescent in situ hybridization. PhD, University of London.
- Book
- In-text citation: Giardia transmission occurs by the fecal-oral route, either directly, via person to person contact or indirectly, via contamination of surface water or food (Satoskar,2009).
- In reference list: Satoskar, A.R. 2009. Medical parasitology. Texas/USA: CRC Press.



9- قسم الوراثة الطبية



Organic chemistry

1	Course name	Organic chemistry
2	Course Code	MG200
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	General chemistry
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Introduction to organic chemistry: bases of bonding in organic compounds, polar compounds, structural formulas, isomeric phenomena, forms of organic compounds; aliphatic compounds: alkanes, alkenes, alkynes; aromatic compounds; Functional groups: alcohols, ethers, alkyl halides, aldehydes, ketones, carboxylic acids, esters, amides, anhydrides, amines; A complete study in terms of nomenclature, structure, physical properties, methods of preparation and famous reactions.
Textbooks and References		Lecturer's materials
Course Duration		28 weeks
Course Objectives		<p>The students who succeeded in this course will be able to:</p> <ul style="list-style-type: none"> ▪ Classify and list the probable problems at medical laboratories ▪ Define problems. ▪ List and analyze the causes of problems ▪ Identify ways to solve the problems ▪ Analyze management procedures of organization and coordination. <p>So students will be able to:</p> <ul style="list-style-type: none"> • Define chemical bonding. • Describe the structure and representation of organic molecules. • Describe nomenclature • Demonstrate bonding, intermolecular forces, and functional groups • Describe nomenclature for alkyl halides, alcohols, alkenes, and alkynes • Know properties and synthesis • Identify addition reactions • Recognize nucleophilic substitution of alkyl halides. • Demonstrate stereochemistry. • Know free radical reactions • Define aromatic compounds (arenes)



	<ul style="list-style-type: none"> Define reactions of aromatic compounds Know nmr, mass spectrometry, and infrared (ir) spectroscopy Describe synthesis and reactions of alcohols Know ethers and epoxides Describe enols and enolates Describe conjugated unsaturated systems. Recognize synthesis and reactions of β-bicarbonyl compounds Know amines Describe phenols and aryl halides Identify carbohydrates
Course Assessments	Assignment 1: 10% Assignment 2: 30% Final Exam: 60% Daily Assessments: 10% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to organic chemistry Division of organic matter
Session 2 (Week 2)	Saturated hydrocarbons
Session 3 (Week 3)	Unsaturated hydrocarbons
Session 4 (Week 4)	Cyclic and aromatic hydrocarbons
Session 5 (Week 5)	Cyclic and aromatic hydrocarbons
Session 6 (Week 6)	Alcohols
Session 7 (Week 7)	Alcohols
Session 8 (Week 8)	Aldehydes
Session 9 (Week 9)	Aldehydes
Session 10 (Week 10)	Ketones
Session 11(Week 11)	Carboxylic acids
Session 12(Week 12)	Carboxylic acids
Session 13(Week 13)	Ketones Review
Session 14 (Week 14)	Midterm Exam
Session 15(Week 15)	Carboxylic acids
Session 16(Week 16)	Esters
Session 17 (Week 17)	Isomerism and isomerism
Session 18 (Week 18)	Vital organic compounds such as carbohydrates
Session 19 (Week 19)	Carbohydrates
Session 20 (Week 20)	Proteins
Session 21 (Week 21)	Proteins
Session 22 (Week 22)	Proteins
Session 23 (Week 23)	Fats and some other compounds
Session 24 (Week 24)	Fats and some other compounds
Session 25 (Week 25)	Fats and some other compounds
Session 26(Week 26)	Fats and some other compounds
Session 27 (Week 27)	Final Exam
Session 28 (Week 28)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.



Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Biochemistry

1	Course name	Biochemistry
2	Course Code	MG201
3	Course type: /general/specialty/optional	General
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	Organic chemistry
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description	This course will provide students with a fundamental concept in chemistry, such as equilibrium, acid/base chemistry and thermodynamics into an exploration of biology. The content includes: Applying equilibrium processes to study biochemical reactions as well as cell structure. Studying the structure and function of amino acids and proteins. Analyzing the kinetic parameters of enzymes including different mechanisms of how drugs are used to inhibit enzymes. Understanding and making connections in metabolism.
Textbooks and references:	<ul style="list-style-type: none"> • JM. Berg, JL Tymoczko, L. Stryer, Biochemistry, Macmillan, 2019.R.H. • Garrett, C.M. Grisham, Biochemistry, Thomson 2012. • D L. Nelson, M. M. Cox Lehninger Principles of Biochemistry, Macmillan, 2017.
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play. Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning.



Course Objectives:	<p>At the first part of the year the student will be able to:</p> <ol style="list-style-type: none"> 1. Identify the basic biomolecules within human body: Carbohydrates, proteins, and lipids. 2. Understand the basic concepts of biochemistry of Carbohydrates, proteins, and lipids: digestion, absorption and metabolism. 3. Recognize the process of energy conservation and consumption, and the integration of metabolic processes within the body. 4. Recognize the fact that biochemical processes in the human body are adapted to need. <p>The second part year will focus on metabolic biochemistry: the study of chemical reactions that provide the cell with the energy and raw materials necessary for life. Students will examine metabolism of glycogen, fatty acids, amino acids. Medical relevance is emphasized throughout the course.</p>
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>50% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Molecular base of life Water (Vital of life)</p> <ul style="list-style-type: none"> - Structure of water. - Physiochemical properties of water. - Self-ionization of water.
Session 2 (Week 2)	<p>pH</p> <p>Acid and base.</p> <ul style="list-style-type: none"> - Henderson-Hasselbalch equation. - direct contact. <p>Buffer</p> <ul style="list-style-type: none"> - Biological buffers.
Session 3 (Week 3)	<p>Carbohydrates</p> <ul style="list-style-type: none"> - Introduction to carbohydrates - Function and classification of carbohydrates <p>Monosaccharides</p> <ul style="list-style-type: none"> - Nomenclature and classification of monosaccharides - Optical activity of monosaccharaides - Cyclic forms of monosaccharides - Monosaccharides derivatives - Reducing and oxidizing properties of monosaccharides
Session 4 (Week 4)	<p>Oligosaccharides</p> <ul style="list-style-type: none"> - Disaccharides - Example of common oligosaccharides <p>Polysaccharides</p> <ul style="list-style-type: none"> - Homoglycans - Heteroglycans
Session 5 (Week 5)	Proteins



	<ul style="list-style-type: none"> - Introduction to proteins - Function of proteins Amino acids - Structure of amino acids - Classification of amino acids. Acidic amino acids o Basic amino acids Naturally occurring amino acid derivatives Disulfide bond formation Optical activity of amino acids
Session 6 (Week 6)	<ul style="list-style-type: none"> Acid-Base reactions of amino acids - Titration curve of amino acids o Glycine Acid-Base titration o Glutamate Acid-Base titration Peptides - Peptide bond formation - Structure and nomenclature of peptides - Biological activities of peptides
Session 7 (Week 7)	<ul style="list-style-type: none"> Proteins have a unique sequence of amino acids - Protein Structure: Primary, Secondary, Tertiary and Quaternary - Classification of proteins Post-translation modification Glycoproteins Lipoproteins Denaturation Proteins extraction and purifications
Session 8 (Week 8)	<ul style="list-style-type: none"> Lipids - Introduction to lipids - Function and classification of lipids Fatty acids - Function and classification of lipids - Nomenclature and classification of fatty acids - Trans and Cis fatty acid - Characterization of fatty acid Glycerol Triacylglycerol Waxes
Session 9 (Week 9)	<ul style="list-style-type: none"> Glycerophospholipids Sphingolipids Glycolipids - Roles of oligosaccharides in recognition and adhesion at the cell surface Steroids 3. Cholesterol. 4. Hormones derived from Cholesterol The role of lipids in cell membrane fluidity Understanding the diversity of membrane lipid composition Rancidity
Session 10 (Week 10)	<ul style="list-style-type: none"> Enzymes General characterizations of enzymes Applications of enzymes Nomenclature of enzymes Classifications of enzymes 7. Transferase. 8. Oxidoreductase. 9. Hydrolase.



	<p>10. Lyase.</p> <p>11. Isomerase.</p> <p>12. Ligase</p>
Session 11 (Week 11)	<p>Mechanism enzyme action</p> <p>1. Lock and key model</p> <p>2. Induce-fit model</p> <p>Factors affecting enzyme activity</p> <p>Enzyme inhibitors</p> <p>Holoenzyme and Apoenzyme</p>
Session 12 (Week 12)	<p>Hormones structure and function</p> <ul style="list-style-type: none"> - Introduction to hormones - Classification of hormones <p>4. Peptide hormones.</p> <p>5. Amine-derived hormones.</p> <p>6. Steroid hormones</p>
Session 13 (Week 13)	<p>Hormone receptors</p> <p>Membrane receptors</p> <ul style="list-style-type: none"> 5. G protein-coupled receptors (GPCRs). 6. Receptor tyrosine kinases (RTKs). 7. Cytokine receptors 8. Receptor protein serine/threonine kinase <p>Nuclear receptors</p> <p>Mechanism hormone action</p> <ul style="list-style-type: none"> 3. Intracellular. 4. Extracellular <p>Fat of hormones</p>
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Metabolism – the general definition
Session 16 (Week 16) & Session 17 (Week 17)	<p>Carbohydrate metabolism and regulation</p> <ul style="list-style-type: none"> - Gluconeogenesis, Bioenergetics and Glycolysis - Enzyme Regulation and Glycolysis Regulation <p>Glycogen Metabolism</p> <p>Allosteric & Hormonal Regulation of Glucose Metabolism</p> <p>Pentose Phosphate Pathway & Coordination with Glycolysis</p> <p>Galactose/Fructose Metabolism and Reactive Oxygen Species</p>
Session 18 (Week 18) & Session 19 (Week 19)	<p>Lipid Metabolism and Regulation</p> <ul style="list-style-type: none"> - Pyruvate Dehydrogenase Complex Mechanism - Citric Acid Cycle Energetics, Regulation and Ketone Bodies <p>Fatty Acid Catabolism and Biosynthesis</p> <p>Cholesterol Biosynthesis and Transport</p> <p>Coordinated Regulation of Lipid Metabolism</p> <p>Metabolism of glycerophospholipids, sphingolipids, isoprenoid compounds and coronoids</p>
Session 20 (Week 20) & Session 21 (Week 21)	<p>Nitrogen Metabolism: Amino Acids, Nucleotides, DNA</p> <ul style="list-style-type: none"> - Protein Turnover, Nitrogen Transport and Urea Cycle - Amino Acid Catabolism, Regulation, and Fates of Carbon <p>Skeletons</p> <ul style="list-style-type: none"> - Amino Acid Biosynthesis and Carbon Donors - Nucleotide Biosynthesis: Ribonucleotides, Deoxyribonucleotides



