



**CURRICULUM OF
COLLEGE OF MEDICINE
UNIVERSITY OF MOSUL
2022-2023**

**منهاج كلية الطب
جامعة الموصل
٢٠٢٢-٢٠٢٣**

Curriculum of
College of Medicine
University of Mosul
(CMUM)
2022-2023



Prof. Dr. Basil Mohammednather
Saced
The Dean

أ.د. باسل محمد نذير سعيد
العميد

المنهاج الدراسي
كلية الطب / جامعة الموصل
٢٠٢٢-٢٠٢٣

اشراف

الأستاذ الدكتور باسل محمد نذير سعيد/ عميد كلية الطب
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كلمة السيد عميد كلية الطب

بسم الله الرحمن الرحيم

الاعزاء جميعا،

السلام عليكم ورحمة الله وبركاته،

نضع بين أيديكم المنهاج الدراسي لكلية الطب، شاملا كافة المراحل الدراسية، وقد أتى بالتفصيل على مفردات كل مادة من المواد التي يدرسها الطالب حتى تخرجه.

وضع هذا المنهاج بما يتوافق مع رؤية كلية الطب ويعبر عن رسالتها لتخريج أطباء مهرة وعلماء وباحثين في مختلف الاختصاصات.

كما حرصنا على ان يكون المنهاج مواكبا للتطورات والتحديثات العلمية المتسارعة في جميع الميادين ليتمكن الطالب من مواصلة التعليم المستمر بعد تخرجه.

جاء في هذا الكتيب تفصيلا لعدد الوحدات النظرية والعملية لكل مادة لجميع المراحل على شكل جداول. كذلك تم وضع وصف دقيق لجميع المحاضرات النظرية والساعات العملية التي يدرسها الطالب خلال مسيرته من المرحلة الاولى الى المرحلة السادسة.

وفي الختام نشي على لجنة المناهج في كليتنا على جهودها الدؤوب والمتواصل لإكمال تهيئة وتعديل المنهاج وكتابته بالشكل الذي نتمنى أن يكون واضحا وذافائدة للمطلعين حيث أن المنهاج متاح للجميع.

ونسأل الله التوفيق.

الأستاذ الدكتور باسل محمد نذير سعيد

عميد كلية الطب جامعة الموصل



كلمة السيد معاون العميد للشؤون العلمية

طلبتنا الأعرء وخرجي كليتنا الافاضل:

نضع بين ايديكم نسخة كاملة ومنقحة من المنهاج الدراسي الكامل والمواضيع المفصلة لكلية الطب/جامعة الموصل للعام الدراسي ٢٠٢٢-٢٠٢٣. اذ يضم الكتيب جميع المراحل الدراسية وموادها بالإضافة الى عدد الساعات والوحدات الدراسية لكل مادة. الاطلاع على هذه المعلومات يعطيكم فكرة عامة عما يتم تدريسه في كل مرحلة ونسبة الدرجة لكل مادة الى المعدل الموزون في المراحل كافة وكذلك المعدل التراكمي للخريجين. راجين لكم التوفيق والتفوق دائما.

أ.م. د. همام غانم ابراهيم زبير

معاون العميد للشؤون العلمية



كلمة السيدة نائب رئيس لجنة المناهج والمشرفة على الاعداد

ان اعداد المناهج العلمية من اهم أولويات الجامعات والكليات. والهدف الرئيسي لكل كلية بجميع مفاصلها ولجانها هو محاولة تطبيق هذا المنهاج بأدق صورة وأفضلها.

بعد جهود مضية للجنة المناهج، وبإشراف السيد العميد والسادة معاونيه والسادة والسيدات رؤساء الفروع، تمكنا من إكمال إعادة كتابة المنهاج وتحديثه بعد سنة على آخر اصدار له. وقد راعينا الشمولية والدقة في وصف المحاضرات وما تحتويه من مواد علمية مفصلة لمواكبة التحديث وتراكم المعرفة في فروع الطب المختلفة بما يتوافق مع المناهج المتقدمة لأرقى كليات الطب العالمية.

تصدرت الكتيب رسالة الكلية التي تحتوي على الأهداف والرؤية، كما اضيف له وصف المقرر الذي يتضمن تفاصيل تنفيذ المنهاج، كذلك المخرجات المتوقعة من المنهاج لكل فرع

تجد في هذا الكتيب عدد الوحدات النظرية والعملية وما يقابلها من ساعات دراسية.

بلغ عدد الوحدات الكلي (النظرية والعملية) ٢٥٧ وحدة لست سنوات دراسية،

قمنا بالإشارة إلى الكتب المنهجية المعتمدة والتي تفضل بتحديد رؤساء الفروع، والاشارة الى رابط الكلية لاطهار المحاضرات

نتمنى لكلية الطب/ جامعة الموصل مزيدا من الارتقاء والتقدم لتستعيد مكانتها العلمية الرفيعة بين أرقى كليات الطب في جامعات العالم.

ومن الله التوفيق.

أ.م.د. أروى محمود فوزي الصراف

المعد للكتيب ونائب رئيس لجنة المناهج

الرسالة

تكمّن رؤية كلية الطب في سعيها الى ان تكون من الكليات الطبية الرائدة محليا واقليميا ودوليا من خلال توفير بيئة طبية تعليمية ذات جودة عالية وجو تعليمي محفز للإبداع والاعتماد على تدريسيين اكفاء في تدريس الطلبة وتبنيها برنامجا بحثيا لإنتاج ونشر المعرفة النظرية والتطبيقية ومشاركتها في تقديم الرعاية الصحية للمجتمع من خلال:

١- تعزيز روح الانتماء والاعتزاز بها لدى اعضاء الهيئة التدريسية وموظفيها وطلبتها وخريجها والتفاخر بها

٢- إعداد أطباء اكفاء يمتلكون المعرفة والمهارات الطبية الاساسية اللازمة لممارسة مهنة الطب وفقا للمعايير العالمية في مختلف الاختصاصات، ويتحلون بأخلاقيات المهنة الطبية ويحافظون على القيم الاجتماعية الأصيلة قادرين على التعلم الذاتي المستمر ومهيئين للتطوير المهني

٣- تطوير مهارات التواصل والبحث العلمي لدى طلبة كلية الطب

٤- التميز في الانتاج البحثي وبرنامج الدراسات العليا فيها وتسخيرها لخدمة المجتمع المحلي

٥- توثيق العلاقات وتقديم الخدمات للمجتمع المحلي والمؤسسات الصحية المحلية بهدف توفير العناية الصحية التي يكون المريض محورها

تعتمد كلية الطب على المنهج التقليدي في التدريس ويتخرج الطلاب بعد اجتياز الامتحان النظري والعملية لإثبات كفاءاتهم

وتعمل كلية الطب على تحقيق رسالتها من خلال تطوير وتحديث المناهج والبرنامج الأكاديمي والاستثمار الافضل لمواردها البشرية والمادية المتاحة وتسخيرها لخدمة العملية التعليمية والتدريبية فيها ودعم المستشفيات التعليمية وتفعيل برامج خدمة المجتمع وتنمية البيئة من خلال حملات التوعية والمؤتمرات والندوات العلمية والتعليم الطبي المستمر وعقد إتفاقيات التعاون مع جهات متعددة لرفع الكفاءة الطبية والبحثية للأطباء وأعضاء هيئة التدريس

The Mission

The vision of the College of Medicine lies in its attempt to be one of the leading medical colleges locally, regionally and internationally. By providing a high-quality educational medical environment and an educational atmosphere that stimulates creativity and relying on qualified teachers in teaching students and adopting a research program to produce and disseminate theoretical and applied knowledge and its contribution in providing health care to the community through:

1. Developing a spirit of belonging among the college's members, staff, students, and graduates.
2. Graduating competent physicians mastering the fundamental medical knowledge and skills necessary for practicing in the medical field of different specialties according to international standards as well as preserving the social value, being capable of self-learning and professional development.
3. Developing communication and scientific research skills for medical college students.
4. Promoting excellence in postgraduate studies and research that work for the local community
- 5- Strengthening relationships and Offering patient-centered healthcare to the local community and local health institutions.

The college of Medicine relies on the traditional curriculum in teaching and the students will graduate after passing the theoretical and practical exam to prove their competencies.

The College of Medicine accomplishes its mission by developing and updating the curriculum and the academic program and investing its available human and material resources in the educational and training process. It supports the educational hospitals, promotes community service programs, and develops the environment through awareness campaigns, conferences, scientific seminars, continuous medical education and cooperation agreements with multiple entities to advance medical and research efficiency for the college's affiliates.

مخرجات التعلم

مخرجات التعلم المتوقعة من خريج كلية الطب:

١. المعرفة والمهارة في العلوم الطبية الاساسية والسريرية
٢. امتلاك المهارات الكافية لاجراء التداخلات الطبية المنقذة للحياة في الحالات المرضية الشائعة والحالات الطارئة
٣. القابلية على العمل في المستشفيات والمؤسسات بعد اكتسابه المهارات الفنية التي تؤهله للقيام بذلك البرنامج
٤. امتلاك مهارات التواصل الفعال مع افراد المجتمع بكافة مستوياته
٥. الالتزام بمبادئ المسؤولية المهنية والاخلاقية في ممارسة مهنة الطب
٦. الدافعية للتعلم مدى الحياة.

The Learning Outcomes

Expected learning outcomes from the graduate of the college of medicine:

1. Knowledge and skill in basic and clinical medical sciences
2. Possessing sufficient skills to perform life-saving medical interventions in common medical conditions and emergencies
3. The capability of working in hospitals and institutions after acquiring the technical skills that qualify him to do this program
4. Possessing effective communication skills with members of society at all levels
5. Commitment to the principles of professional and ethical responsibility in the practice of the medical profession
6. Motivation for lifelong learning .

جدول عدد الوحدات

المرحلة	الوحدات النظرية	الوحدات العملية	مجموع الوحدات
المرحلة الأولى	٢٣	١٤	٣٧
المرحلة الثانية	٢٧	١٤	٤١
المرحلة الثالثة	٣٢	١٣	٤٥
المرحلة الرابعة	٣٢	١٤	٤٦
المرحلة الخامسة	٣١	١٣	٤٤
المرحلة السادسة	---	٤٤	٤٤
المجموع الكلي	١٤٥	١١٢	٢٥٧

FIRST YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Practical hours	Theoretical units	Practical units	Total units
1	Medical chemistry	60	60	4	2	6
2	Medical physics	45	60	3	2	5
3	Anatomy	60	120	4	4	8
4	Medical biology & genetics	60	60	4	2	6
5	Foundations of medicine	30		2		2
6	Computer	30	60	2	2	4
7	Human Rights and democracy	30		2		2
8	English language	30	60	2	2	4
	Total	345	420	23	14	37

SECOND YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Practical hours	Theoretical units	Practical units	Total units
1	physiology	150	90	10	3	13
2	Anatomy	60	180	4	6	10
3	Biochemistry	90	60	6	2	8
4	Histology	45	90	3	3	6
5	Embryology	30		2		2
6	Medical ethics	30		2		2
	Total	405	420	27	14	41

THIRD YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Practical & Clinical hours	Theoretical units	Practical & Clinical units	Total units
1	Pharmacology	90	60	6	2	8
2	Bacteriology	90	60	6	2	8
3	Parasitology	60	60	4	2	6
4	Pathology	120	120	8	4	12
5	Community Medicine	30	30	2	1	3
6	Medicine	60	60	4	2	6
7	Surgery	30		2		2
	Total	480	390	32	13	45

FOURTH YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Practical&Clinical hours	Theoretical units	Practical &Clinical units	Total units
1	Forensic medicine	60	60	4	2	6
2	Behavioral sciences	15		1		1
3	Community medicine	105	120	7	4	11
4	Obstetrics	60	90	4	3	7
5	Medicine	135	90	9	3	12
6	Surgery	90	60	6	2	8
7	Pediatrics	15		1		1
	Total	480	420	32	14	46

FIFTH YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Clinical hours	Theoretical units	Clinical units	Total units
1	Medicine	75	30	5	1	6
2	Psychiatry	45	30	3	1	4
3	Dermatology	30	30	2	1	3
4	Surgery	90	60	6	2	8
5	Ophthalmology	30	30	2	1	3
6	ENT	30	30	2	1	3
7	Pediatrics	60	60	4	2	6
8	Gynecology	60	60	4	2	6
9	Radiology	30	30	2	1	3
10	Family medicine	15	30	1	1	2
	Total	465	390	31	13	44

SIXTH YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Clinical hours	Theoretical units	Clinical units	Total units
1	Medicine	-	360	-	12	12
2	Surgery	-	360	-	12	12
3	Gynecology & Obstetrics	-	300	-	10	10
4	Pediatrics	-	300	-	10	10
	Total	-	1320	-	44	44

منهاج المرحلة الأولى

**FIRST YEAR
CURRICULUM**

تقسيم عدد الوحدات و الساعات للمرحلة الأولى

مجموع عدد الوحدات	عدد الوحدات العملية	عدد الوحدات النظرية	عدد الساعات العملية	عدد الساعات النظرية	المواد الدراسية	
٦	٢	٤	٦٠	٦٠	الكيمياء الطبية	١
٥	٢	٣	٦٠	٤٥	الفيزياء الطبية	٢
٨	٤	٤	١٢٠	٦٠	التشريح	٣
٦	٢	٤	٦٠	٦٠	الاحياء الطبية والوراثة	٤
٢		٢		٣٠	أساسيات الطب	٥
٤	٢	٢	٦٠	٣٠	الحاسبات	٦
٢		٢		٣٠	حقوق الإنسان والديمقراطية	٧
٤	٢	٢	٦٠	٣٠	اللغة الانكليزية	٨
٣٧	١٤	٢٣	٤٢٠	٣٤٥	المجموع	