	Biosynthesis and degradation of proteins
Session 22 (Week 22) & Session 23 (Week 23)	Integration of metabolic pathways.
Session 24 (Week 24) & Session 26 (Week 26)	Vitamins - Biological function of vitamins - Classification of Vitamins Fat-soluble vitamins Water-soluble vitamins
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



General Microbiology

1	Course name	General Microbiology
2	Course Code	MG202
3	Course type: /general/specialty/optional	General
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	General biology
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		General Microbiology is an upper division course on Microbial Biology consisting of both lecture and laboratory. The course covers bereave identification of the microbial wards (bacteria, viruses, fungi and protozoa), classification and morphology of microorganisms (size, shape, staining reaction and structure), physiology (reproduction, growth, nutrition, cultivation, metabolism, factors affecting growth, control of microbial growth especially in vivo i.e aspects of microbial therapy), mode of action, host parasite relationship, virulence factors, disease development and host response to microbial invasion or mechanisms of resistance. Relevant groups of microorganisms i.e. bacteria, fungi, viruses and parasites are considered.
Textbooks and References:		<ul style="list-style-type: none"> - Jacaelyng .Black microbiology – - Principles and Explorations- Gerard j .TortoraBerdellR.FunkechristineeL.case Microbiology and Introduction . Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardıçoğlu, Atlas Kitapçılık, 2002, ISO 15189. - Kayser, Medical Microbiology © 2005 Thieme. - Greenwood et al: <i>Medical microbiology</i>, 2002. - Frances T Fischbach RN,: A Manual of Laboratory and Diagnostic Tests 7th edition; Lippincott Williams & Wilkins: 2003.
Course Duration		28 weeks
Delivery		Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:		<p>Upon completion of this course, the student will have reliably demonstrated the ability to:</p> <ul style="list-style-type: none"> - Be familiar with the microbial world and its relation to human lives. - Know the methods and equipment used to investigate the microbial world. - Have a background about structure, metabolic pathways, and genetics of bacterial cells.



	<ul style="list-style-type: none"> - Understand the growth requirements of bacteria and how to control their growth. - Understand physical and chemical factors which affect microorganisms, principles of chemotherapy, microbial genetics, pathogenicity and microbial disease and mechanisms of resistance. - Know the basic principles of bacterial culture techniques and general biochemical tests. - Describe the morphological features of bacteria microscopically and on culture. - Describe different laboratory diagnostic test used
Course Assessments	Assignment 1: 10% Assignment 2: 30% Final Exam: 60% A 50% is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to microbiology The Microbial World Introduction and brief history of Microbiology. Classification of microorganisms.
Session 2 (Week 2)	General characters and classification of Bacteria. Bacterial Anatomy. Size, shape, and arrangement of bacterial cells, Structures external to the cell wall (glucocalyx, flagella, axial filaments, and Pili).
Session 3 (Week 3)	The cell wall, Structures internal to the cell wall (cytoplasm, nuclear, area, ribosomes, inclusions, and endospores). Capsule, Flagella, Inclusion, Granule, Spore
Session 4 (Week 4)	Microbial Growth Growth and nutrition of Microbes - Bacterial growth requirements. Bacterial division, Batch Culture, Continuous culture, bacterial growth- total count, viable count, bacterial nutrition, oxygen requirement, CO ₂ requirement, temperature, pH, light.
Session 5 (Week 5)	<ul style="list-style-type: none"> - Culturing of bacteria and media types - Preserving bacterial cultures and growth
Session 6 (Week 6)	-- Control of Microbial Growth Sterilization and Disinfection Physical agents- Sunlight, Temperature less than 1000C, Temperature at 1000C, steam at atmospheric pressure and steam under pressure, irradiation, filtration.
Session 7 (Week 7)	Chemical Agents- Alcohol, aldehyde, Dyes, Halogens, Phenols, Ethylene oxide.
Session 8 (Week 8)	Bacterial Genetics Genetic material Structure and function of the genetic material. Plasmids, replication. <ul style="list-style-type: none"> - Mutation: change in the genetic material. - Genetic transfer (transformation, conjugation, transduction, and recombination).
Session 9 (Week 9)	Microbial virulence factors and pathogenesis of bacterial infection.
Session 10 (Week 10)	Antibacterial antibiotics and their mode of action.



& Session 11 (Week 11)	-Epidemiological aspects: Transmission, (sources and mode of infection), -Chemotherapy and antibiotic resistance. - Vaccination.
Session 12 (Week 12) & Session 13 (Week 13)	Normal bacterial flora of human body.
Session 14(Week 14)	Midterm exam
Session 15(Week 15)	Parasitology Morphology and life cycle
Session 16 (Week 16)	Laboratory diagnosis of following parasites E. histolytica and Plasmodium
Session 17 (Week 17)	Tape worms and Intestinal nematodes
Session 18 (Week 18) & Session 19 (Week 19)	Mycology Morphology, diseases and causes
Session 20 (Week 20)	Mycology Lab diagnosis of Fungi
Session 21 (Week 21) & Session 22 (Week 22)	Virology General properties of viruses, diseases caused,
Session 22 (Week 22) & Session 24 (Week 24)	Virology, lab diagnosis and prevention of following viruses, Herpes, Hepatitis, HIV, Rabies and Poliomyelitis.
Session 25 (Week 25) & Session 26 (Week 26)	Virology, Rabies and Poliomyelitis.
(Week 27)&(Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Anatomy and physiology

1	Course name	Anatomy and physiology
2	Course Code	MG203
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The introduction to anatomy course will study the shape and structure of the human body and its parts. Content includes: basic anatomy and structure of various organ systems of the body, neurons, cardio-vascular, respiratory, digestive and uro-genital systems. The practical part will be devoted to tutorials and studying on anatomical models of different body organs in each system that is mentioned above
Textbooks and References:	Anatomy & Physiology Coloring Workbook: A Complete Study Guide (11 th Edition) by Elaine N. Marieb (Author).
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	<p>By the end of the course the student will be able to:</p> <ul style="list-style-type: none"> • Explain interrelationships among molecular, cellular, tissue and organ functions in each system. • Describe the interdependency and interactions of the systems . • Explain contributions of organs and systems to the maintenance of homeostasis . • Identify causes and effects of homeostatic imbalances. <p>Upon the completion of this course student is expected:</p> <ol style="list-style-type: none"> 1. Cognitive <ol style="list-style-type: none"> a. Define Anatomy and Histology. b. Explain the importance of understanding Anatomy and Histology. c. Compare the normal macroscopic and microscopic structures with abnormal. 2. Affective <ol style="list-style-type: none"> a. Participate in learning process of different principles. b. Develop health consciousness to avoid homeostatic imbalance of the body. c. Develop caring attitude towards the human body. d. Use the different principles of human anatomy in their practice. 3. Psychomotor



	<ul style="list-style-type: none"> a. Express their understanding of the lesson by concept mapping. b. Develop basic science and laboratory skills by observing, experimenting, dissecting, recording etc. c. Draw and identify body part.
Course Assessments	Assignment 1: 30% Final Exam: 60 % Daily Assessments: 10% A 50% is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to anatomy and human body. Organization of the human body Definition of Anatomy Level of organization Anatomical positions Body regions and cavities Terms used in Describing Body Structure Body planes and sections Directional terms
Session 2 (Week 2)	Cell Cycle 2. Epithelial Tissues <ul style="list-style-type: none"> a. Forms and characteristics of epithelial cells b. Specialization of the cell surface c. Types of epithelia
Session 3 (Week 3)	3. Connective Tissue <ul style="list-style-type: none"> a. Cells, fibers and ground substance b. Types of Connective tissues c. Adipose tissue d. Cartilage e. Bone tissue
Session 4 (Week 4)	4. Nerve Tissue <ul style="list-style-type: none"> a. Neurons and parts b. Glial cells and neuronal activity c. Synaptic communications
Session 5 (Week 5)	5. Blood Cells <ul style="list-style-type: none"> a. Composition of Plasma b. Red Blood Cells/Erythrocytes c. White Blood Cells/Leukocytes d. Hematopoiesis III. Integumentary System <ul style="list-style-type: none"> 1. Structure of the Skin <ul style="list-style-type: none"> a. Epidermis b. Dermis 2. Appendages of Skin <ul style="list-style-type: none"> a. Hair b. Nails C. Skin Glands
Session 6 (Week 6)	Body regions Upper limb Lower limb Thorax Abdomen



	Pelvis Head and neck
Session 7 (Week 7)	Body Systems Musculoskeletal system: Bones, joints and muscles Musculoskeletal system: Bones, joints and muscles -Function of urinary organs. -Fluid & electrolytes balances.
Session 8 (Week 8)	Digestive system Function of digestive organs. -Movements of alimentary canal -Role of enzymes in digestive process
Session 9 (Week 9)	Digestive system II: Accessories and glands
Session 10 (Week 10) & Session 11 (Week 11)	Cardiovascular system: heart and blood vessels -Function of heart -Cardiac cycle (blood circulation)
Session 12 (Week 12) & Session 13 (Week 13)	-Blood pressure and its regulation -ECG: methods of recording, normal record and common abnormalities.
Session 14(Week 14)	Midterm Exam
Session 15 (Week 15)	Lymphatic system
Session 16 (Week 16) & Session 17 (Week 17)	Respiratory system Physiology of respiration. -Control of respiration -Hypoxia, cyanosis and dyspnea -Pulmonary function tests
Session 18 (Week 18) & Session 19 (Week 19)	Nervous system I: Central nervous system: brain and spinal cord Nervous system II: Peripheral nervous system and cranial nerves
Session 20 (Week 20)	Nervous system III: Autonomic nervous system Special senses
Session 21 (Week 21)	Special senses
Session 22 (Week 22)	Endocrine system
Session 23 (Week 23)	Urinary system
Session 24 (Week 24)	Reproductive system
Session 25 (Week 25)	Gynecology, pregnancy, and childbirth
Session 26 (Week 26)	Embryology
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing



basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Histology

1	Course name	Histology
2	Course Code	MG204
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Learn the histological study methods. Describes tissue and basic tissue types Knows immune-histochemical and Histochemical staining methods .The course aims to give students the ability to evaluate the histological features of the human body organs and systems.
Textbooks and References:		Gartner LP, Hiatt JL. Color Textbook of Histology W.B. Saunders Company, Philadelphia, 2001 Junqueira LC, Carneiro J. Temel Histoloji, Text & Atlas. Lange Medical Books McGraw-Hill, New York, 2003 Özer A. Temel Histoloji. 2. Baskı Nobel Akademi Yayıncılık 2014 Wheater's Functional Histology. Young and Heath. 4th Edition.2000. UK. - Color Textbook of Histology -Concise Histology Book, July 2010, by Gartner -Functional Histology Book, December 2009, by Kerr -Histology Book, April 2009, by Mitchell -Histology and Cell Biology: An Introduction to Pathology Book, January 2015, by Kierszenbaum -Medical Cell Biology Made Memorable Book, February 1999, by Norman -Netter's Essential Histology Book, April 2013, by Ovalle -Netter's Histology Flash Cards Updated Edition Book, August 2013, by Ovalle -Oral Anatomy, Histology and Embryology Book, January 2009, by Berkovitz
Course Duration		28 weeks
Delivery		Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play.Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop,Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:		The main objectives of this course are:





	<ul style="list-style-type: none"> • To acquire a basic background in histology and to understand the properties of cells and their interactions with one another as components of tissues and organs. • To understand how structure and function correlate at the microscopic level. • To be able to describe the normal structure and function of various cell types, tissues, and organs, and to differentiate their histological structures from each other through examination. • To acquire basic background on embryology and to understand the first weeks of development. • To describe the growth of the foetus and the maturation of the organ system.
Course Assessments	<p>Assignment 1: 30 % Assignment 2: 10% Final Exam: 60%</p> <p>50% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Basic Knowledge of Cytology Cell structure & types (cell, cell skeleton, cytoplasm and organelles, nucleus, Nucleic Acids, Cell Cycle, Cell Division, Cell Differentiation, Cell Death)
Session 2 (Week 2)	Extracellular Matrix
Session 3 (Week 3)	Epithelial Tissue (surface epithelium, glandular epithelium, cell junctions)
Session 4 (Week 4)	Connective Tissue (CT) general characters, and CT fibers - Connective tissues cells, CT proper
Session 5 (Week 5)	Cartilage Tissue - Cartilage cells, types of cartilage
Session 6 (Week 6)	Bone Tissue - bone cells, types of bone, bone healing
Session 7 (Week 7)	Muscle Tissue - structure of muscle cell fibers, types of muscles (skeletal muscles, cardiac muscle, smooth muscles)
Session 8 (Week 8) & Session 9 (Week 9)	Nervous tissue; brain, spinal cord, structure and types of nerve cells, types of nerve fibers, nerve ganglion, injury and healing of nerve cells)
Session 10 (Week 10)	Nervous system
Session 11 (Week 11)	Circulatory system
Session 12 (Week 12) & Session 13 (Week 13)	Blood; blood plasma, blood cells, bone marrow, hematopoiesis - Vascular system: arteries, veins, blood capillaries, blood sinusoids -
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Lymphatic system: immunity, lymph nodes, spleen, thymus gland Skin
Session 16 (Week 16)	Skin
Session 17 (Week 17)	Respiratory system: nasal cavity, trachea, bronchial tree, lung
Session 18 (Week 18)	Digestive system: oral cavity, gastro-intestinal tube, liver, pancreas
Session 19 (Week 19)	Urinary system: kidney, urinary tract.

Session 20 (Week 20)	- Reproductive system: male and female reproductive organs, such as testis, ovary, uterus.
Session 21 (Week 21)	Basic Histology Techniques
Session 23 (Week 23)	Basic Stage of Histological Techniques
Session 24 (Week 24)	Histochemical and Cytochemical Staining Techniques
Session 25 (Week 25) & Session 26 (Week 26)	Immuno-histochemical and Immuno-cytochemical Painting Techniques
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Analytical Chemistry

1	Course name	Analytical Chemistry
2	Course Code	MG205
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	General Chemistry
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:

This course is an introductory to analytical chemistry assess students for understanding the theoretical and practical knowledge concerning quantitative analysis as well as how to manipulate different techniques in volumetric analysis. In addition to provide students with a broad and



	balanced foundation of analytical knowledge and practical skills in medical laboratories
Textbooks and References:	<p>Fundamentals of Analytical Chemistry, Skoog, West and Holler, 7th Ed, Saunders College Publishing, 2000 (we prefer the latest edition)</p> <p>1. Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardiçoğlu, Atlas Kitapçılık, 2002, ISO 15189</p> <p>1. Text book of Medical Laboratory Technology by P. B. Godker-3rd edition</p> <p>2. Medical Laboratory Technology by KL Mukherjee volume III-3rd edition</p> <p>3. Practical Clinical Biochemistry by Harold Varley-6th edition</p> <p>4. Principal of Biochemistry by M. A. Siddiqi</p> <p>5. Instrumental Analysis by Chatwal Anand-5th edition</p> <p>6. Text book of Medical Biochemistry by Chaterjee Shinde-8th edition</p> <p>7. Principal of Biochemistry by Lehninger-7th edition</p> <p>8. Biochemistry by Voet & Voet-4th edition</p> <p>9. Biochemistry by Stryer-9th edition</p>
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	<p>The students will learn basic principle/ mechanisms, procedures and types of various techniques commonly performed in analytical biochemistry.</p> <p>After completing this course student will be able to: -</p> <ol style="list-style-type: none"> 1. Choose appropriate strategies and instrumentation for analysis of different biological sample types. 2. Evaluate the applicability, advantages, limitations and sources of error of current analytical instruments through an understanding of the working principles of these instruments and the underlying biochemical basis. 3. Conduct biochemical analyses and instrument evaluations in the laboratory and link the practical applications to the theoretical background. 4. Interpret and critically evaluate analytical data and communicate the results of biochemical analyses in the form of formal scientific reports.
Course Assessments	<p>Assignment 1: 30%</p> <p>Assignment 2: 10%</p> <p>Final Exam: 60%</p> <p>50% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the</p>



	course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to the course
Session 2 (Week 2)	Quantitative Analysis Sections 1. Types of chemical analysis (descriptive analysis and quantitative analysis) 2. Quantitative Analysis Sections
Session 3 (Week 3)	3. Methods for expressing weights in analytical chemistry 4. Methods of expressing focus.
Session 4 (Week 4) & Session 5 (Week 5)	Volumetric analysis 1- Definition and division. 2- Types of volumetric quantitative analysis: acidity and alkalinity. A- Definition of acids and alkalis and their types.
Session 6 (Week 6)	C - Preparation of solutions of acids and alkalis. D-Standard solutions. E- Types of calibration and the terms used for it.
Session 7 (Week 7)	3- Calibration curves. 4- Evidence and its types?
Session 8 (Week 8) & Session 9 (Week 9)	pH : 1- Definition of pH. 2- Calculation of pH degrees for strong and weak acids & their laws
Session 10 (Week 10)	3- Calculation of pH degrees for alkalis and their laws. 4- Calculation of the pH degrees of salts and their laws.
Session 11 (Week 11)	5- Organized solutions. A- Definition and division.
Session 12 (Week 12)	b- Calculating the pH degrees of the buffer solutions.
Session 13 (Week 13)	c- The regulatory capacity of the organized solutions
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Volumetric oxidation-reduction reactions 1- Definition of oxidizing and reducing agents and their interaction.
Session 16 (Week 16)	2- Ionic Equations and Calculating Equivalent Weight.
Session 17 (Week 17)	3- Electric cells and their relationship to oxidation and reduction.
Session 18 (Week 18) & Session 19 (Week 19)	4- The Nernst equation and its relationship to oxidation and reduction.
Session 20 (Week 20)	5- Calculation of oxidation potential and electromotive force.
Session 21 (Week 21)	6- Reactions of hydrogen peroxide. 7- Iodine reactions.
Session 23 (Week 23)	8- Permanganate reactions.



Session 24 (Week 24)	Quantitative weight analysis. 1- Definition of gravimetric sedimentation reactions and sedimentation methods. 2- How to obtain the precipitate in its pure form or its weight
Session 25 (Week 25)	3- The solubility product and its role in precipitation reactions.
Session 26 (Week 26)	4- Effect of salts on sedimentation.
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medical Ethics and healthcare communication skills

1	Course name	Medical ethics and Healthcare Communication Skills
2	Course Code	MG206
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description

This course will explore the major ethical issues confronting the practices of medicine and biomedical science. We will become familiar with legal and institutional positions, consider and debate opposing arguments on the various topics, and examine relevant case studies.



Textbooks and References:	<p>-The Ethical Slut: A Practical Guide to Polyamory, Open Relationships & Other Adventures Mar 10, 2009 by Dossie Easton and Janet W. Hardy</p> <p>1.Principles of Ethics for The Health Profession 2nd Edition. Timby, and Black, Evolve</p> <p>2. Bioethics, 1st edition, Letty Kwan, C and E Publishing</p> <p>3. Tom L. Beauchamp (Author), James F. Childress (Author). Principles of Biomedical Ethics. 4th Edition. Oxford University Press. 1994. ISBN-10:019508537X</p> <p>4- Klinik Biyokimya Analiz Metodları, Bahattin Adam ve Yasemin Ardıçoğlu, Atlas Kitapçılık, 2002, ISO 15189</p> <p>5- Principles of Ethics for the Health Profession 2nd Edition. Tim by, and Black, Evolve</p> <p>6- Bioethics, 1st edition, Letty Kwan, C and E Publishing</p>
Course Duration	28 weeks
Delivery	<p>Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play. Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop</p> <p>Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning</p>
Course Objectives:	<p>Create an awareness in the student as to how a medical laboratory is organised and managed. The first part of the course addresses the basic fundamentals of managerial practice in the laboratory setting. The managerial functions of planning, organising and controlling are introduced. The second part of the course deals with laboratory technical management - managerial activities specific to medical laboratories.</p> <p>Learning outcomes:</p> <p>1-To be able to discuss ethical cases using ethical principles 2. To ensure a sound ethical dimension to all cases in health care; acknowledging that each case has its ethical component. 3. To be able to understand and impart a proper informed consent process 4. To understand negligence and malpractice 5. To understand the principle of invoking double effect 6. To be able to distinguish between utilitarian approaches to health care, and, deontological approaches. 7. To understand what we mean by respecting the autonomy of patients.</p>
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>50% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	<p>Orientation to course/Overview of medical ethics</p> <p>Rights & duties of doctors, patients, family and community</p>



Session 2 (Week 2)	Inter professional relationships
Session 3 (Week 3)	Accountability & misconduct of profession
Session 4 (Week 4)	Rules & regulations of the medical profession
Session 5 (Week 5)	Islamic principles & jurisdiction related to disease and practice of profession
Session 6 (Week 6)	Ethical aspects of newer medical issues,
Session 7 (Week 7)	Ethical aspects of medical research
Session 8 (Week 8)	Patient's secrets, file and reassurance & other topics
Session 9 (Week 9)	The role of the laboratory in the health service -
Session 10 (Week 10)	Laboratory customers
Session 11 (Week 11)	
Session 12 (Week 12)	The organization of the hospital and the laboratory
Session 13 (Week 13)	
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15) & Session 16 (Week 16)	<ul style="list-style-type: none"> • Introduction to the Course • Why is Health Communication Important? • Sociohistorical Considerations • Public & Political Considerations • Social Considerations • Cultural Considerations
Session 17 (Week 17) & Session 18 (Week 18)	<ul style="list-style-type: none"> • Stigma & Mental Health • Guest speaker: Elizabeth Flood Reading TBA
Session 19 (Week 19)	<ul style="list-style-type: none"> • Interview Paper due Interpersonally & Narratively Making Sense of Health
Session 20 (Week 20)	<ul style="list-style-type: none"> • Patient Caregiver Communication
Session 21 (Week 21)	<ul style="list-style-type: none"> • Narrative Medicine, Perspective Taking, Patient Perspectives
Session 22 (Week 22)	<ul style="list-style-type: none"> • Communication in the Cancer Clinic • Narratives of Illness
Session 23 (Week 23)	<ul style="list-style-type: none"> • Health Caregiver Perspectives • Family Caregiver Perspectives • Family caregivers: Social support & Silence
Session 24 (Week 24)	<ul style="list-style-type: none"> • Death & Dying: Palliative Care • Death & Dying: Final Conversations
Session 25 (Week 25)	<ul style="list-style-type: none"> • Community based Participatory Research • Education Wittenberg • Health Campaigns.
Session 26 (Week 26)	Communication Matters Campaign
Session 27 (Week 27)	Final exam
Session 28 (Week 28)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed.



	Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Laboratories Safety and Medical instruments:

1	Course name	Laboratory Safety and Medical instruments
2	Course Code	MG207
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course will explore to the student the Introduction to lab safety culture, precautionary labels, Material Safety Data Sheets, using personal protective equipment, handling lab equipment safely, handling , storing and disposing of chemicals safely, using emergency equipment as well as safety planning.
Textbooks and References:		<ul style="list-style-type: none"> - Laboratuvar Aletleri, Adam B, Nobel Yayınları, Ankara, 2000 - Sibel Uzun, Fatih Özçelik, Laboratuvar Güvenliği El Kitabı, Tüketici Güvenliği Ve Halk Sağlığı Laboratuvarları Dairesi Başkanlığı, 2017, 12-21. - SecurityY.Hakan Abacıoğlu, Cemile Sönmez, UMS Laboratuvar Güvenliği Rehberi, Sağlık Bakanlığı, Türkiye Halksağlığı Kurumu Başkanlığı, Mikrobiyoloji Referans Laboratuvarları Daire Başkanlığı 2014, 141-157
Course Duration		28 weeks



Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop. Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	<p>The main objectives of this course are:</p> <ul style="list-style-type: none"> • To develop intuition and deepen understanding of concepts. • Apply concepts learned in class to new situations. • Experience basic phenomena. • Develop critical, quantitative thinking. • Develop experimental and data analysis skills. • Learn to use scientific apparatus. • Learn to estimate statistical errors and recognize systematic errors. • Develop reporting skills (written and oral). • Practice collaborative problem solving. • Exercise curiosity and creativity by designing a procedure to test a hypothesis. • Better appreciate the role of experimentation in science. • Test important laws and rules.
Course Assessments	<p>Assignment: 40 % Final Exam: 60% 50% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
(Week 1)&(Week 2)	Introduction of the course. Classification of medical laboratories Medical Laboratory Safety – Overview
(Week 3)	Risk management in medical laboratory
(Week 4)	Personal protective equipment
(Week 5)	Chemical safety
(Week 6)	Biological safety
(Week 7)	Physical security and data security
(Week 8)	Waste management
(Week 9)	First aid-Emergency action plans in medical laboratory accidents Rules to be followed in the medical laboratory
(Week 10)	Identifying Glass and Plastic Materials
(Week 11)	Solvents and Concentration Concepts
(Week 12)	Distilled Water, Cleaning and Sterilization of Materials
(Week 13)	Identifying laboratory devices
(Week 14)	Midterm Exam
(Week 15)& (Week 16)	General introduction to the course, Identifying Glass and Plastic Materials Identifying laboratory devices
(Week 17)	Solvents and Concentration Concepts Distilled Water, Cleaning and Sterilization of Materials



(Week 18) (Week 19)	Microscope Brightfield microscope Simple microscope Compound microscope Parts & principle of the microscope Illumination, Magnification and resolution Setting up, uses, Care & safety
(Week 20)	Phase Contrast microscopy Darkfield microscopy Fluorescent microscope Parts & principle Setting up, uses, Care & safety Electron Microscope Parts & principle Magnification & resolution Uses
(Week 21)	Acid-Bases and Buffer Solutions
(Week 22)	Centrifuge and centrifugation Parts & principle of the centrifuge Setting up Types & Uses Care and safety
(Week 23)	Spectrophotometric methods Spectrophotometer Parts & principle setting up & Calibration Uses and care
(Week 24)	Turbidimetric, Nephelometric, Fluorometric Methods Autoanalyzers Chromatographic methods Principle & types Paper chromatography Thin layer chromatography Column chromatography Electrophoresis electrophoresis apparatus Principle, Uses, Care and safety
(Week 25)	Filtration apparatus Types & Uses of the filters
(Week 26)	Equipment for culturing organisms Microbiological safety cabinet Incubator Pipettes, Bunsen Burner Water bath & Dry oven Sterilization & Decontamination Autoclave
Session 27 (Week 27) Session 28 (Week 28)	Final Exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Molecular biology

1	Course name	Molecular biology
2	Course Code	MG208
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		Molecular Genetics introduces the student to the structure, maintenance and expression of the genome. We will examine both prokaryotic and eukaryotic genomes in this course, with an emphasis on genetic analysis. After completing this course, students should be able integrate the structure and function of the genome, describe how gene expression is regulated in multiple paradigms, and be able to understand how genetic analysis is used to dissect complex regulatory processes.
Textbooks and References:		Watson et al., Molecular biology of the gene, 7th, 2014. Pearson education, Inc
Course Duration		28 weeks
Delivery		Required Readings: assigned review articles.



	Lecture slides and reading articles will be distributed.
Course Objectives:	<ol style="list-style-type: none"> 1) Identify the basic taxonomy and principles of the scientific method as it pertains to the natural, physical world, 2) Infer relationships, make predictions and solving problems based on an analysis of evidence or scientific information, 3) Apply scientific concepts, quantitative techniques and methods to solving problems and making decisions, and 4) 4) Describe the relevance of some aspect of the natural science to their lives and society
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
(Week 1)	<p>Course overview</p> <p>Introduction to molecular biology</p>
(Week 2)	DNA and RNA structure in details
(Week 3) (Week 5)	<p>The replication of DNA:</p> <ul style="list-style-type: none"> - Chemistry of DNA synthesis - The replication fork components in details - Finishing of replication
(Week 6) (Week 7)	<p>Mechanisms of Transcription:</p> <ul style="list-style-type: none"> - Transcription cycle in Bacteria - Transcription in eukaryotes - Transcription by RNA pol I and III
(Week 8) (Week 9)	<p>RNA splicing:</p> <ul style="list-style-type: none"> - Spliceosome machinery and pathway - Alternative splicing
(Week 10) (Week11)&(Week12)	<p>Translation:</p> <ul style="list-style-type: none"> - Initiation of translation - Translation elongation - Translation termination
(Week 13)	The mutability and repair of DNA
(Week 14)	Midterm Exam
(Week 15)	Review Physical and chemical structure of genetic material: denature and renature process of DNA molecule, T_m and Cot curves, determination of DNA molecular weight and concentration.
(Week 16)	Gene structure and organized in pro and eukaryotic cell. A general structure of typical human and bacterial genes with labeled features of up and down stream regulatory elements.



(Week 17)	Principle of gene expression in pro and eukaryotic cells. Control sequences (Enhancers, silencers; cofactors'), coding sequence RNA polymerase, Initiation of transcription, basal transcription factors (TBP, TFIIB, IIF, IIE, IIH).
(Week 18)	Post transcription events; RNA splicing, 5cap ,and poly A formation
(Week 19)	Control of RNA splicing. 5UTR and 3UTR cleavage site of introns, Splicing machine, Splicing intermediate; alternative splicing and their relation to gene expression control.
(Week 20)	Translation control in pro and eukaryotic
(Week 21)	Major molecular level events of translation in eukaryotic cell; cap-dependent and cap- independent translation; role initiation factors; PABP and poly A tail in gene translation.
(Week 22)	Post translation events. Methylation, acetylation; phosphorylation process
(Week 23)	Chromosome modification or remodeling; DNA methylation; Histone acetylation
(Week 24)	Blockage of translation; Degradation rate of m-RNA; poly A tail length; si-RNA and mi-RNA role; control of enzyme activity by effectors and inhibitors.
(Week 25)	Detection of gene control sequence by biochemical approaches in vitro and recombinant DNA transfected into culture cells
(Week 26)	Methods to determine the important of certain sequence or factor for gene expression at transcription or translation level; real time PCR ,DNA foot print; Northern blot; western blot and microarray
(Week 27) (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Genetics Diagnosis

1	Course name	Genetics Diagnosis
2	Course Code	MG300
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	Human genetics
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The course intends to give basic knowledge about the composition and function of the human genome as well as the importance of genetic factors for origin of diseases, abnormalities and developmental disorders in humans, partly for variation of normal properties.
Textbooks and References:	Harold Chen (2017), Atlas of Genetic Diagnosis and Counseling, springer.
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	By the end of the course the students will be able: <ul style="list-style-type: none"> To develop and demonstrate an understanding of the structure and function of genes and the organization of the human genome; To understand the patterns of inheritance and clinical manifestations of genetic diseases; chromosomes, chromosomal abnormalities, and the clinical features of common chromosomal disorders; population genetics; inborn errors of metabolism; and inherited cancer syndromes.
Course Assessments	Assignment 1: 40 % Final Exam: 60% 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction of genetic disease
Session 2 (Week 2)	Cystic fibrosis



& Session 3 (Week 3)	<ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 4 (Week 4)	<p>Achondroplasia</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 5 (Week 5)	<p>Alpha-1 antitrypsin deficiency</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 6 (Week 6) & Session 7 (Week 7)	<p>Huntindton disease</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 8 (Week 8)	<p>Phenylketonuria (PKU)</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 9 (Week 9)	<p>Fragile X syndrome</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency



	<ul style="list-style-type: none"> - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern <p>Other names for the disease</p>
Session 10 (Week 10) & Session 11 (Week 11)	<p>Spinal muscular atrophy</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 12 (Week 12)	<p>Marfan syndrome</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 13 (Week 13)	<p>Noonan syndrome</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	<p>Hereditary spherocytosis</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 16 (Week 16)	<p>Von willebrand disease</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern



	<ul style="list-style-type: none"> - Other names for the disease
Session 17 (Week 17)	<p>Polycystickidney diseased</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern <p>Other names for the disease</p>
Session 18 (Week 18)	<p>Hypercholesterolemia</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 19 (Week 19)	<p>Familial polyposis coli</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 20 (Week 20)	<p>Sickle cell anemia</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 21 (Week 21)	<p>Beta thalassemia</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 22 (Week 22)	<p>Friedreich ataxia</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product



	<ul style="list-style-type: none"> - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 23 (Week 23)	<p>Congenital adrenal hyperplasia</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 24 (Week 24) & Session 25 (Week 25)	<p>Ovarian cancer</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 25 (Week 25)	<p>Breast cancer</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
Session 26 (Week 26)	<p>Crohns disease</p> <ul style="list-style-type: none"> - Genes associated with the disease - Chromosomal location - Signs and symptoms - Frequency - Normal function of gene product - Problems caused by mutations in the genes (disease mechanism). - Inheritance pattern - Other names for the disease
(Week 27 & 27)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.