FIRST YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Practical hours	Theoretical units	Practical units	Total units
1	Medical chemistry	60	60	4	2	6
2	Medical physics	45	60	3	2	5
3	Anatomy	60	120	4	4	8
4	Medical biology & genetics	60	60	4	2	6
5	Foundations of medicine	30		2		2
6	Computer	30	60	2	2	4
7	Human rights and democracy	30		2		2
8	English language	30	60	2	2	4
	Total	345	420	23	14	37

Medical Chemistry

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he/she has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Biochemistry	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 1 st year	
Title of the course	Medical chemistry	
Code	McBi 22 101	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 60	Total=120
	Theoretical hours=60	
Date of specification approval	14/11/2022	

General Aims of Course

This course includes the scientific building of knowledge, employing the ability and refining the skill in order to assimilate the scientific foundations in the topics of organic, inorganic and analytical chemistry and the foundations and priorities of biochemistry for the purpose of learning, understanding and comprehending the chemical reactions that occur inside the human body, both natural and pathological, and for later understanding the mechanism of diseases and their causes through the study of biochemistry and clinical Details, resulting from imbalances in natural chemical reactions and the means to repair them within the human body

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	1- Describe the bases of organic chemistry 2- Clarify important basics in analytical chemistry 3- Classify the bases of inorganic chemistry 4- Describe important basics in biochemistry 5- Assess the medical application of studying biochemistry
Intellectual Skills	1. Organize links between the materials produced from raw materials, understand their path, and try to transform them from their natural path to other paths for more benefit 2- Design the paths of transforming harmful produced substances into harmless substances, especially inside the body 3- Arrange and develop the means of analysis and selection of the resulting materials and increase their specialization
Professional Skills	1- Design how and the possibility of synthesizing a number of organic substances from their primary resources inside or outside the body 2 – Manage the analyzing and measuring of number of basic materials inside the body and analyzing different models
General and Transferable Skills	1-Summarize skills in the use of materials and equipment and the necessities that support them in verification, measurement and evaluation 2- Discuss with students practically, directing them and alerting them to the possible specialized dangers as a result of their work, especially for the unscheduled and inferred judgments from their activities in personal development and assigning distinctive abilities to be on the right track.
Attitude outcomes	the student will be able to recognize any problems in relation to the topics and act accordingly, the student will have the acknowledge for the importance of wearing gloves and mask in chemical lab

Course structure			
topic	No. Of lectures	No. Of labs	Lecturer
Organic chemistry and safety in the lab	20	4	Omar Mohammad Yahya
Carbohydrates	8	8	Zainab Mohammed

Biochemistry			Ali
Lipid Biochemistry	5	2	Saba Khairy Salih
Amino acid and protein Biochemistry	10	8	Maher Abdulsattar Ibrahim
Analytical chemistry and inorganic chemistry	13	5	Shaimaa Muyasser Nayif, Entesar Ahmed Sulliman
Enzymes Biochemistry	4	3	Saba Khairy Salih

Teaching and learning methods	
Theoretical lectures	2 lectures \week
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	Students are presenting about different topics in medical chemistry through seminars conducted by 3-5 students and encouraged to make scientific posters. They are subjected to discussion by teaching staff and colleagues.

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Fast quizzes at the end of lecture 2. Asking students to answer two or three questions (may be an MCQ), explain a mechanism or a finding and react with slides and discussion within the lecture minutes. 3. Electronic assignments to the class (using google forms) 4. Case interpretations in the lab (students will discuss some lab results to settle differential diagnosis) 5. Seminar discussion (the teacher and/or student select a topic and present it with thorough discussion).

Summative assessments	<p>1. End of term (1st. and 2nd.) exam in practical subjects using manual work (experiments) or oral examination. Students are rewarded 7.5% of total marks for each term.</p> <p>2. Final Exam in practical subjects (usually oral examination, spot examination or students are subjected to written assessment). Students are rewarded 10% of total marks.</p> <p>3. Mid-year and final written examinations in theoretical knowledge (student has to answer MCQ questions and short essay questions). Students are rewarded 25% and 50% of total marks respectively.</p>
Pass mark	50%

Resources and requirements	
Essential text books	<p>1. Textbooks for medical chemistry</p> <p>Chemical basis of life George H Schmid</p>
Recommended text books	<p>1.Principle of biochemistry David L. Nelson Michael M Cox</p>
Other resources	

Theoretical Lectures

Module: Organic Chemistry

- **Lecture 1: (Alkanes, Alkene, Alkyne)**
 - Saturated Hydrocarbons (Alkanes)
 - Isomerism
 - Reaction of alkane
 - Cycloalkanes
 - Unsaturated Hydrocarbons
 - Nomenclature of Alkenes
 - Geometric Isomerism in Alkenes
 - Cycloalkenes
 - Alkyne
 - Preparation
- **Lecture 2: (Aromatic Hydrocarbons)**
 - Structure
 - Naming Aromatic compounds
 - Monosubstituted Benzenes
 - Disubstituted Benzenes
 - Polysubstituted Benzenes
- **Lecture 3: (Alcohols and phenols)**
 - Classification and Naming of Alcohols and Phenols
 - Application to Biochemistry
 - Physical properties
 - Solubility
 - Preparation of alcohols Reaction of alcohols
 - Oxidation
 - Ester formation
 - Oxidation of alcohol in living system
- **Lecture 4: (Phenols and Ethers)**
 - Naming Phenols
 - Difference between alcohol and phenol
 - Ethers
 - Properties of ether
 - Cyclic ethers: Epoxides, oxirane
 - Chemistry in Action
- **Lecture 5: (Aldehydes and ketones)**
 - Naming of carbonyl compound
 - IUPAC
 - Physical properties
 - Preparation of carbonyl compound
 - The carbonyl groups
 - Test for aldehyde
- **Lecture 6: (Reaction of Carbonyl Compounds)**

- Oxidation reaction.
- Nucleophilic addition reaction.
- Base catalyzed reaction.
- Condensation reaction in living systems
- Application of biochemistry
- **Lecture 7: (Carboxylic acids)**
 - Classification of carboxylic acids
 - IUPAC naming
 - Preparation of carboxylic acid
- **Lecture 8: (Amines)**
 - Classification and naming of amines
 - Naming of amine
 - Substituted ammonium ions and quaternary ammonium ions
- **Lecture 9: (preparation of amines)**
 - Preparation amines in living system
 - Reaction of amines
- **Lecture 10: (Stereochemistry and stereoisomer)**
 - Chiral compound
 - Stereochemistry in living system
- **Lecture 11: (Meso stereoisomers)**
 - Resolution of Racemic mixture
 - Specification of configuration: R and S
- **Lecture 12: (Heterocyclic compounds)**
 - Six-Membered Rings
 - five-Membered Rings
- **Lecture 13: (The sulfa drugs)**
 - Sulfanilamide
 - Sulfanilamide analogues with reduced toxicity
- **Lecture 14: (Organic halides)**
 - Occurrence
 - Classifying organic halides
 - Physical properties
 - Substitution reactions of alkyl halides
- **Lecture 15: (Elimination reactions of alkyl halides)**
 - Substitution and Elimination reaction in living systems
 - Thiols

Module: Analytical and Inorganic Chemistry

- **Lecture 1:**
 - Chemical Bonds
 - Octet Rule
 - Ionic Compound
 - Ions
 - Covalent Bonds
 - Polar Covalent Bond

- Bonding Capacities of Atoms
- Resonance Theory
- **Lecture 2:**
 - Acids and Bases
 - Acids
 - Bases
 - Neutral Solution
 - Arrhenius Concept
 - Bronsted –Lowry Concept
 - The PH Scale
- **Lecture 3:**
 - Measuring of PH
 - Catalysis and catalyst
- **Lecture 4:**
 - Buffer Solution
 - Buffer Capacity
 - Acid-Base Balance in the blood
- **Lecture 5:**
 - Aqueous Solutions and Colloid
 - Solubility
 - Electrolytes and Non-Electrolytes
 - Arrhenius Theory of Electrolytes
- **Lecture 6:**
 - Osmosis and Osmosis Pressure
 - Osmosis Membrane
- **Lecture 7:**
 - Colloids and Colloidal Dispersion
 - Colloids
 - Dialysis in Living Systems
- **Lecture 8:**
 - Environment Pollution
 - Air Pollution
 - Air Pollutants
 - Health Effects
- **Lecture 9:**
 - Effect of Carbon Monoxide
 - Effect of Sulphur Oxide
 - Effect of NO
 - Effect of Ozone
- **Lecture 10:**
 - Radioactivity and Nuclear Chemistry
 - Alpha Emission
 - Beta Emission
 - γ -Emission
 - positron Emission
- **Lecture 11:**

- Effect of Radiation on the Living System
- **Lecture12:**
 - Nuclear Reaction
 - Nuclear Transmutation
 - Half Life
 - Radiation Dosage
- **Lecture 13:**
 - Nuclear Isotopes
 - Medical Uses of Nuclear Isotopes
 - Nuclear Reaction and Energy

Module: Chemical safety

- **Lecture 1: (Chemical safety)**
 - Introduction
 - Safety
 - Chemical Safety
 - Chemical Hazards
- **Lecture 2 : (Types of Chemical Hazard)**
 - Definition of chemical hazard
 - Types of chemical of hazard
- **Lecture 3: (Material Safety Data Sheets MSDS)**
 - MSDS
 - Hint
- **Lecture 4 (Reaction and Explosive)**
 - Reactive Chemicals
 - Chemical Laboratory Safety
- **Lecture 5: (Chemical Storage)**
 - General Storage

Module: BioChemistry(Carbohydrates)

- **Lecture 1:(Introduction to carbohydrates)**
 - Biochemistry Definition
 - Carbohydrates general formula
 - Origin of Carbohydrates
 - Importance of Carbohydrates
 - Functions of Carbohydrates
 - Classification of carbohydrates
- **Lecture 2: (Introduction to monosaccharide)**
 - Structure of monosaccharide
 - Trioses
 - Tetroses
 - Pentoses
 - Hexoses
 - Straight chain structure(Fisher projection)
 - Ring/cyclic structure(Haworth projection)

- Cyclization of glucose and fructose

□ **Lecture 3: (Classification of stereoisomers)**

- Isomers
- Stereoisomerism:
- D and L isomerism
- Optical isomerism
- Epimerism
- Anomersim

Lecture 4: (Chemical properties of monosaccharaides)

- Furfural formation
- Enolization / Tautomerization
- Oxidation (acid sugar formation)
- Glucuronic acid and its medical importance

□ **Lecture 5 : (Chemical reactions of monosaccharides)**

- Reduction
- Osazones formation
- Glycosides
- Deoxy Sugars
- Amino Sugars

□ **Lecture 6 : (Disaccharides)**

- Formation and Breakdown of Disaccharides
- Maltose
- Sucrose
- Lactose
- Trehalose
- Isomaltose

□ **Lecture 7: (Polysaccharides)**

- Functions of polysaccharides
- Starch (homopolysaccharides)
- Amylose (linear homopolysaccharides)
- Amylopectin (Branched homopolysaccharides)
- Glycogen (Branched homopolysaccharides)
- Cellulose
- Chitin
- Inulin

□ **Lecture 8 (Heteropolysaccharides)**

- Glycosaminoglycans
- Hyaluronic acid
- Chondroitin sulphate
- Heparin
- Dermatan sulphate
- Keratin sulphate
- Glycoprotein

□ **Lecture 1 Enzymes**

- Classification
- Importance
- (Enzymes as Biological Catalysts)
- Active site
- Lock-and-Key Model
- Induced Fit Model
- Apoenzyme and Holoenzyme
- Cofactor
- Structure of enzymes
- Enzyme Specificity
- Mechanism of Action of Enzymes
- Enzyme Catalyzed Reactions

□ **Lecture 2 (Factors affects Enzyme activity)**

- Environmental Conditions
- Concentration of enzyme
- Extreme Temperature
- High temps
- PH Substrate concentration
- Cofactors and Coenzymes
- K_m – the Michaelis Constant

□ **Lecture 3: (Enzyme Inhibitors)**

- Irreversible inhibitors
- Reversible inhibitors
- Examples of reversible inhibition
- Competitive inhibitors
- Uncompetitive inhibitors
- Non-competitive inhibitors
- Irreversible inhibitors

□ **Lecture 4 (Naming Enzymes)**

- Classification number
- EC 1. Oxidoreductases
- EC 2. Transferases
- EC 3. Hydrolases
- EC 4. Lyases
- EC 5. Isomerases
- EC 6. Ligases

□ **Lecture 1: lipid**

- basic structure of lipid components.
- Lipid Characteristics
- Classify the types of Lipid
- Simple lipids:
- Compound Lipids
- Derived lipids

- Miscellaneous lipid
- Nomenclature fatty acids
- **Lecture 2:(Important fatty acids)**
 - Saturated and unsaturated fatty acids
 - Essential Fatty acids
 - Omega-3 fatty acids
 - Omega-6 fatty acids
 - Poly unsaturated fatty acids
- **Lecture 3: (Glycerol)**
 - structure of glycerol
 - Structure of triglyceride
 - Functions of triglyceride
 - Hydrolysis of triglyceride
 - Saponification
 - Soaps
- **Lecture 4: (Structure and organization of membranes)**
 - Mosaic model
 - Function of membrane
 - Phospholipid
 - Glycerophospholipids
 - Lecithin
 - Cephaline
 - Sphingo phospholipids
 - Sphingomyelin
 - Glycolipid
- **Lecture 5: (Steroids)**
 - structure of steroid components
 - cholesterol
 - lipoproteins
 - Sex hormones
 - Bile salts
 - Functions of lipid
 - Rancidity
 - Hydrolytic rancidity
 - Oxidative rancidity
 - Ketone rancidity
 - Lipid peroxidation
 - Amphipathic lipids
- **Lecture 1: (Amino acids and proteins)**
 - Definition
 - Structure of amino acids
 - Standard amino acids
 - General structure of amino acids
 - Enantiomers

- Optical isomers of amino acids
- Chirality of α -amino acids
- Synthesis of 20 amino acids
- Classification of amino acids
- **Lecture 2:**
 - Subclassification of neutral amino acids
 - Classification according to polarity of side chain (R)
 - Amino acid with aliphatic side chain
 - Hydroxyl group containing amino acids
 - Sulfur containing amino acids
 - Acidic amino acids
 - Basic amino acids
 - Aromatic amino acids
 - Classification of amino acids side chains by chemical properties
- **Lecture 3:**
 - Nutritional classification
 - Essential amino acids
 - Semiessential amino acids
 - Non essential amino acids
 - Metabolic classification
 - Ketogenic amino acids
 - Mixed ketogenic and glucogenic amino acids
 - Glucogenic amino acids
 - Chemical properties of amino acids
- **Lecture 4:**
 - Rare and unusual amino acids
 - Non-protein amino acids
 - The peptide bond
 - Example of peptide bonds
 - Peptide and proteins
 - Classification of peptides
 - Poly peptide
 - Hydrolysis of dipeptide
- **Lecture 5:**
 - Classification of peptides
 - Fischer projections of amino acids
 - Isoelectric point (IEP)
 - Zwitterions
 - Protein function biological role of proteins (example)
 - Determining amino acid composition
 - N-terminal amino acid analysis
 - Sanger's reagent) DNFB or FDNB)
 - Edman degradation (PITC)

□ **Lecture 6:**

- C-terminal amino acid analysis
- Human insulin
- Structure of insulin
- Denaturation
- Physical agents
- Chemical agents
- Applications of denaturations
- Renaturation
- Color reaction of proteins

□ **Lecture 7:**

- Structure of protein
- Levels of protein structure
- Primary structure
- Secondary structure
- α -Helix structure
- β -Plated sheet structure
- Supersecondary structure or motifs
- Tertiary structure
- Non-Covalent bonds

□ **Lecture 8**

- Disulfide bonds
- Hydrogen bonding
- Salt bridges
- Van Der Waals interactions
- Hydrophobic interactions
- Domain structure
- Rossmann fold
- Deamination
- Quaternary structure

□ **Lecture 9:**

- Classification of proteins
- Simple proteins
- Globins (Histones)
- Gliadines
- Scleroproteins
- Keratine
- Collagens
- Elastin
- Conjugated protein

□ **Lecture 10:**

- Phosphoproteins
- Lipoproteins
- Glycoproteins
- Nucleoproteins
- Metalloproteins
- Chromoproteins
- Derived proteins
- Donnan effect
- Proteopathy

Practical Lectures

1. Introduction to medical laboratory equipments and devices
2. Qualitative Analysis of Group I cations
3. Analysis and Identification of Group I Cations in an Unknown Sample
4. Identification of Aldehydes and ketones
5. Evaluation of student knowledge in subject of carbonyl compound
6. Students' Seminars
7. Determination of pH by electrometric method
8. Colorimetric methods using indicator solutions and papers for measuring PH
9. Evaluation of student knowledge in subject of PH Measuring the PH for unknown solution by using Electrometric and colorimetric method
10. Quantitative Estimation Titration Analysis
11. Evaluation of student knowledge in of subject of titration Measuring the concentration of sodium carbonate.
12. A review and an Open Discussion with Students with Data Interpretation.
13. Open Discussion and General Revision
14. Students' Seminars
15. Semester Practical Examination
16. Types of carbohydrate (monosaccharide)
17. Types of carbohydrate (disaccharide)
18. Types of carbohydrate (polysaccharide)
19. Evaluation of student knowledge in the subject of carbohydrate
20. Evaluation of student knowledge in the subject of carbohydrate
21. Types of Protein
22. Types of Protein
23. Types of Protein
24. Types of amino acids
25. Types of amino acids
26. Types of amino acids
27. Precipitation of protein
28. Precipitation of protein
29. Open Discussion and General Revision
30. Semester Practical Examination

Medical physics

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

General Aims of Course

To know about the physical work of all body systems
 Discuss the principal basics of medical instruments work (medical diagnostic using X rays, MRI
 Radiological therapy and other related matters.
 Improve the ability of the students to work in medical field and have medical skills and knowledge in this field

Educational Institution/ college	CMUM	
Department offering the course	Medical Physiology	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 1st year	
Title of the course	Medical physics	
Code	MCPs102	
Link	https://drive.google.com/drive/folders/16HSx9Zkd-uHMTjamukak9HCYuVpV0nki	
Total Course Hours	Practical hours=60	Total=105
	Theoretical hours=45	
Date of specification approval	13/11/2022	

Intended learning outcomes of the course:	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1: Differentiate between the physical basic function of each body system of the human being. 2: have a good knowledge about the clinical physics 3: know the physical basic of each medical instruments 4: learn how can apply the physics in human disease diagnosis
Intellectual Skills	<ol style="list-style-type: none"> 1. Mention all the clinical instruments that are needed to investigate the organ systems and how they work. 2. Ask an important question at the end of lectures that improve their thinking and their knowledge. 3. The student's response to the lecturer questions at the end of each lecture that improve their memory and ways of answer. 4. Prepare a copybook about any physical experiment, discuss and answer any asked question from teachers.
Professional Skills	<ol style="list-style-type: none"> 1. Perform all the physical experiments at the medical laboratory.
General and Transferable Skills	<ol style="list-style-type: none"> 1. Have a skill in using medical instrument. 2. defend them self when there are wrong results of experiments as they know the reason of the fault (as technical problem in instruments) 3. perform experiments and compare their result with normal ranges and they can give their decision and diagnosis 4. make a discussion field at the end of lectures and laboratory introduction for improving learning level of students
Attitude outcomes	The student able to keep the whole instrument in safe and clean.

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Introduction to medical physics	1	-	Yahya Alhalema
Energy, work, and power of the body.	4	8	Yahya Alhalema
Basic physics of the cardiovascular system	6	6	Yahya Alhalema
Electricity within the body	6	4	Yahya Alhalema
Physics of nuclear medicine.	6		Yahya Alhalema

Basic physic of lung and breathing	6	4	Yahya Alhalema
Eyes and vision	2	4	Yahya Alhalema
Sound in medicine	3	4	Yahya Alhalema
Physics of diagnostic x rays	6		Yahya Alhalema
Types of rays	1		Raghda Alomary
Radioactive pollution	1		Raghda Alomary
x-ray	1		Raghda Alomary
Microwave spectra	1		Raghda Alomary
Ecological effect of disposed radioactive substances	1		Raghda Alomary

Teaching and learning methods	
1. Theoretical lectures	Lectures: the students classified to 2 groups
2. Practical labs	The students distributed into small groups each of 10-15 students.
3. Seminars and posters presentations	Each group of students participate in activity, posters

Assessment methods	
1. Formative assessments	1. logbook 2. homework 3. question at the end of each lecture
2. Summative assessments	1. mid year exam (practical 10%+theoretical 30%) 2. final exam (practical 15%+ theoretical 40%) 3. quiz 2% +students activities 3%)

3. Pass mark	50%
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Resources and requirements	
Essential text books	Medical physics – Cameron
Recommended text books	
Other resources	Lectures and practical labs information

Theoretical Lectures

Module: introduction

- **Lecture 1** Introduction to medical physics

Module: Energy, work, and power of the body

- **Lecture 2** Conservation of energy in the body
- **Lecture 3** Energy change in the body
- **Lecture 4** Work and power
- **Lecture 5** Heat losses from the body

Module: Basics Physics of the cardiovascular system.

- **Lecture 6** Work done by the heart
- **Lecture 7** blood pressure and its measurement.
- **Lecture 8** Pressure across the blood vessel wall
- **Lecture 9** Bernoulli's principle
- **Lecture 10** Blood flow laminar and turbulent
- **Lecture 11-12** Poiseuille's law

Module; Electricity within the body .

- **Lecture 13** Electrical potentials of nerves
- **Lecture 14** Electrical signals from muscles-
- **Lecture 15** The electro-myogram (EMG),
- **Lecture 16-17** Electrocardiogram (ECG),
- **Lecture 18** Electroencephalography (EEG).

Module: Physics of diagnostic x-rays .

- **Lecture 19** Production of x-ray beams
- **Lecture 20-21** How x-ray absorbed
- **Lecture 22-23** CT -scan

Module Physics of nuclear medicine .

- **Lecture 24-25** Units of radioactivity
- **Lecture 26-27-28** Basic instrumentation of nuclear medicine
- **Lecture 29-30** Radiation doses in nuclear medicine

Module Basics physics of lungs and breathing .

- **Lecture 31** Measurement of lung volumes
- **Lecture 32** The breathing mechanism
- **Lecture 33** airway resistance,
- **Lecture 34-35** work of breathing

Module Physics of the eyes and vision.

- **Lecture 36** Defective vision and its correction

- **Lecture 37** Instruments used in ophthalmology

Module Sound in medicine

- **Lecture 38** General properties of sound,
- **Lecture 39** the stethoscope, ultrasound picture of the body,
- **lecture 40** ultrasound to measure motion, physiological effects of ultrasound in therapy

Module: physical safety

- **Lecture 41** Types of rays
- **Lecture 4[†]** Radioactive pollution
- **Lecture 4[‡]** x-ray
- **Lecture 4[£]** Microwave spectra
- **Lecture 4[°]** Ecological effect of disposed radioactive substances,

Practical hours

- The density of a liquid by means of a loaded test tube
- The falling of a small sphere through a viscous medium
- The specific heat capacity of a poor conductor by the method of mixtures.
- Determination of the focal length of a convex lens.
- Determination of surface tension of water using a capillary tube. The focal length of a concave mirror
- The velocity of sound by means of resonance tube closed at one end
- The measurement of gravity by using simple pendulum

Anatomy

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Anatomy	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 /1 st year	
Title of the course	Gross anatomy	
Code	McAn103	
Total Course Hours	Practical hours=120	Total=180
	Theoretical hours=60	
Date of specification approval	1/9/2022	

General Aims of Course

The overall aim of the course is to provide the students with the basic anatomical knowledge of the normal structure of the human body at the level of the upper limb, thorax and lower limb and to integrate these anatomical facts with more advanced knowledge of clinical sciences

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:

- Describe the principal distinguishing features of bones of the upper limb
- List the muscles of the upper limb and their main action and nerve supply including the rotator cuff muscles.
- List the muscles that are attached to the arm and forearm and their action and nerve supply
- Define the axilla, Describe the boundaries and borders of the axilla
- List the contents of the axilla.
- Describe the components of the joints of the upper limb.
- Describe the stability of the shoulder joint.
- Describe the cubital fossa, list the contents of the cubital fossa.
- Understand the clinical importance of the cubital fossa
- Describe the components of the elbow joint.
- List the muscles acting on the elbow joint
- Describe the components of the wrist joint.
- List the muscles acting on the wrist joint
- Describe the carpal tunnel and the flexor and extensor retinacula and the structures passing in relation to the retinacula
- Describe the snuffbox.
- Describe the movement of the fingers and list the muscles acting on the fingers.
- Describe the principal distinguishing features of bones of the thoracic cage
- List the muscles of the thoracic wall and their main action and nerve supply.
- List the contents of intercostal space.
- Define the pleura.
- Describe lungs.
- Describe the components of the mediastinum.
- Describe the surface anatomy of the heart.
- Describe the chambers of the heart.
- Understand the conductive system of heart.
- List the blood supply of the heart.
- List the posterior mediastinal structures.
- Describe the principal distinguishing features of bones of the lower limb
- List the muscles of the lower limb and their main action and nerve supply.

	<ul style="list-style-type: none"> - List the cutaneous nerves of the lower limb. - Define the femoral triangle, Describe the boundaries and borders of the triangle - List the boundaries and contents of the adductor canal. - Describe the components of the joints of the lower limb. - Describe the stability of the hip joint. - Describe the popliteal fossa, list the content of the popliteal fossa. - Understand the clinical importance of the gluteal region and popliteal fossa - Describe the components of the knee joint. - List the muscles acting on the knee joint - Describe the components of the ankle joint. - List the muscles acting on the ankle joint - Describe the flexor and extensor retinacula and the structures passing in relation to the retinacula - Describe the soles of feet. - Describe the movement of the toes and list the muscles acting on them.
Intellectual Skills	<ul style="list-style-type: none"> - Integrate the anatomical facts with the basic clinical knowledge required for proper examination of a patient in order to reach a proper diagnosis - Relate the surface markings of different structures and determine the position or course of internal structures - Correlate the anatomical knowledge with clinical signs seen in cases of nerve injuries of upper and lower limbs.
Professional Skills	<ul style="list-style-type: none"> - Locate the peripheral pulses and evaluate their features - Locate the brachial artery pulsation for efficient blood pressure assessment. - Locate the dorsalis pedis artery pulsation for efficient blood supply to foot. - Locate the apex of the heart to see whether the heart is enlarged. - Elicit the normal anatomical structures on X-rays
General and Transferable Skills	<ul style="list-style-type: none"> - read and appraise scientific papers related to anatomy - present scientific facts in a well-organized matter - use advanced technology to search for facts and prepare presentations - work as an effective team member.