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Human Genetics

1	Course name	Human Genetics
2	Course Code	MG301
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Biochemistry
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
Brief Description:		This course introduces you to the laws of heredity as they apply to humans and to the study of inherited traits. The course covers a number of other related topics, including sex determination, the composition and function of genes, the causes and effects of mutation, population genetics, the genetics of immunity and cancer, the contribution of heredity to behaviour and intelligence, genetic counselling, and genetic technologies.
Textbooks and References:		<ol style="list-style-type: none"> 1. Human Genetics: Concepts and Applications, 9th edition. Author: Ricki Lewis.2009. 2. Concepts of Genetics,12th edition, Author: Klug W.S., et al.2019. 3. Genetics From Genes to Genomes,5th edition, Author: Hartwell, L.H. et al.2014
Course Duration:		28 weeks
Delivery		Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:		The students will learn basic principle/ mechanisms, procedures and types of various techniques commonly performed in human genetics. After completing this course student will be able to:- 1-Examine genetics problems while applying Mendel's Laws, Punnett squares and gene linkage.



	<p>2-Outline a basic understanding of cell function, including mitosis and meiosis, and critique how they support both Mendelian genetics and the chromosomal theory of inheritance.</p> <p>3-Predict protein expression from DNA sequence and explain the genetic basis of disease.</p> <p>4-Identify current technologies in genetic engineering and debate how they have influenced food production in society.</p> <p>5-Compare and contrast therapeutic and reproductive cloning.</p> <p>6-Examine various types of assisted reproductive technology and assess how they are used.</p> <p>7-Explain why and how genetic screening and genetic counseling are utilized.</p> <p>8-Discuss how genetics has led to personalized cancer diagnosis and treatment.</p> <p>9-Describe the bio-psycho-social aspects of genetic based diseases.</p>
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to the course
Session 2 (Week 2)	Overview of Genetics
Session 3 (Week 3)	Mendelian Genetics
Session 4 (Week 4)	Cell Structure, Mitosis, Meiosis and the Chromosome Theory of Inheritance
Session 5 (Week 5)	Recombination of Chromosomes, Gene Linkage and Cytogenetics
Session 6 (Week 6)	DNA structure, replication, transcription and translation
Session 7 (Week 7)	Genetic Mutations
Session 8 (Week 8)	Genes, Behavior and Human Disease
Session 9 (Week 9)	Genetic Technologies and Genetically Modified Organisms
Session 10 (Week 10)	Single-gene Inheritance
Session 11 (Week 11)	Gene Expression and Epigenetics
Session 12 (Week 12)	Chromosomes
Session 13 (Week 13)	Cloning and Reproductive Technologies
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Cancer Genetics
Session 16 (Week 16)	Gene mapping and identification
Session 17 (Week 17)	Genetic dictation and genetic variation



Session 18 (Week 18)	Modes of inheritance (Sex-linked and autosomal)
Session 19 (Week 19)	The chromosome basis of human disease (Clinical cytogenetics)
Session 20 (Week 20)	The gene basis of human disease (metabolism disorder)
Session 21 (Week 21)	Multifactorial inheritance and common disease
Session 22 (Week 22)	Gene regulation
Session 23 (Week 23)	Gene Therapy
Session 24 (Week 24)	Developmental genetics, Immunogenetics
Session 25 (Week 25)	Clinical genetics and genetic counselling
Session 26 (Week 26)	
Session 26 (Week 26)	Final Exam
Session 27 (Week 27)	
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Microscopy

1	Course name	Microscopy
2	Course Code	MG302
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course introduces to provide hands-on training in state-of-the-art optical microscopy techniques to address questions in biology. We will present basic concepts on microscopy, which will then be apply in various laboratory exercises using equipment available in the Micro and Nano Imaging Facility. By the end of the course, students will be familiarize with all the instruments in the imaging facility and have gained an appreciation for optical microscopy.
Textbooks and References:	Fundamentals of Light Microscopy and Electronic Imaging” by Douglas B. Murphy and Michael W. Davidson (ISBN: 04716921
Course Duration	48 hours
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	<ul style="list-style-type: none"> • This comprehensive course on microscopy techniques introduces students to both the theory and practical use of modern microscopes. • The course features lectures on the basic physical principles behind the most common modern microscopy techniques. • The course will cover introduction to <ul style="list-style-type: none"> - optics, principles of image formation, light microscopy techniques, principles of fluorescence, digital imaging, confocal microscopy, TIRF, STORM/PALM, STED, FRET-FLIM, and FRAP techniques, structured illumination, two-photon fluorescence, second harmonic generation, vibrational imaging, scanning probe microscopy (SPM) techniques, atomic force microscopy (AFM), electron microscopy (SEM, TEM and STEM), and X-ray microscopy/microCT.
Course Assessments	Assignment 1: 40 % Final Exam: 60% 50% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course.



	Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	History of Microscope
Session 2 (Week 2) Session 4 (Week 4)	Light Microscopy Optics
Session 5 (Week 5) Session 9 (Week 8)	Fluorescence, Confocal, Multi-photon
Session 10 (Week 10) Session 13 (Week 13)	Transmission Electron Microscope
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15) Session 17 (Week 17)	Scanning Electron Microscope
Session 18 (Week 18) Session 20 (Week 20)	Immunocytochemistry Techniques
Session 21 (Week 21) Session 23 (Week 23)	Staining and Special Techniques
Session 24 (Week 24) Session 26 (Week 26)	Imaging Techniques
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Human Reproduction and embryology

1	Course name	Human Reproduction and embryology
2	Course Code	MG303
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Histology
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course will discuss human reproduction from a biological point of view. Topics will include anatomy, reproductive physiology, genetics, conception, embryology, pregnancy and parturition, and disease states. Consideration will be given to medical, psychological, sociological, and legal and ethical perspectives
Textbooks and References:	Mader, Sylvia S., Human Reproductive Biology, 3rd edition. McGraw Hill Higher Education, 2004 Langman's Medical Embryology, 13th Ed. LWW. Previous editions are suitable, but course materials will reference pagination or chapters in the 13th Edition.
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	<ul style="list-style-type: none"> - Describe the cell cycle, and how sexual reproduction passes chromosomes from parents to offspring. Describe chromosomal abnormalities that can occur - Explain the fundamental principles of Mendelian genetics and the transmission of genes from parents to offspring. Describe the structure and function of DNA, and the processes of DNA replication, transcription, and translation. Discuss the types of prenatal genetic tests and the advantages and dangers of each. - Discuss the transmission, symptoms, consequences and treatment of common sexually transmitted diseases. Discuss common methods of birth control and infertility treatment. - Describe normal male and female reproductive anatomy. List the major reproductive hormones and their functions throughout the human life cycle. Explain the series of biological events that commence with



	<p>conception and lead to parturition. List the four stages of sexual response, and describe the characteristics of each.</p> <ul style="list-style-type: none"> - Discuss issues relating to ethical issues related to human reproduction with consideration of legal, psychological, and sociological perspectives. - Human embryology part is designed for students in the second part of year with basic training in cell/molecular biology, physiology and human histology. Main goal of the course is to provide basic fundamental embryology concepts upon which to build broader and deeper knowledge and appreciation for anatomical sciences as students progress in their respective academic careers. This course is designed for mature, self-driven and proactive professional adult learners.
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>50% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Chromosomes and Chromosomal Inheritance
Session 2 (Week 2)	Genes, Medical Genetics, and Genetic Counseling
Session 4 (Week 4)	
Session 5 (Week 5)	DNA and Molecular Genetics
Session 6 (Week 6)	Sexually Transmitted Diseases
Session 7 (Week 7)	Reproductive Hormones and Sexual maturation
Session 9 (Week 8)	Human Reproductive System
Session 10 (Week 10)	
Session 11 (Week 11)	Birth Control and Infertility
Session 12(Week 12)	Human Sexual Response
Session 13 (Week 13)	Fertilization, Development, and Birth
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	<p>Introduction of Embryology</p> <p>Producing gametes</p> <p>Oocyte growth</p> <p>Follicle cells</p> <p>Storage of informational molecules</p>
Session 16 (Week 16)	The regional organization of the oocyte.
Session 18 (Week 18)	Oocyte maturation
	Oogenesis



	Spermatogenesis
Session 19 (Week 19) Session 20 (Week 20)	Sperm - oocyte interaction The acrosome and the vitalize coat Factor limiting sperm oocyte fusion Activation of the spermatozoa Motility Chemotaxis Capacitation
Session 21 (Week 21) & Session 22 (Week 22)	Acrosome reaction Activation of the oocyte and cell cycle regulation First stages of development Cleavage patterns Cytoplasmic segregation Formation of cell lines
Session 23 (Week 23)	Endocrine control of reproduction Assisted reproductive technology
Session 24 (Week 24)	Clinical in vitro fertilization Lab. Semen analysis
Session 25 (Week 25) & Session 26 (Week 26)	Oocyte retrieval Embryo culture Sperm freezing Cryptoservation
(Week 27&28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.



Cells and Tissues culture

1	Course name	Cells and Tissue cultures
2	Course Code	MG304
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	Histology
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	The course should provide the student with knowledge such that the student can carry out basic cell-culture techniques properly and safely, and explain factors of significance in the cultivation of cells in vitro.
Textbooks and References:	Ler D., Glamoclija U., Suljagic M; Introduction to Mammalian Cell Culture (2016) PERFECTA,
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	The main goal of the courses is: <ul style="list-style-type: none"> - To teach students on how to use living cells and tissues combined with genetic engineering tools that can be used to integrate and enhance applications in biomedicine and overall research in life sciences. - To provide specific knowledge on scientific and technical aspects of growing tissues and organs, as well as broader understanding of the challenges of producing, storing, delivering and using tissue engineered products, and their ethical and regulatory issues.
Course Assessments	Assignment 1: 40 % Final Exam: 60% 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to the science of tissue culture
Session 2 (Week 2)	Laboratory instruction inside the laboratory of animal or plant tissue
Session 4 (Week 4)	



Session 5 (Week 5) Session 7 (Week 7)	Techniques of cultivating animal tissues and plant tissues
Session 8 (Week 8) Session 9 (Week 9)	Study of primary cells and their types in terms of their growth and cell life
Session 10 (Week 10) Session 11 (Week 11)	The differences between adhesive, floating and cell shapes
Session 12 (Week 12) Session 13 (Week 13)	Animal tissue culture media and their composition Favorable factors for cell growth
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Trypsinization , subculture, freezing down
Session 16 (Week 16) Session 17 (Week 17)	Preservation and storage of nutrient environments and transfer from nutrient environment the soil
Session 18 (Week 18) Session 20 (Week 20)	Various types of plant tissue culture (whole plant – myristems – rootstocks – atomic culture – embryo culture)
Session 21 (Week 21) Session 23 (Week 23)	Plant tissue culture media and their composition Favorable factors for cell growth
Session 24 (Week 24) Session 26 (Week 26)	Application technique of tissue culture
(Week 27&28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure



	relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Immunology

1	Course name	Immunology
2	Course Code	MG305
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	General Microbiology
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course aims to introduce up to date, basic immunology concepts at a level suitable for students with little prior exposure to immunology. Course Lectures and laboratory emphasize detection, identification, nature of innate immunity, antigens and antibodies, and the antigen-antibody reaction encountered, quantities cells involved in immune responses, and quantities blood proteins produced in response to infection, malignancy or tissue damage or which play a role in protecting the body against these changes.
Textbooks and References:	1. Abul K. Abbas & Andrew H Lichtman. Basic immunology : 2nd edition, Saunders publishers: 2004 Daniel C, Thomas B. Manual of allergy and immunology: Diagnosis and therapy : 4th edition: Lippincott William & Wilkins Publishers; 2002.. - Gabriel Virella, Medical Immunology, 2001. - Parslow, Tristram G.; Stites, Daniel P.; Terr, Abba I.; Imboden, John B., 10th edition, Medical Immunology, 2001.
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to: 1. Understand the definition and basis of immunology in order to understand the immune response to different infections. 2- Explain the body mechanisms and immune response 3- Understand the different cells, tissues and organs of immune system 4- Define antigen-antibodies 5- Know the immunological techniques and serological methods used in diagnosis of infectious diseases. learning outcomes 6- Immunization of animals and analysis of immune response using different techniques as precipitation, agglutination, ELISA ...



Course Assessments	Assignment 1: 10.% Assignment 2: 30% Final Exam: 60% Daily Assessments: 10% A 60 % is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to Immunology, the immune system
Session 2 (Week 2)	Cells of the immune system and lymphoid system organs– primary and secondary
Session 3 (Week 3)	Types of immunity Natural immunity Acquired immunity
Session 4 (Week 4)	Antigen, Haptens and Adjuvants
Session 5 (Week 5)	Cellular immunity & humoral immunity
Session 6 (Week 6)	Cell-mediated immune responses Effector mechanisms of cell-mediated immunity
Session 7 (Week 7)	Humoral immune responses and effector mechanisms
Session 8 (Week 8)	Complement system
Session 9 (Week 9)	Cytokines
Session 10 (Week 10)	Immune responses against infectious diseases
Session 11 (Week 11)	Tumor immunology
Session 12 (Week 12)	Immune responses against tumours and transplants
Session 13 (Week 13)	Immunological tolerance and autoimmunity
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Congenital and acquired immunodeficiencies
Session 16 (Week 16)	Hypersensitivity (allergic)
Session 17 (Week 17)	Transplantation & MHC structure and functions
Session 18 (Week 18)	Vaccinology : Principles and practice
Session 19 (Week 19)	Disorders of the immune system.
Session 20 (Week 20)	- Serology; introduction and importance.
Session 21 (Week 21)	- Antigen, antibody and basis of antigen antibody reactions. Zone phenomenon.
Session 23 (Week 23)	- Agglutination; slide agglutination and anti-globulin agglutination. - Latex agglutination (immunologic pregnancy test, rheumatoid factor latex test and CRP). Coagglutination, virus haenagglutination and heterophile antibodies agglutination tests.
Session 24 (Week 24)	- Precipitation; tube precipitation, agar gel diffusion. - Precipitation in agar with an electric field; immunoelectrophoresis and Western Blot test.
Session 25 (Week 25)	- Complement fixation, toxin antitoxin neutralization and virus neutralization. - Immunofluorescence (direct, indirect) and ELISA.



	- Radioimmunoassay and immunochromatographic technique.
Session 26 (Week 26)	- Assessment of the immune competence; assessment of B cell competence, assessment of T cell competence, assessment of phagocytic functions and assessment of complement. - Type one hypersensitivity mechanism and diagnosis. - Automated Procedures - Instrumentation.
(Week27& 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.

Bioinformatics

1	Course name	Bioinformatics
2	Course Code	MG306
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Molecular biology
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief description:

After completing the course, the student is expected to be able to Knowledge and understanding the usefulness of computer skills when analyzing genomics data, Be familiar with the most common databases and bioinformatics software and their functions, give an overview of the various bioinformatic tools used in sequence analysis. In addition, Compare groups with different phenotypes in terms of protein expression.

Textbooks and References:

1. Attwood T, Parry-Smith DJ (2001) Introduction to Bioinformatics. Pearson Education
2. Claverie JM, Notredame C (2003) Bioinformatics for Dummies. John Wiley & Sons
3. Mount DW (2001) Bioinformatics: Sequence and Genome Analysis. Cold Spring Harbor Laboratory Press



	4. Singh HB (2016) Intellectual Property Issues In Biotechnology. CABI
Course Description	This course is designed to give students both a theoretical background and a working knowledge of the techniques employed in bioinformatics. Emphasis will be placed on biological sequence (DNA, RNA, protein) analysis and its applications.
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	At the end of the course, students will be able to do the following: <ul style="list-style-type: none"> - Apply reasoning about core biological concepts with emphases on the cellular and molecular scale of biology. - Design, implement and evaluate computer-based systems, processes, components or programs in relation to the contexts of molecular and cellular biology and genomics research. - Analyze and evaluate bioinformatics data to discover patterns, critically evaluate conclusions and generate predictions for subsequent experiments. - Communicate biological information relating to bioinformatics in both written and oral forms. - Work competently in a group on biological concepts in relation to bioinformatics <p>Demonstrate comprehension of basic concepts of biological literacy.</p>
Course Assessments	Assignment 1: 40 % Final Exam: 60% 50% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.
Content Breakdown	Topical Coverage
Session 1 (Week 1) & Session 2 (Week 2)	-What is the bioinformatics -The history -Applications
Session 3 (Week 3) Session 5 (Week 5)	Bioinformatics data bases: -Accessing molecular genetics information through the internet: *Nucleotide sequence databases (Gene Bank – EMBL – DDBJ) *Protein sequence databases (Uniprot.) *Sequence motif database *Protein structure databases (Lap: finding information in online databases)
Session 6 (Week 6) Session 8 (Week 8)	Sequence Alignment : -Some definitions: similarity and homology -Types of divergence



	<ul style="list-style-type: none"> -Conserved region -Substitution score -Insertion/ deletion score -Pairwise alignment -Gaps (Lap: Pairwise sequence alignment)
Session 9 (Week 9) Session 11 (Week 11)	Data base searching: BLAST <ul style="list-style-type: none"> -Theory: how it works and evaluating results -Specialized BLAST sites -Using BLAST for gene discovery -Advanced BLAST (Lap: BLAST search)
Session 12 (Week 12) & Session 13 (Week 13)	Multiple sequence alignment (Lap: using online multiple sequence alignment tools)
Session 14 (Week 14)	Midterm exam
Session 15 (Week 15) Session 17 (Week 17)	Molecular phylogenetic analysis: <ul style="list-style-type: none"> - Introduction to molecular evolution -Why phylogenetic? Introduction to the basics: -Tree nomenclature and structure -How to construct a Tree in 4 steps, the differences between Parsimony, Distance and likelihood algorithms (Lap: construction pf phylogenetic tree (MEGA 3) or other software
Session 18 (Week 18) & Session 19 (Week 19)	<ul style="list-style-type: none"> -mRNA and gene expression introduction, Unigene.
Session 20 (Week 20) & Session 21 (Week 21)	<ul style="list-style-type: none"> -Differential expression, -Normalization -Clustering -Gene pattern
Session 22 (Week 22) & Session 23 (Week 23)	<ul style="list-style-type: none"> -Statistics for differential expression, multiple testing -Finding differentially expressed genes
Session 24 (Week 24) Session 26 (Week 26)	<ul style="list-style-type: none"> -Characterizing eukaryotic genomes -Human variation/ mutation and disease -Linking genes and disease -Protein bioinformatics
(Week 27&28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed.



	Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Research Methodology

1	Course name	Research Methodology
2	Course Code	MG307
3	Course type: /general/specialty/optional	General
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	-
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	This course focuses on the framework of the research process and to the use of basic statistics in the health field and the interpretation of results for improvement of levels of care an evaluation of action taken
Textbooks and References	- Fundamental of Research Methodology and Statistics - - Research-Methods-in-Education-sixth-edition
Course Duration	28 weeks
Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
Course Objectives:	Upon completion of this course, the students will have reliably demonstrated the ability to: <ul style="list-style-type: none"> a. Utilize the steps of the research process. b. Recognize the importance of statistical analysis in their field of work c. Utilize descriptive statistics to analyze data from Medical Science project. Learning outcomes Knowledge and understanding: <ul style="list-style-type: none"> - Develop awareness on the importance of research in building nursing knowledge and guiding practice. - Discuss the research process and each of its steps. - Describe the characteristics of a researchable problem.



	<ul style="list-style-type: none"> - Recognize how to state research aim, questions and hypotheses. - Recognize the different types of research design. - Identify different methods of data collection. - Recognize sampling technique. Cognitive skills (thinking and analysis).
Course Assessments	Assignment 1: 10.% Assignment 2: 20% Final Exam: 60% Daily Assessments: 10% A 50 % is required for a pass in this course.
Content Breakdown	Topics Coverage
Session 1 (Week 1)	introduction: <ul style="list-style-type: none"> - Definition of scientific research - Types of research
Session 2 (Week 2)	Research Methodology: <ul style="list-style-type: none"> -Definition and identification of the problem. Ethical issues in research - Formulation of the hypothesis
Session 3 (Week 3) & Session 4 (Week 4)	<ul style="list-style-type: none"> - Sample & Sampling Collection of information - Presentation of the results - Interpretation of the results - Conclusion and recommendations
Session 5 (Week 5)	Research Methods: <ul style="list-style-type: none"> - Scientific observation. - Questionnaire. - Interview.
Session 6 (Week 6)	A. The empirical phase <ol style="list-style-type: none"> 1. Measurement and the assessment of quantitative data <ol style="list-style-type: none"> a. Definition of measurement b. Levels of measurement c. Advantages of measurement
Session 7 (Week 7)	2. Reliability <ol style="list-style-type: none"> a. Three important aspects of reliability (stability, internal consistency and equivalence)
Session 8 (Week 8)	3. Validity <ol style="list-style-type: none"> a. Three important aspects of validity (content validity, criterion- related validity & construct) b. Sensitivity and specificity B. The Analytical phase
Session 9 (Week 9) & Session 10 (Week 10)	1. Analyzing the quantitative and qualitative data <ol style="list-style-type: none"> a. Descriptive data analysis b. Inferential data analysis c. Classification of statistics d. Criteria for selecting statistical tool
Session 11 (Week 11)	D. Writing the final research report (handout on research report) (Format will be given to the students during the discussion)
Session 12 (Week 12) & Session 13 (Week 13)	E. Critiquing of research reports <ol style="list-style-type: none"> a. Guidelines for use in critiquing reports
Session 14 (Week 14)	Midterm Exam
Session 15(Week 15)	Writing the thesis report:



	Title
Session 16 (Week 16)	Acknowledgement Table of content
Session 17 (Week 17) & Session 18 (Week 18)	Summary
Session 19 (Week 19)	Introduction
Session 20 (Week 20)	Aim of the study
Session 21 (Week 21)	Material and Methods
Session 23 (Week 23)	Results and Discussion
Session 24(Week 24)	Conclusion Recommendations
Session 25 (Week 25)	Appendices
Session 26 (Week 26)	References
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Biomedical Genetics