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Introduction to anatomy	8	8	Dr. Rana Mumtaz
Anatomy of the upper limb	18	18	Dr. Rana Mumtaz
Thorax	16	16	Dr. Ashraf
Anatomy of the lower limb	18	18	Dr. Mayson

Teaching and learning methods	
4. Theoretical lectures	2 lectures / week
5. Practical labs	<p>The students are divided into small groups each of 10-15 students</p> <p>Plastinated cadavers, skeletons, bone and organ specimens will be available for students</p> <p>X-ray imaging films will be available to learn different bony landmarks</p>
6. Seminars and presentations	Each 5-7 students are required to present a seminar on specific subject

Assessment methods	
4. Formative assessments	<ol style="list-style-type: none"> 1. formative quiz during lectures 2. discussion panels during assessment lab 3. completing Logbook
4. Summative assessments	<ol style="list-style-type: none"> 1. midyear exam: 30% (10 practical, 20 theoretical) 2. final exam: 70% (20 practical, 50 theoretical).
5. Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Cunningham`s Manual of Practical Anatomy, (theoretical and practical, vol.1 and 2) 2. Grant Atlas of Anatomy 3. Snell`s Clinical Anatomy by Regions
Recommended text books	<ol style="list-style-type: none"> 1. Gray`s Anatomy 2. Atlas of Human Anatomy by FH Netter3.
Other resources	Will be included in the lectures accordingly

الرابط	المادة / المرحلة / اسم التدريسي
https://drive.google.com/drive/folders/1Cr8wAAUa-XcYJY9iDsU5KItBggf9YqG?usp=share_link	محاضرات مادة التشريح / المرحلة الاولى / م.د. رنا ممتاز رؤوف
https://drive.google.com/drive/folders/1Gr6q2gozX0JZeV3VYb6L1bqVFXpXX2GO?usp=share_link	محاضرات مادة التشريح / المرحلة الاولى / ا.م.د. احمد هشام قاسم
https://drive.google.com/drive/folders/1Tk1hbEqXUSnusVpeG_8pkBhWLA_3M5od	محاضرات مادة التشريح / المرحلة الاولى / م.م. حارث علي حسن
https://drive.google.com/drive/folders/1ui-eO13XOlGwX90Dzm9QxX_w_4WZ_4eL?usp=share_link	محاضرات مادة الاحياء الطبية / المرحلة الاولى / ا.م.د. بثينة حاتم السبعوي
https://docs.google.com/presentation/d/1aAglYszrupd3352Ag5IJ0O9QDtJZcTG1/edit?usp=share_link&oid=114981428829343696386&rtppof=true&sd=true	محاضرات مادة الاحياء الطبية / المرحلة الاولى / ا.م.د. رمزية حسن عبدالرحمن
https://drive.google.com/drive/folders/16jwgCUqHhPG4CP52NzDaBDmW13OKL_50?usp=share_link	محاضرات مادة الاحياء الطبية / المرحلة الاولى / ا.م.د. كوكب ادريس محمود
https://drive.google.com/drive/folders/1qINDy2mlHjknUENj5so07Jfx_dmWS7nU	محاضرات مادة الاحياء الطبية/ المرحلة الاولى/ م.م. علياء علي عبدالله
https://drive.google.com/drive/folders/1ZNomMXriLrq8BrsUEreiWjubmOp9PiDA?usp=share_link	محاضرات مادة الاحياء الطبية / المرحلة الاولى/ ا.م.د. علي عادل داود

Theoretical lectures

Module: introduction

- **Lecture 1:** Anatomical position. Anatomical planes.
- **Lecture 2:** Terms of position. Terms of movements.
- **Lecture 3:** Skin. Fascia.
- **Lecture 4:** Vessels-Bones
- **Lecture 5:** Spinal nerves. Cranial nerves.
- **Lecture 6:** Sympathetic nerves. Parasympathetic nerves.
- **Lecture 7:** Muscles.
- **Lecture 8:** Joints.

Module: upper limbs

Pectoral region.

- **Lecture 1:** The breast. Shoulder girdle. Pectoralis major muscle. Pectoralis minor muscle
- **Lecture 2:** Subclavius muscle. Clavipectoral fascia. Deltoid muscle.

Axilla

- **Lecture 3:** Walls of the axilla. Axillary lymph nodes-Axillary artery.
- **Lecture 4:** Teres major muscle. Teres minor muscle. Latissimus Dorsi muscle.

Brachial plexus.

- **Lecture 5:** Formation of brachial plexus. Cords of brachial plexus. Branches of brachial plexus.
- **Lecture 6:** Axillary vein. Subscapularis muscle

The back.

- **Lecture 7:** Rotator cuff. Triangular space. Quadrangular space. Axillary nerve. Suprascapular nerve.
- **Lecture 8:** Anastomosis around the scapula. Muscles of the back.

The arm.

- **Lecture 9:** Cutaneous innervations of the skin of the arm. Brachial fascia. Brachial artery. Musculocutaneous nerve.
- **Lecture 10:** Median nerve in the arm. Ulnar nerve in the arm. Radial nerve in the arm. Muscles of the arm. profunda brachii artery.

Cubital fossa and anterior compartment of the forearm.

- **Lecture 11:** Boundaries and contents of the cubital fossa. Muscles of anterior compartment of the forearm.
- **Lecture 12:** Ulnar artery in the forearm. Radial artery in the forearm. Anastomosis around the elbow joint.

Forearm continues.

- **Lecture 13:** Median nerve in the forearm. Muscles of the posterior compartment of the forearm.
- **Lecture 14:** Radial nerve in the forearm, Vessels of the posterior compartment of the forearm.

The wrist.

- **Lecture 15:** Anatomical snuff-box. Flexor retinaculum. Structures superficial to flexor retinaculum. Structures deep to flexor retinaculum.
- **Lecture 16:** Extensor retinaculum. Structures superficial to extensor retinaculum. Structures deep to extensor retinaculum.

The hand.

- **Lecture 17:** Bones of the hand. Muscles of the hand. Fascia of the hand. Pulp space. Arteries of the hand (ulnar and radial artery). Nerves of the hand (ulnar and median nerve).

Joints of the upper limb.

- **Lecture 18:** Sternoclavicular joint. Acromioclavicular joint. Shoulder joint. Elbow joint. Proximal radioulnar joint. Distal radioulnar joint. Wrist joint.

Module: Thorax

- **Lecture 1, 2:** Thoracic wall
- **Lecture 3:** Intercostal space
- **Lecture 4:** Pleura
- **Lecture 5,6:** Lungs
- **Lecture 7, 8:** Mediastinum
- **Lecture 9:** Surface anatomy of heart
- **Lecture 10:** Chambers of the heart

- **Lecture 11:** Conductive system of heart
- **Lecture 12:** Blood supply of heart
- **Lecture 13, 14:** Major blood vessels of the heart
- **Lecture 15,16:** Posterior mediastinal structures

Module: Lower Limb

Thigh

- **Lecture 1:** Superficial fascia. Deep fascia. Saphenous opening. Great saphenous vein
- **Lecture 2:** Superficial inguinal ring, femoral sheath, femoral canal

Cutaneous nerves of the thigh

- **Lecture 3:** From lumbar plexus, From femoral nerve
From obturator nerve, Inguinal ligament
- **Lecture 4:** Femoral triangle, Contents of the triangle, Adductor canal

Anterior compartment of the thigh

- **Lecture 5:** Muscles of the anterior compartment, Femoral artery.
Branches of the artery
- **Lecture 6:** Medial compartment of the thigh, Obturator nerve. Obturator artery. Accessory obturator nerve
- **Gluteal region**
- **Lecture 7:** Cutaneous nerve. Sacrotuberous ligament, Sacrospinous ligament. Sciatic foramina
- **Lecture 8:** Structures pass to the gluteal region from the pelvis. Muscles of the gluteal region, Inferior gluteal artery. Superior gluteal artery.
Inferior gluteal nerve. Superior gluteal nerve. Sciatic nerve. Anastomosis between branches of the internal and external iliac artery

Back of the thigh

- **Lecture 9:** Cutaneous nerve. Muscles of the back of the thigh. Popliteal fossa. Contents of the fossa. Popliteal artery. Popliteal vein
- **Lecture 10:** Branches of tibial nerve in the fossa, Common peroneal nerve branches in the fossa. Lateral cutaneous nerve of the thigh

Front of the leg and dorsum of the foot

- **Lecture 11:** Cutaneous nerves. Deep fascia. Retinacula. intermuscular septa.
- **Lecture 12:** Anterior compartment of the leg. Muscles of the compartment. Anterior tibial artery

Dorsalis pedis artery

- **Lecture 13:** Branches of the artery. Deep peroneal nerve. Muscles of the lateral side of the leg. Superficial peroneal nerve
- **Lecture 14:** Back of the leg. Muscles of the back of the leg; Cutaneous structures at the back of the leg. Tibial nerve

Posterior tibial artery

- **Lecture 15:** Branches of the artery. Synovial sheath of extensor muscles. Extensor expansion. Synovial sheath of the flexor muscles. Sole of foot. Cutaneous nerves. Planter fascia. Planter aponeurosis

Compartment of the sole.

- **Lecture 16:** Great toe compartment. Medial planter nerve. Medial planter artery

Compartment of the little toe

- **Lecture 17:** Central compartment of the sole. Lumbrical muscles. Lateral planter nerve and artery. Adductor interosseous compartment Planter arch. Interosseous muscles. Lymphatic drainage of the lower limb

Joints of the lower limb

- **Lecture 18:** Hip joint, Knee joint, Ankle joint

Practical hours.

Introduction

- Anatomical position. Anatomical planes.
- Terms of position. Terms of movements.
- Joints.

upper limbs

- Bones of upper limbs.
- Pectoral region.
- Shoulder girdle.

- Axilla.
- Brachial plexus.
- The back.
- Arm.
- Cubital fossa.
- Forearm.
- Wrist.
- The hand.
- Joints of the upper limbs.

Thorax

- Thoracic wall.
- Intercostal space.
- Pleura and Lungs.
- Mediastinum.
- Heart.

Lower Limb

- Bones of Lower limbs.

- Thigh.
- Gluteal region.
- Popliteal fossa.
- Leg.
- Foot.
- Joints of the lower limb.

Medical biology and Genetics

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Anatomy	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 1 st year	
Titile of the course	Biology	
Code	McAn104	
Total Course Hours	Practical hours=60	Total=120
	Theoretical hours=60	
Date of specification approval	1/9/2022	

General Aims of Course

This course will help the students to acquire the major knowledge facts regarding the structure, function and various activities of cells. In addition to the foundation of cytogenetics and the basic tissues of the body (Epithelium, connective tissue, muscular tissue and nervous tissue) and apply the skill to relate the function and structure of different tissues and practical knowledge of different tissue types under a light microscope.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ul style="list-style-type: none">- Describe the basic steps in preparing and staining specimens for light microscope.- Describe the histological characteristics of normal cells- Describe the structure and functions of the cytoplasmic components (membranous and non-membranous cell organelles, cell inclusions)- Recognize the subunits of each nuclear component and their role in its function- Describe the process of cell division and identify the activities that control the transition from each phase of the cell cycle to the other- Differentiate between normal and abnormal karyotyping.- Describe the structural characteristics of the four basic tissue types, epithelial tissue, connective tissue, bone & cartilage.- Describe and compare between different blood elements and their development.- Define and discuss the basic histological tissues of the body.
Intellectual Skills	<ul style="list-style-type: none">- Select appropriate methods to reveal specific microscopic features of cells and tissues- Correlate between histological structure & function of any cell or tissue- Interpret a complete blood picture report
Professional Skills	<ul style="list-style-type: none">- Illustrate the instruments and techniques used to prepare and study histological specimens.- Use the microscope efficiently.- Handle the histological glass slides and examine them using the maximum microscopic facilities- Identify various types of stains & microscopic techniques.- Elicit different cell organelles.- Differentiate between different blood cells in blood films & recognize a differential leucocytic count.- Differentiate between different types of epithelium, connective tissue cells, connective tissue proper & bone cells- Differentiate between different organs in histological slide seen under the microscope.

	- Elicit histological slides of tissues and organs.
General and Transferable Skills	<ul style="list-style-type: none"> - Adopt the importance of lifelong learning and show a strong commitment to it - Use the sources of biomedical information to remain current with advances in knowledge and practice - Collect information to enhance self-study and education - The student can express freely and adequately by improving his descriptive capabilities and presentation skills and enhancing his communication skills. - The student can improve his writing skills through self-reflection after each laboratory session

Course structure			
topic	No. Of lectures	No. Of labs	Lecturer
Introduction , Cell component	11	15	1- Inam A. abdulhameed
Cell organelles	9		2- Dr. Ali A. Dawood
Cell division, cell activity	13		3- Dr. Buthaina H Al-Sabawi
Genetics	12	15	4- Dr. Kawkab I. M
General Histology	15		5- Dr. Ramzia H. abdulrahman 6- Dr. Wahda A. khrofa

Teaching and learning methods	
Theoretical lectures	2 lectures / week
Practical labs	<ul style="list-style-type: none"> - Large group in the auditorium - The small groups in the practical laboratory. <p>Students are divided into small groups (2 students each); each group is issued a topic for working as a team (to search on it, collect information and present it as seminar in a power point presentation) and present them in front of their peers and senior staff. A soft copy of presentation is collected</p>

	at the end of the round. - Practical sessions to gain practical skills & drawing.
Seminars and presentations	Each 5-7 students are required to present a seminar on specific subject

Assessment methods	
Formative assessments	<ul style="list-style-type: none"> - Formative quiz during lectures - Discussion panels during assessment lab - Completing Logbook
Summative assessments	<ol style="list-style-type: none"> 1. Midyear exam: 35% (10 practical, 25 theoretical) 2. Final exam: 65% (10 practical, 55 theoretical).
Pass mark	50%

Resources and requirements	
Essential text books	- Biology (18th edition) 2010. Sylvia S. Mader
Recommended text books	<ul style="list-style-type: none"> •Concepts of biology. 2013. Samantha Flowr and et. al •Human genetics concepts and application. 20th edition 2016 •Basic histology. 10th edition. 2003. Luiz. Caries. Junqueirs
Other resources	Will be included in the lectures accordingly

Theoretical lectures

Module: Cell Biology

- **Lecture 1, 2, 3 :** Introduction to Biology
 - Definition of life
 - The role of water in the life
 - pH scale
 - Tools of cell biology
 - The chemical composition of the cell
- **Lecture 4, 5, 6:** The structure of the cell
 - The structure of the cell membrane
 - The function of the cell membrane
 - The modification of the cell membrane
 - Cellular junction
- **Lecture 7, 8, 9, 10:** The Eukaryotic cytoskeleton
 - Cytoskeleton: structure and function
 - Microfilaments
 - Microtubules
 - Intermediate filaments
 - Centrosomes
 - Cilia & Flagella
 - Basal Bodies
 - Inclusion Bodies (Glycogen, Lipids, Pigments, Melanin, lipids, Hemosiderin, Crystal
- **Lecture 11, 12, 13, 14, 15:** Cell organelles
 - Mitochondria
 - Golgi apparatus
 - Endoplasmic reticulum
 - Ribosomes
 - Lysosomes
 - Peroxisomes
 - Vesicles & vacuoles
- **Lecture 16, 17:** Nucleus
 - Structure and Function
 - Nuclear Envelope
 - Nuclear pores
 - Nucleolus
 - Chromatin and Chromosomes
 - Genetic defect of Nuclear envelope
- **Lecture 18, 19, 20, 21:** The cell cycle
 - Interphase(G1, S, G2)
 - Growth factors
 - Classes of growth factors
 - Checkpoints and feedback controls
 - Types of checkpoints
 - Regulation of eukaryotic cell cycle

- Cyclin and Cyclin-dependent kinases , P53, Proto-oncogen and Chalcones
- Tumors (Benign & Malignant) , Cancer
- **Lecture 22, 23, 24:** Mitosis and Meiosis
 - Stages of mitosis
 - Stages of meiosis 1
 - Stages of meiosis 2
- **Lecture 25, 26, 27, 28, 29, 30:** Cell differentiation, specialization, activities, and cell death
 - Theories of cellular differentiation
 - Germinal layers
 - Stem cells
 - Types of stem cells
 - Cellular development
 - Cellular specialization
 - Cellular activities
 - Lipids
 - Proteins
 - carbohydrates
 - Nucleic acids
 - Cell death
 - Programmed cell death (apoptosis)
 - Necrosis

Module: Genetics

- **Lecture 1, 2:** Introduction to immunology
 - Molecular genetics:
 - Mendelian genetics, Crossing over, X-linked inheritance
 - Blood group: ABO system, Rh system
 - Genetic transfer and recombination in bacteria: transformation, Transduction, conjugation.
 - DNA structure and replication
 - Transcription and translation:
 - RNA structure and types
- **Lecture 3, 4:** Mutation
 - Type of mutation
 - Thalassemia, genetic control of metabolism
 - Human chromosomes:
 - Karyotype test (preparation, results, application)
- **Lecture 5, 6** Genetic engineering
 - Genetic engineering
 - Recombination DNA technology, cloning DNA, genetic fingerprint

Module: General Histology

- **Lecture 1,2,3,:** Epithelial Tissue
 - Characteristics of epithelia
 - Function
 - Simple epithelia-
 - Stratified epithelia
 - Glandular epithelium
 - Endocrine glands-
 - Exocrine glands-
 - Classification of glands
- **Lecture 4,5:** Connective tissue
 - Types of C.T.
 - Types of C.T. cells
 - Cartilages
 - Hyaline cartilage-
 - Elastic cartilage
 - Fibrocartilage
 - Growth of cartilage
- **Lecture 6,7:** Bone tissue
 - Compact bone
 - Spongy bone
 - Bone development
 - Intramembranous ossification
 - Endochondral ossification.
- **Lecture 8,9:** Muscular tissue
 - Smooth muscles
 - Skeletal muscles
 - Cardiac muscle
- **Lecture 10:** Nervous tissue
 - Types of nerve fires
 - Neuron
 - Types of nerve cells
 - Ganglia (autonomic and spinal ganglia)

Module: Biological safety

- **Lectures 1-5:**
 - Biological Symbols
 - Biosafety levels
 - Biosafety Cabinet & Culture Hoods

Practical hours

- Power point slides of microscopic slides in biology (60 hours).
- Seminars prepared by First year medical students on selected Medical topics by power point .

Practical Power point slides.

Module: Medical Biology

- Light Microscope (Light and Electron microscope).
- Cell Biology
- The cell
- Cytoplasmic organelles
- The nucleus.
- Cell Division
- Genetics
- Simple Epithelial. T
- Stratified Epithelial .T.
- Connective T.
- Cartilage.
- Blood
- The bone & bone development
- Muscular tissue
 - Nervous tissue

Foundations of Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and lists the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Medicine	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 1 st year	
Title of the course	Foundations of Medicine	
Code	MCMd105	
link	https://drive.google.com/drive/folders/130sD_p7rtR756WMXel6oYC8z3p9otHpU?usp=sharing	
Total Course Hours	Practical hours= 0	Total=30
	Theoretical hours=30	
Date of specification approval	10/11/2022	

General Aims of Course

The course aims to teach the foundation of medicine to students of the first stage in the Faculty of Medicine in its theoretical aspects, where the student is familiar with the science of medical terminology concerning the building of medical terms and how to analyze the medical terms and decode them. Also, the course helps the students to understand the principles of community medicine, the distribution of diseases, the uses of medical herbs, and important WHO definitions.

Intended learning outcomes of the course:	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Understand the foundation of medicine. 2. Know the build of medical terms. 3. Understand medical terms. 4. Know the WHO objectives.
Intellectual Skills	<ol style="list-style-type: none"> 1. Modify medical terms. 2. Figure the difference between the medical terms. 3. Use the best medical terms.
Professional Skills	<ol style="list-style-type: none"> 1. Benefit from medical terminology. 2. Apply the principles of community medicine in the field of his clinical work. 3. Use of medical herbs.
General and Transferable Skills	<ol style="list-style-type: none"> 1. Graduate a doctor who can use medical terms correctly and fluently. 2. Prepare a doctor who can understand the distribution of the disease and how to prevent it.
Attitude outcomes	Recognize any ethical problems and medicolegal concerning medical terms

Topic	No. Of lectures	Lecturer
Medical terminology	15	Qasim S. Al-Chalabi
Principle of community medicine	15	Ahmed Manhal

Teaching and learning methods	
1. Theoretical lectures	
2. Seminars and presentations	The students are divided into small groups each of 10-15 students

Assessment methods	
Formative assessments	- Discussion and oral tests.
Summative assessments	- Written exams 100%
Pass mark	50%

Resources and requirements	
Essential textbooks	1. Introduction to Medical Terminology by Linda Stanhope, Kimberly Turnbull. 2.Principles and Practice of Community Medicine 2nd ed. Edition by Asma Rahim (Author)
Recommended textbooks	Principles Of Community Medicine Paperback by Dr.B.Sridhar Rao (Author)
Other resources	Web and internet as a source of information.

Theoretical lectures

Module: Medical terminology

- **Lecture 1, 2:**
 - Principles of medical word building.
 - Analysis and interpretation of medical terms.
 - How to "read" medical terms.
 - Define common medical terms.
- **Lecture 3, 4:**
 - Define a prefix and state the rule for using prefixes in words
 - Correctly identify common prefixes relating to numbers, color, measurements, negative, position, and direction.
 - Demonstrate the ability to create words using prefixes
- **Lecture 5,6:**
 - Define a suffix and state the rule for using in medical words
 - Correctly identify common suffixes relating to surgical procedures or medical conditions
 - Demonstrate the ability to create words using suffixes
 - How to create nouns, adjectives, and using them in medical terms.
- **Lecture 7, 8:**
 - How to deal with single plural medical terms?
 - Review of medical terms according to the body system
 - Practice and review previous knowledge according to the different body systems.
- **Lecture 9, 10:**
 - How to deal with common surgical terms?
 - Review and definition of most common surgical terms and procedures.
 - Practice and review previous knowledge according to the common medical terms used in surgery.
- **Lecture 11,12, 13:**
 - Definition of most common radiological terms.
 - Definition of most common genito-urinary terms and procedures.
 - Definition of most common hematological terms.
- **Lecture 14, 15:**
 - Definition of most common psychiatric terms.
 - Definition of most common orthopedic terms.
 - Review and practice previous knowledge according to previous systems.

Module: community medicine

- **Lecture 1: Concepts of health**
 - Changing concepts of health
 - Definitions of health
 - New Philosophy of health
- **Lecture 2: Spectrum of health**
 - The health - sickness spectrum
 - Determinants of health
 - Responsibility for health
- **Lecture 3: spectrum of disease**
 - Concept of disease

- Definitions of disease
- Natural history of disease
- **Lecture 4:** epidemiological concept of health and disease
- Epidemiological triad
- Meanings of risk factors
- Ice berg phenomenon of disease
- **Lecture 5: Concepts of prevention and control of disease**
- Concepts of prevention and control of disease
- Levels of disease prevention
- **Lecture 6: Concepts of prevention and control of disease**
- Primordial prevention
- primary prevention
- Secondary prevention
- Tertiary prevention
- **Lecture 7: Health service philosophy**
- Characteristics of health care
- Levels of health care
- Health team concept
- **lecture 8:** Primary health care
- Definition of primary health care according to alma-ata conference 1978
- Health policy
- **Lecture 9: Man and environment**
- Components of environment
- Environmental sanitation
- **Lecture 10: Man and environment**
- Environmental health
- Ecological Factors
- **Lecture 11: Environmental pollution**
- Air pollution
- Water pollution
- **Lecture 12: Environmental pollution**
- Soil pollution
- Scope of environmental health program
- **Lecture 13: Herbal medicine**
- Introduction to herbal medicine
- **Lecture 14: Herbal medicine**
- Alternative medicine
- Interaction of herbal products with conventional drugs
- **Lecture 15: Herbal medicine**
- Most common herbal product used by people and their therapeutic uses and their adverse effects

Computer

Course description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Computer unit	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 1 st year	
Title of the course	Computer	
Code	MCCU106	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours=60 h	Total=90 h
	Theoretical hours=30 h	
Date of specification approval	12/11/2022	

General Aims of Course

The course aims to teach computer subject for students of the first stage in the College of Medicine, as well as postgraduate students (PhD - Master - Diploma) and for all specializations in the branches in the college.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:

1. Enable the student to understand the subject of computers.
2. The student knows the types and components of the computer and the special terminology used about it.
3. To know the information technologies and the extent of benefit from them and the extent of their development.
- 4 .That the student knows the operating systems and their importance and how to use them to benefit from the use of the computer for the desired purpose
- 5 .That the student knows the use of ready-made applications in printing and mastery in it and the work of electronic tables, statistics and graphs, as well as presentations.
6. The student understands the Internet and knows how to use it and benefit from it.
- 7 .That the student knows the study remotely by using one of the educational platforms approved by the educational institution in dealing with it and communicating with the subject's professor in obtaining lectures and assignments, providing homework solutions and performing quick choices and exams.

Intellectual Skills	<ol style="list-style-type: none"> 1. Enable the student to formulate problems in a way that enables the use of a computer that helps to solve these problems, in addition to carrying out a logical organization and analysis of data, by representing data through abstractions such as models and simulations, and identifying, analyzing and implementing possible solutions in order to reach the most efficient mixture Scientific and effective steps and sources. 2. Microsoft Office application skills. 3. To contact via email. 4. Visual display of information. 5. Professional use of search engines.
Professional Skills	<ol style="list-style-type: none"> 1. Enable the student to understand the computer and benefit from it in the field of medical work. 2. The student will be able to use CDs and CDs that include medical topics to increase his knowledge. 3. The student is able to use simulation models in anatomy, biology, surgery, internal medicine and other subjects.
General and Transferable Skills	Preparing a specific project in the laboratory.
Attitude outcomes	

Course structure			
topic	No. Of lectures	No. Of labs	Lecturer
Computer and information technology concepts	5	4	assistant teacher: Raghad Muhammad Suleiman
Windows 10	5	5	Assistant Professor Rukaya Zedan
Ms-word 2016	5	5	Assistant Professor Rukaya Zedan
Ms-power point	5	5	assistant teacher Muna

2016			Zedan hamdy
Ms-Excel 2016	5	5	Teacher dhafar fakhri
Internet	5	6	assistant teacher Maha Abdel Hady

Teaching and learning methods	
Theoretical lectures	Lectures take place 2 times per week for each group (there are 2 groups A ^ B) and a total period 2 hours weekly for two groups. The lecture hall in the building of the Deanship of the Faculty of Medicine.
Practical labs or clinical sessions	The students are divided into small groups each of 2-3 students for one laptop computer .
Seminars and presentations	

Assessment methods	
Formative assessments	1.Discussion and oral exams . 2.Individual competition (adding grades for those who perform what the professor asks first).
Summative assessments	1. Written exams. 2. Practical exam.
Pass mark	50 %

Resources and requirements	
Essential text book	online resources

ks	
Recommended text books	<p>Computer skills windows 10 (Hardware and Software)</p> <p>By</p> <p>Prof. Dr. Mohamed Bilal Al Zoubi</p> <p>Prof. Dr. Ahmed Al-Sharia</p> <p>University of Jordan</p> <p>Suhair Abdullah</p> <p>Khaleda Mohammed Al Zoubi</p>
Other resources	<p>(Web Sites)</p> <p>https://books.google.iq/books?hl=ar&lr=&id=XkjuCQAAQBAJ&oi=fnd&pg=PP1&dq=microsoft+office+2016&ots=c3hJHlkq5J&sig=VzyVtg3U26XVJFa4pwBC5N8EW38&redir_esc=y#v=onepage&q=microsoft%20office%202016&f=false</p>

Theoretical lectures

Theoretical lectures

Module: Information Technology

□ Lecture 1

Definition of Information technology (IT)

Definition of Computers

Computer Applications

Generation & Description

Computer types

Computer Components

- Hardware (Input Unit – Output Unit – System Unit)
- Software
- Users

□ Lecture 2

Software (Definition)

Types of Software

1- System Software (Operating System (O.S) - programming Languages - Compilers and Interpreters)

2- Application Software

3- Open-source Software

Computer Viruses

Module: Operating system

□ Lecture 1

● Manage File and folder

- Define (File, Folder, File Explorer)
- How to create and open files and folders
- Move your files into folders
- Copy, paste, delete, rename files.
- Rename several files
- There are several ways to select multiple files or folders
- What is Shortcuts
- Common places to look for files.