1	Course name	Biomedical Genetics
2	Course Code	MG400
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Molecular biology
7	Program offered the course	Medical Genetics
8	Instruction Language	English



9	Date of course approval	2022
Brief description	The Biomedical Genetics course differs from human genetics in that human genetics is a field of scientific research that may or may not apply to medicine, but medical genetics refers to the application of genetics to medical care. The study of the etiology, pathogenesis, and natural history of diseases and disorders that are at least partially genetic in origin	
Textbooks and References:	Human genetics : concepts and applications. Eleventh edition, International student edition : New York : McGraw Hill Education : [2015]. : xx, 439, 6, 13 s. : ISBN: 9781259095634	
Course Duration	28 weeks	
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning	
Course Objectives:	<ul style="list-style-type: none"> - The course serves as a basis for further higher studies in this field such as Master, Ph.D. and M.Phil. Degree . - The course is beneficial to know the genetic basis of diseases and prevention, understand molecular mechanisms through which genes cause diseases, knowledge of ethical issues in genetics and genetic counseling, opportunities to participate in R&D projects, and develop clinical and laboratory research skills . - The students can also become biomedical scientists, and then they can conduct research in a clinical setting, identifying diseases and problems that can be studied in the laboratory. - They can become faculty members in universities/colleges, where they have good scopes for jobs. 	
Course Assessments	Assignment 1: 40 % Final Exam: 60% 60% is required for a pass in this course. Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.	
Content Breakdown	Topical Coverage	
Session 1 (Week 1)	Introduction of Inborn Errors of Metabolism	
Session 2 (Week 2)		
Session 3 (Week 3)	Disorders of Amino Acid and Branched-Chain Amino Acid Metabolism	
Session 5 (Week 5)		
Session 6 (Week 6)	Urea Cycle Disorders	
Session 7 (Week 7)		
Session 8 (Week 8)	Disorders of Carbohydrate Metabolism	
Session 9 (Week 9)		



Session 10 (Week 10) Session 11 (Week 11)	Disorders of Steroid Metabolism
Session 12 (Week 12) Session 13 (Week 13)	Disorders of Lipid Metabolism. LDL receptor defects
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Lysosomal Storage Disorders
Session 16 (Week 16) & Session 17 (Week 17)	Disorders of Purine/Pyrimidine Metabolism Disorders of Porphyrin Metabolism
Session 18 (Week 18)	Organic-Acid Disorders
Session 19 (Week 19)	Disorders of Copper Metabolism
Session 20 (Week 20)	Peroxisomal Disorders
Session 21 (Week 21) Session 24 (Week 24)	Disorders Affecting Mitochondrial Function
Session 25 (Week 25) & Session 26 (Week 26)	Prenatal Diagnosis of Inborn Errors of Metabolism
(Week 27 & 27)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.



Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.
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Human Cytogenetics

1	Course name	Human Cytogenetics
2	Course Code	MG401
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	Human genetics
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief description	This lecture and laboratory course will focus on human chromosome structure, methodology, and techniques for the visualisation of chromosome aberrations. Chromosome abnormalities will be discussed from the clinical and cytogenetic viewpoint. The course will also cover current topics in Cytogenetics, including new methodologies and their use in clinical genetics and research.
Textbooks and References:	Steven L. Gersen, Martha B. Keagle, The Principles of Clinical Cytogenetics, Springer New York, 2013. Mark Hon Fong L., Medical Cytogenetics, CRC Press 2000.
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	Students gain knowledge on: 1 :Evolution of various chromosomal aberrations (structural and numerical), their applications in alien gene transfer and hybrid seed development. 2 :pollen culture in haploid development and development of diploid inbreds or hybrids or doubled isogenic lines from haploids that has got important applications in plant breeding. 3 :Cytogenetic tools such as FISH and GISH (Genomic In Situ Hybridization) techniques, that rely on "painted chromosomes" approach, the behavior



	<p>of individual genomes, individual chromosomes, or chromosomal fragments in natural and artificial hybrids (particularly allopolyploids) can be analyzed.</p> <p>4: Important application of plant cytogenetics in validation of physical maps and guiding efficient choice of bacterial artificial chromosomes for sequencing of genomes using chromosome walking and chromosome jumping.</p>
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction to cytogenetics
Session 2 (Week 2) Session 3 (Week 3)	Heterochromatin, euchromatin, and the nucleosome
Session 4 (Week 4) Session 5 (Week 5)	Chromosome replication, segregation, and the centrosome
Session 6 (Week 6) & Session 7 (Week 7)	Numerical Abnormalities Structural Chromosome Abnormalities Mechanisms of structural Abnormalities
Session 8 (Week 8)	Sex chromosomes
Session 9 (Week 9) Session 11 (Week 11)	X chromosome inactivation Sex chromosome abnormalities
Session 12 (Week 12) & Session 13 (Week 13)	Sample collection, culture, and harvest Harvesting of cells for chromosome analysis
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Slide preparation and solid staining
Session 16 (Week 16)	Microscope analysis and diagnosis
Session 17 (Week 17) & Session 18 (Week 18)	Heterochromatin, euchromatin, and the nucleosome
Session 19 (Week 19)	Karyotype Analysis and nomenclature
Session 20 (Week 20)	Microdeletion syndromes
Session 21 (Week 21)	Molecular cytogenetics methods-FISH, CGH, SKY, etc
Session 22 (Week 22)	Cytogenetics of Cancer (Leukaemia)



Session 23 (Week 23)	Cytogenetics of Cancer (Solid Tumours)
Session 24 (Week 24)	Chromosome Breakage and Instability Syndromes
Session 25 (Week 25)	Epigenetic mechanisms and Genomic Imprinting disorders
Session 26 (Week 26)	Model organisms- fruit fly, mouse, primates
(Week 27 & 27)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavour to provide notice of changes to students as soon as possible. Timetable may also be revised.

Nutrigenetics and Pharmacogenetics

1	Course name	Nutrigenetics and Pharmacogenetics
2	Course Code	MG402
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Human genetics
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
	Brief description	- Nutrigenomics: Molecular control of nutrient homeostasis. Hormonal appetite control. Regulation of nutrient mediated gene expression. Nutrient sensors pathways. Relationship between the deregulation of molecular metabolism and the development of food related diseases. Identification of therapeutic targets for the development of drugs for application in metabolic disorders.



	<ul style="list-style-type: none"> - Pharmacogenomics: Therapeutic targets and biomarkers. Genomics applied to drug development: identification of therapeutic targets. Genomics applied to the identification of diagnostic biomarkers prognosis and monitoring of responses to drugs. Microarray technology applied to Pharmacogenomic studies.
Textbooks and References:	<ul style="list-style-type: none"> • Yui-Wing Francis Lam and Stuart R. Scott (2018): Pharmacogenomics: Challenges and Opportunities in Therapeutic Implementation. Academic Press, 2nd ed. • Zdanowicz, M.M. (2010): Concepts in Pharmacogenomics. American Society of HealthSystem Pharmacists, Bethesda, EEUU. • Innocenti, F., Schaik, R. (2013): Pharmacogenomics. Springer, 2nd ed. • de Lorenzo, D, Serrano, J, Portero-Otín, M, Pamplona, R (2011): Nutrigenómica Nutrigenética: Hacia la nutrición personalizada. Libbooks • Bouchard, C. y Ordovás, J.M. (2012): Recent Advances in Nutrigenetics and Nutrigenomics.
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	<p>At the completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> - Learn the concept of nutrigenomics and nutrigenetics. - The importance of nutrition and its affects on gene expression. - Learn nutrient and gene interactions as they relate to disease prevention and intervention. - Describe the basic principles of genetics, such as single gene inheritance, independent assortment, linkage, and genetic variation. - Explain how the genome conveys information to the rest of the body (the central dogma of molecular biology). - Relate genetic polymorphisms to the function of various types of proteins, their role in disease development and therapeutics. - Identify economic and policy considerations relevant to pharmacogenomics. - Explain scientific procedures and techniques frequently performed in Pharmacogenomic research. - Apply genetic, cell, molecular, and biochemical concepts presented in the course to analyze and interpret genomic data.
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Part A: MOLECULAR NUTRITION AND NUTRIGENOMICS

	-Basic concepts of nutrigenomics and nutrigenetics. Genes, diet and human evolution. -Basic notions of nutrition
Session 2 (Week 2)	-Control of glucose homeostasis. Nutrient sensing pathways. Regulation of glucose-dependent genetic expression: ChREBP.
Session 3 (Week 3)	-Control of lipid homeostasis. Regulation of lipid mediated gene expression: SREBP, LXR, FXR and PPAR.
Session 4 (Week 4) Session 5 (Week 5)	Regulation of micronutrient mediated expression.
Session 6 (Week 6) Session 7 (Week 7)	Part B: NUTRIGENETICS AND PERSONALIZED NUTRITION. -Genetic determinants of alcohol and caffeine metabolism.
Session 8 (Week 8) Session 9 (Week 9)	-Design of nutrigenetic studies. Causality models and biases. Definition and calculating of genetic predisposition to a disease. GWAS studies. Genetic risk score calculation. Geneenvironment interaction.
Session 10 (Week 10) Session 11 (Week 11)	Polymorphisms of predisposition to cardiovascular disease and diabetes and their interactions with diet
Session 12 (Week 12)	Polymorphisms predisposition to obesity. Molecular pathways of appetite regulation. Functionality of adipose tissue. Polymorphisms that regulate basal metabolic expenditure and the response to the hypocaloric diet.
Session 13 (Week 13)	Polymorphisms that determine the response to fat and carbohydrate intake. Role of lipoproteins.
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	Part C: FUNDAMENTALS OF PHARMACOGENOMICS -Introduction to pharmacogenomics
Session 16 (Week 16)	-Pharmacogenomics and Pharmacokinetics. Drug metabolism.
Session 17 (Week 17)	-Pharmacogenomics and Pharmacokinetics. Drug transport.
Session 18 (Week 18)	Pharmacogenomics and pharmacodynamics.
Session 19 (Week 19)	Pharmacogenomics, pharmacogenetics and personalized medicine
Session 20 (Week 20) Session 21 (Week 21)	Part D: PHARMACOGENOMICS AND NEW DRUGS -Pharmacogenomics and development of new drugs. -Pharmacogenomics and clinical trials.
Session 22 (Week 22)	Part E: APPLICATIONS OF PHARMACOGENOMICS TO THERAPY -Cardiovascular and haematological diseases.
Session 23 (Week 23)	-Oncological diseases.
Session 24 (Week 24)	-Autoimmune diseases
Session 25 (Week 25) Session 26 (Week 26)	-Central nervous system diseases. -Infectious diseases. -Respiratory diseases.
(Week 27 & 27)	Final Exam



Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Assisted Reproductive Technology