□ Lecture 2

- Define the Operating system
- Most popular operating system
- Interface

- Define the interface
- Types of interfaces:
 - Command Line Interface (CLI)
 - Graphical User Interface (GUI)
 - Define Microsoft windows
 - Windows development (History)
 - What is window 10
 - Getting started
 - New features of windows 10
 - Start Menu
 - Start Menu alphabetical list
 - Cortana
 - Microsoft Edge Browser
 - Improved Multitasking
 - Windows Snapping

□ Lecture 3

- New features of Windows 10 to be continue....
 - Action Center
 - Customize Action Center
 - Pin and Unpin
 - Full screen
 - One windows for all device
 - Customize the Taskbar
 - Windows Search
 - Remove or display the Task View Button
 - **The Notification Area**
 - Customize the Start Menu (Tile)
 - Rearrange tiles
 - Resize a tile
 - Turn off live tiles
 - Pinning and unpinning tiles

□ Lecture 4

- Personalizing your desktop
 - Background
 - Colors
 - Lock Screen
 - Themes
 - Start
 - Power Button
 - Snipping Tool

– Sticky Note

Module: Microsoft word 2016

□ Lecture 1

- Microsoft Office:
- The features of the Office programs Microsoft Word program:
- Opening Microsoft Word 2016
- Describe the Elements of the Word screen
- File Tab
- Saving and Closing a New Document

□ Lecture 2

- Home Tab
- Clipboard group
- Font group
- Paragraph group

□ Lecture 3

- Insert Tab
 - Illustrations group
 - Insert Shapes
 - Inserting pictures
 - Customize the picture
 - Symbols group

□ Lecture 4

- Insert Table
 - Define the Table
 - Creating a Table
 - Selecting Cells
 - Delete in Table
 - Delete Cell
 - Merging Cells
 - Splitting Cells
 - Insert text in Table

Module: Microsoft power point 2016

□ Lecture 1

- 1- Definition of power point
- 2- Some basic guideline considers in planning presentation in power point
- 3- Getting started.
- 4- Describe the Elements of power point screen
- 5- Creating new presentation (Blank presentation & template presentation)
 - entering text to the slide
 - changing the look of your text on slide
- 6- Adding theme and background to the slide
- 7- Saving the presentation

□ Lecture 2

- 1-Opening previous file(presentation) in power point.
- 2- Adding new slides to the presentation.
- 3- Insert tab
 - Pictures
 - Word Art
 - Date and time
 - Slide number
 - Media clips
 - Headers and footers

□ Lecture 3

- 1 View tab
- 2- Types of viewing presentation
- 3- Re-arranging the slides.
- 4- Changing themes of slides
- 5- Changing the layout of the slides.
- 6- Deleting the slides.
- 7-Slide show and Types of it (from beginning, from current slide, hide & unhide a slide, show group of slides not all)

□ Lecture 4

- 1-Animation effects.
- 2-Slides Transition.

Module: Microsoft Excel 2016

□ Lecture 1

- Starting Excel 2016
- The Excel Interface
- Create a new blank workbook
- Adding a Worksheet
- Naming Worksheets
- Saving a Workbook
- Dealing with cells
- Dealing with rows and columns-part1

□ Lecture 2

- Dealing with rows and columns-part2
- Copying cell content
- Autofill
- Formatting numbers
- Dealing with text
- Sorting data
- Creating Formulas
- Using Functions
 - Sum Functions
 - Maximum and Minimum Value
- Inserting a Function
- "IF" Function

□ Lecture 3

- Count function
- COUNT BLANK Functions
- COUNT IF Functions
- COUNT A Functions
- Filter the data

□ Lecture 4

- The Charts
- Creating Charts
- Chart Title
- Apply a chart style
- Add Data Labels
- Add Axis Titles

Module: The Internet

□ Lecture 1

- The internet (International Network)
- General Concepts
- How to Find the IP Address of Your ISP's
- The primary methods of accessing the internet were through
- Web server
- Connecting to the Internet
- set up your laptop to connect to a Wi-Fi network
Wireless Security Key (if necessary)

□ Lecture 2

- Starting Internet explorer
- Changing the start page
- Turning off graphics
- Saving Web Address
- Organizing Favorites
- Saving Web Pages
- Downloading Files from a Web Page
- Search Engines
- Pop-Up Blocking
- Online Encyclopedias
- Online Dictionaries
- Voice over Internet Protocol (VoIP)
- Opening a Web Page within a New Tab
- Opening a Web Page within a New Window
- Manage and delete your browsing history
- View your browsing history and delete specific sites
- To delete your browsing history in the desktop
To delete your browsing history when you close browsing sessions

□ Lecture 3

- The Electronic Mail
- E-Mail Characteristics
- How does E-Mail Work
- E-mail addresses characteristics
- Opening the free mail
- How do I sign up?
- Change your Yahoo password
- To better protect your account
- How do I sign in?
- Sending an E-Mail Message

□ Lecture 4

- Attaching Files
- Inserting a Signature
- Replying to Mail
- Forward Mail

Practical Hours

Module: Information Technology

Lab1

- Practical application about Mouse how to deal with mouse terminology
- Navigating the contents of the desktop and using the basic icons

Lab2

- Practical application about windows how dealing with any open program window
- Practical application on the power buttons

Module: Operating system

Lab1

- Exercise in the Lab about The Manage files and folders
- Create files and folders, Move files to folders
- Implement several options around files such as copy, paste, delete, rename multiple files
- Select multiple files or folders in several ways

Lab2

- Exercise in the Lab about new features of Windows 10, applying what in lecture about application terminology used in the interface of the Windows operating system

Lab3

- Exercise in the Lab. about New features of Windows 10 to be continue....
- Customize the Taskbar, Customize the Start Menu (Tile)
- Applied what in lecture about notification area and tiles in start menu.

Lab 4

- Exercise in the Lab about Personalizing the desktop Background, Colors
- Lock Screen, Themes, Start and used some tools as Snipping Tools, Sticky Note

Module: Microsoft word 2016

Lab 1

- Exercise in the Lab about Microsoft word.
- Navigating the contents of screen elements of Microsoft word program
- know the contents of Ribbon

Lab 2

- **Exercise in the Lab about Home Tab**
- Create a document and apply the editing and proofing documents by use the groups and commands of home tabs.

Lab 3

- Exercise in the Lab about Insert Tab in Ribbon.
- Create a document and apply the insert shapes, pictures, page number, chart, text box, word art, date and time.

Lab 4

- Exercise in the Lab about Insert Table.
- Creating a table and apply all the options as selecting cells, delete in table, delete cells
merging cells, splitting cells, insert text in Table.

Module: Microsoft power point 2016

Lab 1

An exercise that is given to students in the laboratory is include the following topics:

Creating new presentation (Blank presentation & template presentation)

- entering text to the slide
- changing the look of your text on slide
- adding theme and background to the slide
- saving the presentation

Lab 2

Students apply the following topics in the laboratory

Opening previous file

Adding new slides to the presentation

Insert some objects to the slides like (pictures, Word Art, media clips)

Insert to the presentation date and time, slide number and headers and

footers

Saving the presentation

Lab 3

Students apply the following topics in the laboratory

2- Types of viewing presentation

3- Re-arranging the slides.

4- Changing themes of slides

5- Changing the layout of the slides.

6- Deleting the slides.

7-Slide show and Types of it (from beginning, from current slide, hide & unhide a slide, show group of slides not all)

8-Saving the presentation

Lab 4

Students are adding Animation effects to the objects in each slide adding Slides transition to whole application and finally run their project.

Module: Microsoft Excel 2016

Lab 1

The following topics, which were explained in the theoretical lecture, are applied through an exercise that is given to students in the laboratory:

- Create a new blank workbook
- Adding a Worksheet
- Naming Worksheets
- Saving a Workbook
- Dealing with cells
- Dealing with rows and columns-part1

Lab 2

Complete the exercise that was given in the previous lecture by adding the topics of the second lecture, which includes:

- Dealing with rows and columns-part2
- Copying cell content
- Autofill
- Formatting numbers
- Dealing with text
- Sorting data
- Creating Formulas
- Using Functions
- Sum Functions
- Maximum and Minimum Value
- Inserting a Function (IF Function)

Lab 3

Complete the exercise that was given in the previous lecture by adding the topics of the third lecture, which includes:

- Count function
- COUNT BLANK Functions
- COUNT IF Functions
- COUNT A Functions
- Filter the data

Lab 4

Complete the exercise that was given in the previous lecture by adding the topics of the fourth lecture, which includes:

- Creating Charts
- Chart Title
- Apply a chart style
- Add Data Labels
- Add Axis Titles

Module: The Internet

Lab 1

- Definitions
- General Concepts on the Internet
- Set up your laptop to connect to a Wi-Fi network
- Detect the Wireless Security Key

Lab 2

- Open internet explorer
- Set your home page to www.google.com
- Turning off graphics
- Add a web page to your Favorites Menu
- Organize your favorites menu
- Save the current web page to your computer

Lab 3

- Open internet explorer
- Open yahoo search engine
- Sign up to yahoo mail
- Write new message
- Send it to your best friends
- Sign out from your email
- Close your internet explorer
- Shutdown

Lab 4

- Compose new message
- Reply to incoming message
- Forward the current lecture to your friends
- Delete message
- Create self-signature
- Block unliked person from your email
- Add new address to address book
- Sign out from email
- Shutdown

حقوق الانسان والديمقراطية

وصف المقرر

وزارة التعليم العالي والبحث العلمي	١. المؤسسة التعليمية
كلية الطب / حقوق الانسان والديمقراطية	٢. القسم الجامعي / المركز
حقوق الانسان والديمقراطية/مرحلة أولى	٣. اسم / رمز المقرر
http://uomosul.edu.iq/pages/ar/medicineMosul/97067	٤. الرابط
قانوني	٥. البرامج التي يدخل فيها
حضور الطالب امر ضروري ويمكن التعلم عن بعد	٦. أشكال الحضور المتاحة
٢٠٢٢-٢٠٢٣ / السنة الاولى	٧. الفصل / السنة
30 ساعة نظري	٨. عدد الساعات الدراسية (الكلي)
2022/11/12	٩. تاريخ إعداد هذا الوصف

أهداف المقرر

يهدف المقرر الى تدريس مادة حقوق الانسان والديمقراطية لطلبة المرحلة الاولى في كلية الطب .
حيث تمكن الطالب من دراسة حقوق الانسان والتعرف على مبادئها واساسياتها وكذلك التعرف على كل اقسام حقوق الانسان وكل المواثيق الدولية والداخلية المتعلقة بموضوع الدراسة ،اضافة الى التعرف على القوانين الداخلية للدولة ومدى تطبيق حقوق الانسان في كافة المجالات والاختصاصات فهي مادة تثقيفية قانونية .و تمكن الطالب من تطوير مستوى قراءته خاصة فيما يتعلق بطلاب المرحلي الاولى .

مخرجات التعلم وطرائق التعليم والتعلم والتقييم

- أ- المعرفة والفهم
- ١- تمكن الطالب من الاحاطة بموضوع حقوق الانسان والديمقراطية على مستويات مختلفة .
 - ٢- تمكن الطالب من اطلاعه على واقع تطبيق حقوق الانسان في المجتمع .
 - ٣- يتعرف الطالب من خل هذه المادة على كل القوانين الداخلية الخاصة بتطبيق حقوق الانسان .
 - ٤- يستطيع الطالب من خلال الدراسة فيما اذا كان يتمتع بحقوق الانسان ام لا؟ .
 - ٥ تقوي الطالب على فهم المصطلحات القانونية المتعلقة بحقوق الانسان

<p>ب - المهارات الخاصة بالموضوع</p> <p>ب1 - تمكن الطالب من فهم المصطلحات القانونية والتعرف على جميع اقسام حقوق الانسان .</p> <p>ب2 - تمكن الطالب من زيادة المفردات القانونية لدى الطالب .</p> <p>ب3 - تمكن الطالب من تطبيق القانون على ارض الواقع .</p> <p>ب4- البحث في النت عن مواضيع كمصدر لدراسته من خلال كتابة تقرير في موضوع معين .</p>
<p>طرائق التعلم والتعليم</p> <p>- المحاضرة النظري والمناقشة</p>
<p>طرائق التقييم</p> <p>- اختبارات تحريرية</p> <p>- مناقشة واختبارات شفوية.</p> <p>- منافسة فردية (اضافة درجات لمن يؤدي ما يطلبه الاستاذ اولاً) .</p>
<p>طرائق التعلم والتعليم</p> <p>طريقة المناقشة</p>
<p>طرائق التقييم</p> <p>الملاحظة</p> <p>اختبار شفوي</p> <p>الاختبارات التحريرية</p>
<p>د - المهارات العامة والمنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي) .</p> <p>د1- اعداد تقارير خاصة بالموضوع</p> <p>د2-المنافسة بين الطلبة من خلال المشاركة</p>

بنية المقرر					
الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / المساق أو الموضوع	طريقة التعليم	طريقة التقييم
1-4	٤ ساعة	التعريف بحقوق الانسان	التعريف والخصائص	محاضرة نظري	اختبار
5-8	٤ ساعة	تصنيفات حقوق الانسان	الحقوق المدنية والسياسية	محاضرات نظري	اختبار
9-11	٤ ساعة	حقوق الانسان الجماعية	حقوق الشعوب في تقرير مصيرها	محاضرات نظري	اختبار

اختبار	محاضرات نظري	حقوق الأسير	حقوق الانسان في زمن الاحتلال والحرب	٤ ساعة	12-15
اختبار	محاضرات نظري	تعريف الديمقراطية وانواعها	الديمقراطية	٦ ساعة	16-19
اختبار	محاضرات نظري	تعريف الحكومات وانواعها	الحكومات	٨ ساعة	20-24

البنية التحتية	
كتب قانونية والاستعانة بمصادر من الانترنت	<p>القراءات المطلوبة :</p> <ul style="list-style-type: none"> ▪ النصوص الأساسية ▪ كتب المقرر ▪ أخرى
قاعة دراسية	متطلبات خاصة
لا يوجد	الخدمات الاجتماعية

المحاضرات النظرية

الموضوع: مقدمة عن حقوق الانسان

- **محاضرة ١: تعريف حقوق الانسان**
 - الخصائص او السمات العامة لحقوق الانسان
- **محاضرة ٢:**
 - حقوق الانسان في الشريعة الاسلامية
 - مميزات او خصائص حقوق الانسان في الشريعة الاسلامية
- **محاضرة ٣: بعض تطبيقات حقوق الانسان في الشريعة الاسلامية**
 - حق الانسان في الحياة
 - حق الانسان في الامن والطمأنينة
 - الحق في الحرية الانسانية
- **محاضرة ٤: تصنيفات حقوق الانسان**
 - ضابط او معيار الظروف التي يتم في سياقها تطبيق حقوق الانسان.
 - ضابط او معيار نطاق مضمون حقوق الانسان وتطورها التاريخي.
- **محاضرة ٥: الحقوق المدنية**
 - حقوق مقرررة لحماية الكيان المادي للإنسان.
 - حقوق مقرررة لحماية الكيان المعنوي للإنسان.
- **محاضرة ٦: الحقوق السياسية**
 - السمات او الخصائص التي تتميز بها الحقوق السياسية.
- **محاضرة ٧: الحقوق الاقتصادية والاجتماعية والثقافية**
 - الحق في التملك
 - الحق في الضمان الاجتماعي والحماية ضد البطالة
- **محاضرة ٨: الحقوق الجديدة للإنسان**
 - الحق في ان يحيا الانسان في بيئة نظيفة
 - الحق في التنمية
 - الحق في السلام
 - الحق في تداول المعلومات
- **محاضرة ٩: : حقوق الانسان الجماعية**
 - حق الشعوب في تقرير مصيرها.
 - المقصود بحق الشعوب في تقرير المصير.
 - شروط ممارسة حق الشعوب في تقرير مصيرها.
 - القيمة القانونية لحق الشعوب في تقرير مصيرها.
- **محاضرة ١٠: وسائل ممارسة الشعوب في تقرير مصيرها**
 - الاستفتاء الشعبي
 - قرار صادر عن هيئة ممثلة الشعب
 - الكفاح المسلح
- **محاضرة ١١: حقوق الاقليات**
 - تعريف الاقليات
 - المعايير العامة لتصنيف الاقليات
 - اهم حقوق الاقليات
- **محاضرة ١٢: حقوق الجماعات الضعيفة او المستضعفة**
 - المرأة
 - الاطفال
 - حماية السكان الاصليين
 - المعوقون
- **محاضرة ١٣: حقوق الانسان في زمن الاحتلال والحرب في القانون الدولي**

- تعريف القانون الدولي الانساني
- حقوق المدنيين في زمن الاحتلال
- **محاضرة ١٤: حقوق الانسان في زمن الحرب حسب اتفاقية جنيف الرابعة لعام ١٩٤٩**
- **محاضرة ١٥: حقوق اسير الحرب**
- تعريف اسير الحرب
- الفئات المشمولة بإصلاح اسير الحرب بموجب اتفاقية جنيف الثالثة لعام ١٩٤٩
- الحقوق المقررة لأسير الحرب

الحكومة الديمقراطية

- **محاضرة ١: المقدمة**
- تعريف الديمقراطية
- انواع الحكومات
- **محاضرة ٢: الحكومة الاستبدادية والحكومة القانونية**
- التعريف
- الخصائص
- المزايا والعيوب
- **محاضرة ٣: الحكومة المطلقة والحكومة المقيدة**
- التعريف
- الخصائص
- المزايا والعيوب
- **محاضرة ٤: الحكومة الملكية والحكومة الجمهورية**
- التعريف
- الخصائص
- المزايا والعيوب
- **محاضرة ٥: طرق اختيار رئيس الجمهورية**
- اختيار رئيس الجمهورية بواسطة الشعب
- اختيار رئيس الجمهورية بواسطة البرلمان
- اشتراك الشعب والبرلمان في انتخاب رئيس الجمهورية
- **محاضرة ٦: الحكومة الفردية وحكومة الاقليات وحكومة الشعب**
- التعريف
- المزايا
- العيوب
- **محاضرة ٧: الحكومة الديمقراطية**
- تعريفها
- نشأة او تاريخ الديمقراطية
- خصائص الديمقراطية وتميزها عن بعض المصطلحات
- **محاضرة ٨: صور الحكومة الديمقراطية**
- الديمقراطية المباشرة
- تعريفها ... خصائصها
- مزاياها عيوبها
- **محاضرة ٩: الديمقراطية غير المباشرة او النيابية (النظام النيابي)**
- تعريفها
- خصائصها
- مزاياها عيوبها
- **محاضرة ١٠: الديمقراطية شبه المباشرة**
- تعريفها وخصائصها
- مزاياها وعيوبها
- **محاضرة ١١: مظاهر او وسائل الديمقراطية شبه المباشرة**
- الاقتراح الشعبي

- الاستفتاء
- الاعتراض الشعبي
- اقالة الناخبين للنواب
- الحل الشعبي
- عزل رئيس الجمهورية
- **محاضرة ١٢: اسناد السلطة في النظام القانوني**
- الوصف القانوني للانتخاب واساليبه والاجراءات التمهيديّة له
- الانتخاب حق شخصي
- الانتخاب وظيفة
- **محاضرة ١٣: اساليب الانتخاب (تكوين هيئة الناخبين)**
- أسلوب الاقتراع المقيد
- أسلوب الاقتراع العام
- **محاضرة ١٤: الاجراءات التمهيديّة للانتخابات**
- اعداد جدول الناخبين
- نظم الانتخاب
- **محاضرة ١٥: الدولة القانونية**
- تعريفها
- ضمانات الدولة القانونية
- الحقوق والحريات العامة
- مضمون مبدأ الفصل بين السلطات

English language

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Dean's Office/ Website Unit	
Name of Academic Program	MBCbB	
Academic Year/level	2202-2023 /1st year	
Title of the course	English Language	
Code	MCEn108	
Total Course Hours	Practical hours=60	Total=90 hours
	Theoretical hours=30	
Date of specification approval	16/11/ 2022	

General Aims of Course

1. Communication of the students with the English language and improve their language ability in their medical field.
2. To develop students' understanding of the nature of the basic rules of the English language necessary for writing and speaking.
3. Applying English rules by giving examples that help students understand rules of English in order to improve their level of writing in English language in an academic form.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Enable the student to comprehend the subject of the English language at different levels.2. Enable the student to rate his / her reading and evaluates the level of his writing style.3. To enable the student analyze his / her writing and attempt to implement the techniques of developing writing style and investigate how to use and benefit from them.4. To help the student how to produce or construct his/ her speech or conversation in accurate way.
Intellectual Skills	<ol style="list-style-type: none">1. To recognize and implement the rules of the English language necessary for writing and speaking.2. To compose a good piece of writing in the accurate English language.3. To argue the ideas in any spoken or written text in a logical and scientific way.4. To analyze and differentiate the rules and the foundations of the English language by analyzing pure medical texts which are the core of their medical specialization to consolidate these rules in their minds.
Professional Skills	<ol style="list-style-type: none">1. To use the methods of the English language and get a benefit from it in the field of his medical work, such as preparing PowerPoint for seminars and writing a short medical scientific article.2. To employ various and tremendous linguistic vocabulary.3. To assess various types of articles and how to argue them in the subject of the medical field.4. To estimate language of medical texts in an accurate way.
General and Transferable Skills	<ol style="list-style-type: none">1. Composing short medical paragraphs and articles on the medical subject in the classroom.2. Implementing the exercise.3. Writing and rewriting medical texts.

Attitude outcomes	The students will be able to evaluate texts well. Add, they will be able to recognize the defects of any text at the level of language. Consequently, the students will get knowledge the importance of producing coherent text.
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Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Unit one am/is/are/ unit 1- Presenting Complaints	3	3	Dr. Nida S. Omar
Unit 2: Countries Unit 2- Working in General Practice	3	3	Dr. Nida S. Omar
Unit 3: Jobs Unit 3- instructions & Procedures	3	3	Dr. Nida S. Omar
Unit 4: Our/Their Unit 4- Explaining & Reassuring	3	3	Dr. Nida S. Omar
Unit 5: Sports, Food & Drinks Unit 5-Dealing with Medication	3	3	Dr. Nida S. Omar
Unit 6: The time unit 6- Lifestyle	3	3	Dr. Nida S. Omar
Unit 7: Question words Unit 7-Parents and Young Children	3	3	Dr. Nida S. Omar

Unit 8: Rooms & Furniture Unit 8- Communication	3	3	Dr. Nida S. Omar
Unit 9: Saying years Unit 9-Working in Psychiatry	3	3	Dr. Nida S. Omar
Unit 10: Past Simple Unit 10- Terminal illness and Dying	3	3	Dr. Nida S. Omar

Teaching and learning methods	
1. Theoretical lectures	<ul style="list-style-type: none"> -Understanding method Identify, classify, and interpret the structure of English texts. -Discussion method Recalling the information . - Evaluation methods Observation -Applying methods How to analyze a text and solve it correctly.
2. Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
3. Seminars and presentations	No more

Assessment methods	
1. Formative assessments	1. Requesting the student to do short comparative assignments to know how the students are performing

	<p>against their colleagues as homework.</p> <p>2. Classroom discussion and quizzes</p> <p>3. Think –pair -share :</p> <p>Students will be in pairs or in small - groups in order to answer question or to solve a problem associated with allocated reading or a particular topic.</p>
2. Summative assessments	<p>1. Standardized tests</p> <p>2. final report</p> <p>3.</p>
3. Pass mark	50%

Resources and requirements	
Essential text books	<p>1. Headway academic skills for beginners</p> <p>2. Oxford English for careers: Medicine 1 student’s book (practical)</p>
Recommended text books	<p>1. Murphy, R. (2012).English Grammar in Use. Cambridge University Press, London.</p> <p>2. Eastwood, J. (1994). Oxford Guide to English Grammar. Oxford University Press. Hong Kong.</p> <p>3. Downing, A and Locke, Ph. (2006). English Grammar. Routledge.</p>
Other resources	medical articles

Theoretical lectures

First semester

The Module: Unit one / Hello

- **Lecture 1**
am/ are/ is, my/your ·
- **Lecture 2**
This is ... • How are you? • Good morning!
- **Lecture 3**
What's this in English? • Numbers 1-10 • Plurals

The Module: Unit Two / Your world

- **Lecture 4**
Countries
- **Lecture 5**
he/she/ they, his/her • Where's he from?
- **Lecture 6**
fantastic/ awful/ beautiful • Numbers 11-30

The Module: Unit Three/ All about you

- **Lecture 7**
Jobs • am/are/ is
- **Lecture 8**
Negatives and questions
- **Lecture 9**
Personal information • Social expressions (1)

The Module: Unit Four / Family and Friends

- **Lecture 10**
our/their • Possessive 's
- **Lecture 11**
The family • has/have
- **Lecture 12**
The alphabet

Module: Five / The way I Live

- **Lecture 13**
Sports/ Food/ Drinks
- **Lecture 14**
Present Simple - I/you/ we/ they • a/an
- **Lecture 15**
Languages and nationalities • Numbers and prices

Second Semester

Module: Unit Six / Every day

➤ **Lecture 1**

The Time • Present Simple-he/she

➤ **Lecture 2**

always/sometimes/never

➤ **Lecture 3**

Words that go together • Days of the week

Module: Unit seven / My favourites

➤ **Lecture 4**

Question words

➤ **Lecture 5**

me/him/us/them

➤ **Lecture 6**

this/that / Adjectives • Can I . . . ?

Module: Unit eight / Where I live

➤ **Lecture 7**

Rooms and furniture

➤ **Lecture 8**

There is/ are • Prepositions

➤ **Lecture 9**

Directions

Module: Unit Nine/ Times past

➤ **Lecture 10**

Saying years • was/were born

➤ **Lecture 11**

Past Simple - irregular verbs

➤ **Lecture 12**

have/do/go • When's your birthday?

Module: Unit Ten / have/do/go • When's your birthday?