1	Course name	Assisted Reproductive Technology
2	Course Code	MG403
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	6 units
5	Educational hours	6 hours
6	Pre-requisite requirements	Human reproduction and Embryology
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description	The course deals with the basic principles and methods used in the science of assisted fertility techniques, which include diagnosing the causes of defects in the fertilization process, methods of collecting clinical samples in the correct ways, laboratory tests necessary for their diagnosis, and how to interpret their results and determine the appropriate treatment for them.
	Textbooks and References:	The Art & Science of Assisted Reproductive Technology 1st Edition
	Course Duration:	28 weeks
	Delivery	Lecture-based, Group interaction and discussion, self-directed activities, active participation, Laboratory experiments.....etc.
	Course Objectives:	Upon completion of this course, the student will have reliably demonstrated the ability to:



	<ol style="list-style-type: none"> 1. Defining the concept of assisted reproductive techniques. 2. Familiarity with the methods used for collecting the various samples, methods of transporting them, and detecting the presence of a specific defect. 3. Performing various diagnostic analyzes and interpreting the relevant results
Course Assessments:	Assignment 1:10% Assignment 2:30% Final Exam: 60% A 60% is required for a pass in this course.
Content Breakdown	Topical Coverage
Session 1 (Week 1) Session 4 (Week 4)	Examinations for men - medical history - Clinical examination - Diagnostic examination - Semen examination
Session 4 (Week 4) Session 6 (Week 6)	- Assessment of the ability of sperm to fertilize - Immune system tests
Session 7 (Week 7) Session 9 (Week 9)	- Microbiological examinations - Hormonal tests
Session 10 (Week 10) Session 13 (Week 13)	- Genital examinations - Tests for abnormalities in sexual intercourse or ejaculation - Genetic or chromosomal examinations
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15) & Session 16 (Week 16)	check-ups for women - hormonal examination - smear from the vaginal wall - Cervical variant examination
Session 17 (Week 17) Session 19 (Week 19)	- Microbiological laboratory analyzes and blood tests - Ultrasound device
Session 20 (Week 20) & Session 21 (Week 21)	- Colored uterine rays - Ultrasound imaging of the uterus and detection of fallopian tubes
Session 22 (Week 22) Session 24 (Week 24)	- Fallopian tube endoscopy - Post-coital examination - uterine lining
Session 25 (Week 25) & Session 26 (Week 26)	- Immune system tests - Genetic or chromosomal examinations
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric,



	computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Medical Biotechnology

1	Course name	Medical Biotechnology
2	Course Code	MG404
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Human Genetics
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description	After completing the course, the student is expected to be able to Knowledge and understanding the Identify and differentiate broad and coherent knowledge associated with the principles and concepts of cell and molecular biology. Moreover, Demonstrate skills in analyzing, interpreting and synthesizing data, methodologies and other information.
Textbooks and References :	JF. Anthony, R. Susan. Stryer. Introduction of Genetics analysis.
Course Duration	28 weeks
Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
Course Objectives:	On successful completion of this course students will be able to: <ul style="list-style-type: none"> - Identify and differentiate broad and coherent knowledge associated with the principles and concepts of cell and molecular biology. - Demonstrate skills in analyzing, interpreting and synthesizing data, methodologies and other information. - Exercise critical thinking and independent problem solving in experimental design and data analysis. - Communicate knowledge and ideas clearly and coherently to others.



	<ul style="list-style-type: none"> - Consolidate and synthesize how specific knowledge and skills in cell and molecular biology are applied in the development of scientific works and completion of practical exercises. - Appreciate the role relevance and ethical implications of science in society.
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1) Session 3 (Week 3)	DNA Technology and Applications
Session 4 (Week 4) Session 6 (Week 6)	Structure of a gene DNA Cloning and PCR
Session 7 (Week 7) Session 9 (Week 9)	Techniques of DNA Analysis- Nucleic acid probes, Nucleic acid hybridization assays
Session 10 (Week 10) & Session 11 (Week 11)	DNA Sequencing – Sanger, and massively parallel
Session 12 (Week 12) & Session 13 (Week 13)	Application of DNA sequence polymorphisms- SNPs, VNTRs, Minisatellites, Microsatellites
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15) Session 17 (Week 17)	Mapping and Identifying Genes for Monogenic Disorders
Session 18 (Week 18) & Session 19 (Week 19)	Position-Independent Identification of Human Disease Genes Positional Cloning
Session 20 (Week 20) Session 22 (Week 22)	<ul style="list-style-type: none"> • The Human Genome Project and its Applications
Session 23 (Week 23) Session 25 (Week 25)	Microarray in research and clinical practice
Session 26 (Week 26)	Review
(Week 27 & 27)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed.



	Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

Immunogenic and Tumorigenic

1	Course name	Immunogenic and Tumorigenic
2	Course Code	MG405
3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Pathology + Immunology + Human Genetics
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022
	Brief Description	After completing the course, the student is expected to be able to Knowledge and understanding the Identify and differentiate broad and coherent knowledge associated with the principles and concepts of cell and molecular biology. Moreover, Demonstrate skills in analyzing, interpreting and synthesizing data, methodologies and other information.
	Textbooks and References:	1- Lodish et al., 2004. Molecular cell biology. 5th Hondsmls, Basingstoke, English (Chapter 23). 2- Nussbaum. R, et al., 2007. Genetics in medicine. 7th . Saunders, an imprint of Elsevier Inc. (Chapter 16).
	Course Duration	28 weeks
	Delivery	Lecture; Question Answer; Problem Solving; Discussion; Case Study; Role Play Brainstorming; Six Hats Thinking; Opinion Pool; Debate; Workshop Project Based Learning; Problem Based Learning; Storyline; Scenario Based Learning; Brain Based Learning; Case Based Learning
	Course Objectives:	After completing this course, students will learn: - understanding of basic aspects of the structure and functions of the immune



	<p>system</p> <ul style="list-style-type: none"> - Define the genetic systems that encode molecules with integral roles in immune regulation - understand the cellular and molecular interaction of the immune responses. - Assess the impact of allelic polymorphism in certain genes on features such as gene expression and MHC restriction - Define the basic mechanisms for expansion of the immunologic repertoire of antigen receptors - Understand the implications of population differences in the frequencies of genes involved in immune responses
Course Assessments	<p>Assignment 1: 40 %</p> <p>Final Exam: 60%</p> <p>60% is required for a pass in this course.</p> <p>Homework & Assignments Students will be required to read chapters in their textbook, handouts, and any other material necessary for the course. Instructors are encouraged to use and design any assignment that may be beneficial to the student-learning outcome.</p>
Content Breakdown	Topical Coverage
Session 1 (Week 1)	Introduction of Cancer
Session 2 (Week 2)	Differentiation between Genetic and Environmental
Session 3 (Week 3) & Session 4 (Week 4)	Factor in Cancers
Session 5 (Week 5)	Oncogenes
Session 6 (Week 6)	Tumor Suppressor Genes
Session 5 (Week 5) & Session 6 (Week 6)	Epigenetics and Cancer
Session 7 (Week 7) Session 9 (Week 9)	Genetics of Common Cancers
Session 10 (Week 10) & Session 11 (Week 11)	Genetic Counseling in Familial Cancer
Session 12 (Week 12) & Session 13 (Week 13)	Tumor profiling in cancer and identifying targets for drug therapy
Session 14 (Week 14)	Midterm Exam
Session 15 (Week 15)	<p>Introduction</p> <ul style="list-style-type: none"> • Principle concept of immunology • Humoral immune response



	<ul style="list-style-type: none"> • Immunoglobulins • Antigen-antibody interaction
Session 16 (Week 16)	Immunogenetics and immunogenomics: <ul style="list-style-type: none"> • Immunogenetics definition • Immunological tolerance and memory
Session 17 (Week 17)	Overview of Immunogenetics: <ul style="list-style-type: none"> • Structure, • Organization, • Polymorphism, • Evolution • Selection • Associations with disease.
Session 18 (Week 18)	Genetic control of immune responses.
Session 19 (Week 19)	Genetics of transplantation
Session 20 (Week 20)	Molecules at the host and pathogen inter-phase and their genes
Session 21 (Week 21)	Genetics of antigen presentation.
Session 22 (Week 22)	Immunogenomic and its analysis.
Session 23 (Week 23)	Immunogenetics of vaccination
Session 24 (Week 24)	Microarray in research and clinical practice
Session 25 (Week 25)	Immunogenetics of tumors
Session 26 (Week 26)	Applications of Immunogenetics techniques
(Week 27 & 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a lecturer's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
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Project Graduation

1	Course name	Project Graduation
2	Course Code	MG406

3	Course type: /general/specialty/optional	Specialty
4	Accredited units	4 units
5	Educational hours	4 hours
6	Pre-requisite requirements	Research Methodology
7	Program offered the course	Medical Genetics
8	Instruction Language	English
9	Date of course approval	2022

Brief Description:	After completing the course, the student is expected to be able to Knowledge and understanding the communicate effectively both orally and in writing; to be able to author and comprehend written reports, to be able to prepare design and implementation reports, to present effectively, to be able to give and receive clear and comprehensible instructions.
Textbooks and References:	The students will use different resources.
Course Duration	28 weeks
Course Objectives:	<ul style="list-style-type: none"> • Define the Principles of research planning and design • Describe principles of basics of experimental design and analysis. • Identify suitable research topics. • Undertake independent research. • Be able to do Critical review and analysis of related literature. • Design research study • Perform method validation and presentation of research report. • Write the research proposal and theses. • Demonstrate appropriate communication skills. • Present clearly and effectively scientific topic in a tutorial or a staff meeting. • Work separately or in a team to research and prepare a scientific topic.
Course Assessments	PPT Slides -End of semester after presentation
Content Breakdown	Topical Coverage
Session 1 (Week 1) Session 26 (Week 26)	<p>Development of a research protocol Fieldwork and data analysis</p> <ul style="list-style-type: none"> - The research project course involves the generation of new scientific information and a review and understanding of the scientific literature. - The research may be conducted in a laboratory, hospital, community laboratories, different company, etc., depending on the project and the supervisor. - Students are divided into groups and each group is working together. - Students are expected to work approximately 56 hours. This will include working in the laboratory, etc., reading or searching literature, and writing up the research project. - Fields of study available may include: <ul style="list-style-type: none"> o Biomedical genetics o Immunogenic



	<ul style="list-style-type: none"> o Cancer genetics o Biochemistry o Genetics Diagnosis o Embryology
Session 27 (Week 27) Session 28 (Week 28)	Final Exam
Attendance Expectations	Students are expected to attend every session of class, arriving on time, returning from breaks promptly and remaining until class is dismissed. Absences are permitted only for medical reasons and must be supported with a doctor's note.
Generic Skills	The faculty is committed to ensuring that students have the full range of knowledge and skills required for full participation in all aspects of their lives, including skills enabling them to be life-long learners. To ensure graduates have this preparation, such generic skills as literacy and numeric, computer, interpersonal communications, and critical thinking skills will be embedded in all courses.
Course Change	Information contained in this course outline is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational employment and marketing needs. The instructor will endeavor to provide notice of changes to students as soon as possible. Timetable may also be revised.