➤ **Lecture 13**

Past Simple - regular and irregular

➤ **Lecture 14**

Questions and negatives

➤ **Lecture 15**

Sport and leisure • Going sightseeing

Practical hours

First semester

The Module: Unit 1: Presenting Complaints

- **Lecture 1**
 1. Patient care: Dr Gillian Henderson / cardiologist
 2. Cultural project: understanding culture / interpreting body/ language
- **Lecture 2**
 1. Listening: Personal details / presenting complaints
 2. Speaking: Diagnosing / presenting complaints
 3. Writing case report
- **Lecture 3**
 1. Language spot: asking short and gentle question/Tenses in present complaints
 2. Vocabulary: describing pain
 3. Pronunciation: medical terms / word stress

The Module: Unit 2:- Working in General Practice

- **Lecture 4**
 1. Patient care: Short questions in the general history
 2. Culture project: Research into general practice in the UK
- **Lecture 5**
 1. Listening: description of a GP's job/ a case history/ short questions in the general history
 2. Reading: Social factors in general practice
 3. Speaking: GP statistics / case history / role-play
 4. Writing: A referral letter
- **Lecture 6**
 1. Language spot: present perfect and past simple.
 2. Vocabulary: medical jobs/ sign and symptoms/ non- technical language
 3. Pronunciation: medical jobs / main stress/ question rising and falling intonation

The Module: Unit 3- instructions & Procedures

- **Lecture 7**

Patient care: Dr Franco Carulli newly qualified doctor / Preparation for carrying out a procedure.
- **Lecture 8**
 1. Listening: preparing for the first ward round / giving instructions
 2. Reading: direct observation of procedural skills
 3. Speaking: explaining a process (hand washing) / explaining a procedure / case presentation
 4. Writing: case notes
- **Lecture 9**

1. Language spot: giving instructions / explaining procedures/ making polite requests
2. Vocabulary: instructions for a procedure

The Module: Unit 4: Explaining and reassuring

- **Lecture 10**
 1. Culture and project: research into complications
- **Lecture 11**
 1. Listening: students care / explaining a gastroscopy/ emphasis / discussing complications.
 2. Reading: gastroscopy
 3. Speaking: explaining procedures / acknowledging / visual cues.
 4. Writing: an explanation of possible complications
- **Lecture 12**
 1. Language spot: explaining procedures with the present / passive and going to future.
 2. Vocabulary: adjectives to describe procedures/explaining complications and reassuring the patient.
 3. Pronunciation: word stress / suffixes

Module: Unit 5: Dealing with medication

- **Lecture 13**
 1. It is my job: Joyce Came/ nurse practitioner
 2. Patient care: describing drugs in hospitals
 3. Culture project: research into clinical reporting
- **Lecture 14**
 1. Listening/ a patient's chart / benefits and side effects
 2. Reading: concordance
 3. Speaking: a drug chart/ explaining medications
 4. Writing: clinical incident reporting
- **Lecture 15**
 1. Languages spot: phrasal verbs / explaining side effects (can / may)
 2. Vocabulary: abbreviations

Second Semester

Module: Unit 6: lifestyle

- **Lecture 1**
 1. Patient care: sympathy and empathy
 2. Culture project: research in medicine
- **Lecture 2**
 1. Listening: family history and social history/ being sympathetic
 2. Reading: overweight and obesity
 3. Speaking: making changes/ stress/ exam practice

4. Writing: an email about dealing with stress
- **Lecture 3**
1. Language spot: encouraging patient and making suggestions
2. Vocabulary: language for exercise
3. Pronunciation: word stress in noun phrases

Module: Unit 7: Parents and young children

- **Lecture 4**
 1. It is my job: Dr Nasrin Ahmed/ reassurance- paediatrician
 2. Culture project: baby's six –week check/ applying for work
- **Lecture 5**
 1. Listening: talking about oneself / reassuring an anxious parent / sharing experiences
 2. Reading: recommendations for the use
 3. Speaking: empathizing / practicing for OSCE scenarios
 4. Writing: reflection on one's own experiences
- **Lecture 6**
 1. Language spot: first vs second conditional
 2. Vocabulary: qualities of a good paediatrician / non- technical language/ signs and symptoms / asking and responding to open questions

Module: Unit 8: communication

- **Lecture 7**
 1. Patient care: understanding why patient can appear vague
 2. Culture project: information web search: TWEAK
- **Lecture 8**
 1. Listening: acknowledging verbal cues / appropriate responses
 2. Reading: Barriers to prevention
 3. Speaking: considering what the patient thinks/ dealing with a defensive patient
 4. Writing: writing accurately for training or work application
- **Lecture 9**
 1. Language spot: open and closed questions
 2. Vocabulary: alcohol
 3. Pronunciation: stress the sentence

Module: Unit 9: writing in psychiatry

- **Lecture 10**
 1. It is my job: Dr Tom Tumer –psychiatrist
 2. Patient care: asking about self-harm
- **Lecture 11**
 1. Listening: describing patients
 2. Reading: eliciting the history
 3. Speaking: mini-mental state examination
 4. Writing: notes from a mental state examination
- **Lecture 12**
 1. Language spot: the simple past and the past perfect/wishes and consequences in negotiations

2. Vocabulary: appearance. Behaviour, and manner
3. Pronunciation: weak forms

Module: Unit 10: Terminal illness and dying

➤ **Lecture 13**

1. It is my job: Frances MacCregor/ Marie Curie/ nurse
2. Culture and project: care in the community

➤ **Lecture 14**

1. Listening: recognizing and dealing with patients' emotions / informing a relative about death
2. Reading: breaking bad news
3. Speaking: breaking bad news/ a debate about donor cards / coping mechanism
4. Writing: preferred an example of good practice

➤ **Lecture 15**

- 1, Language spot: expressing likes, dislikes, and preferences
- 2, vocabulary: reactions to bad news / words and phrases related to death

منهاج المرحلة الثانية

SECOND YEAR CURRICULUM

توزيع الوحدات والساعات للمرحلة الثانية

ت	المواد الدراسية	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات النظرية	عدد الوحدات العملية	مجموع عدد الوحدات
١	الفسلجة	١٥٠	٩٠	١٠	٣	١٣
٢	التشريح	٦٠	١٨٠	٤	٦	١٠
٣	الكيمياء الحياتية	٩٠	٦٠	٦	٢	٨
٤	الأنسجة	٤٥	٩٠	٣	٣	٦
٥	الأجنة	٣٠		٢		٢
٦	أخلاقيات الطب	٣٠		٢		٢
	المجموع	٤٠٥	٤٢٠	٢٧	١٤	٤١

SECOND YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Practical hours	Theoretical units	Practical units	Total units
1	physiology	150	90	10	3	13
2	Anatomy	60	180	4	6	10
3	Biochemistry	90	60	6	2	8
4	Histology	45	90	3	3	6
5	Embryology	30		2		2
6	Medical ethics	30		2		2
	Total	405	420	27	14	41

Physiology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Medical Physiology	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 2 nd year	
Title of the course	Medical Physiology	
Code	MCPs201	
Total Course Hours	Practical hours=90	Total=240
	Theoretical hours=150	
Date of specification approval	11/11/2022	

General Aims of Course

Human Physiology is the study of how the human organs work normally. As well as how these organs work in coordination with each other under normal conditions. This coordination leads the human to use the physiology when exercise, read, breathe, eat, sleep, move or do just about anything. Human physiology aims to study all the physiological organ systems like: the cell and body fluid, the muscular system, the nerve and autonomic nervous system, the blood and immune system, the respiratory system, the cardiovascular system, the digestive system, the endocrine system, the reproductive system, the renal and acid base balance and the central nervous system. Each physiological system works to perform different functions in the body. In addition to that, each system works with every other system to keep the human alive.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	1: Differentiate between the basic function of each body system of the human being. 2: have a good knowledge about the clinical physiology
Intellectual Skills	1. mention all the clinical investigation that are needed to investigate the organ systems and the normal ranges levels. 2. ask an important questions at the end of lectures that improve their thinking and their knowledge. 3. the students response to the lecturer questions at the end of each lecture that improve their memory and ways of answer. 4. present the seminars and they are ready to answer the teachers questions about the seminar information. 5. prepare poster about any physiological system and discuss the poster and answer any asked question from teachers and students.
Professional Skills	1. perform all the clinical investigation of human physiology at the medical laboratory or at hospital.
General and Transferable Skills	1. have a skills in using medical instrument and how they can connect them to the subjects. 2. defend them self when there is wrong results as they know the reason of the fault (as technical problem in instruments) 3. perform experiments and compare their result with normal ranges and they can give their decision and diagnosis
Attitude outcomes	The student appreciate their medical information and able to use and keep the all instrument in safe way.

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Introduction to physiology	1		Dr. Afraa Alameen
Cell and body fluid	4	-	Dr. Janan Alrefaee
Muscle and nerve	9		Dr. Bushra Aldbak , Dr. Hind Alane

Autonomic nervous system	5		Dr. Afraa Alameen
Blood physiology	14	14	Dr. Janan Alrefae
Respiratory system physiology	14	10	Dr. Afraa Alameen
Cardiovascular system	14	10	Dr. Zayd Alatrakjy
Gastrointestinal tract	14		Dr. Rajaa Alhasan
Endocrine	14		Dr. Zayd alatrakjy
Reproductive	8		Dr. Rajaa Alhasan
Renal and acid base	18		Dr. Janan Alrefae
Sensory nervous system	10	3	Dr. Afraa Alameen
Motor nervous system	10	3	Dr. Rajaa Alhasan
High brain function	5		Dr. Rajaa Alhasan
Special sense	10	5	Dr. Zayd Alatrakjy

Teaching and learning methods	
Theoretical lectures	Lectures :The student are distributed in 2 large groups
Practical labs or clinical sessions	The students are distributed into small groups each of 10-15 students.
Seminars and posters presentations	Each 5 students participate in preparing and presenting the seminars and posters.

Assessment methods	
Formative assessments	1. logbook 2. Q& A at the end of the lectures

	3. students will participate in making questions and answered them at the end of the lectures
Summative assessments	1.mid year exam (practical 10%+theoretical 30%) 2.final exam (practical 15%+ theoretical 40%) 3. quiz 2% +seminars and other activities 3%)
Pass mark	50%

Resources and requirements	
Essential text books	1. Guyton and Hall Textbook of Medical Physiology 2..Ganong' s Review of Medical
Recommended text books	Lippincott's Illustrated Reviews: Physiology
Other resources	Lectures and practical labs information

Links	
Respiratory /Dr. Afraa	https://drive.google.com/drive/folders/1fcNy8OH4BDIcwqs6qdg3NSCZSaq1Ei_q?usp=share_link
Muscle	https://drive.google.com/drive/folders/14_yo7Hj-8fI3do1d2ItBiwVoWOE3YCx?usp=share_link

Theoretical lectures

Module: Introduction of human physiology

Cell physiology and body fluid

- **Lecture 1:** Physiology of the Cell
 - Protoplasm
 - Cell membrane
 - The cytoplasmic organelles
 - Nucleus
 - Cell function
- **Lecture 2:** Transport through the cell membrane
 - Diffusion (simple and facilitated)
 - Osmosis
 - Active transport
 - Active Transport Through Cellular Sheets
- **Lecture 3:** Physiology of body fluids
 - Daily Intake and loss of Water
 - Body Fluid Compartments
- **Lecture 4:** Measurement of Fluid Volumes in the Different Body Fluid Compartments
 - Dilution Principle
 - Relation Between Moles and Osmoles
 - Osmolality and Osmolarity
 - Isotonic, Hypotonic, and Hypertonic Fluids

Module: Nerve physiology

- **Lecture 1:** What is a neuron?
 - Functions of neurons
 - Classifications of nerves
 - Functional division of neuron
- **Lecture 2:** What is myelination ?
 - Nodes of Ranvier
 - Salutatory conduction
 - Factors affecting the speed of conduction of an action potential in a nerve fiber
 - Myelination increases speed of nerve impulse conduction
 - Diameter of nerve fiber and conduction of action potential
 - Resting membrane potential in neurons
 - Geneses of resting membrane potential
- **Lecture 3:** Definitions
 - Stimulus
 - Subthreshold stimulus
 - Threshold stimulus
 - Suprathreshold stimulus
- **Lecture 4:** Action potential
 - Stages of action potential
 - Ionic basis of an action potential
 - Stimulus for nerve and muscle excitation

- Cathode Ray Oscilloscope
- Refractory period
- Threshold stimulus
- **Lecture 5:** Properties of mixed nerves
 - Summation of nerve impulses
 - Propagation of action potential
 - Plateau in some action potentials
 - Spontaneous rhythmicity
 - The effect of calcium ion on neuron excitability
 - Factors which inhibit nerve excitability
 - Orthodromic and antidromic conduction

Module: Muscle physiology

- **Lecture 1:** A single muscle fiber
 - Morphology of skeletal muscle fiber
 - Actin and myosin
 - The Sarcotubular system
 - Molecular mechanism of muscle contraction
 - Neuromuscular junction
 - Excitation – contraction coupling
 - Motor unit
- **Lecture 2:** Simple muscle twitch
 - Stimulus strength and muscle contraction
 - Increasing the force of contraction
 - Length-tension relationship
 - Increasing the force of contraction
 - Physiologic basis of twitch summation and tetanus
 - Skeletal muscle tone
 - Muscle fatigue
 - Types of muscle contraction
 - Fast fibres
 - Slow fibres
 - Muscle action potential
- **Lecture 3:** Smooth muscle morphology
 - Multiunit-smooth muscle
 - Single – unit smooth muscle
 - Comparison of contractile unit of smooth muscle cell with skeletal muscle
 - Comparison of smooth muscle contraction with skeletal muscle contraction
- **Lecture 4:** Neuromuscular junction of unitary smooth muscle
 - Membrane potentials and action potentials in smooth muscle
 - Spontaneous electrical activity and slow wave
 - Excitation of smooth muscle by stretch
 - Smooth muscle contraction in response to local tissue factors
 - Effect of hormones on smooth muscle contraction
 - Excitatory and inhibitory transmitter substances
- **Lecture 5:** Morphology of cardiac muscle
 - Intercalated disc
 - Action potentials in cardiac muscle
 - Refractory period of cardiac muscle

- Excitation- contraction coupling
- Frank- Starling Law
- Effect of catecholamine
- Spontaneous rhythmicity

Module: Autonomic nervous system

- **Lecture 1:** Autonomic nervous system (ANS)
 - Introduction
 - Divisions of the nervous system
- **Lecture 2:** Basic characteristics of autonomic NS
 - Comparison of autonomic and somatic nerves
 - Basic characteristics of sympathetic and parasympathetic function
 - Autonomic nervous system control
 - Basic characteristics of autonomic NS
 - Physiologic anatomy of ANS
 - ANS receptors
- **Lecture 3:** Sympathetic nervous system
 - General organization of the peripheral portions of the sympathetic nervous system
 - The course of the sympathetic fibers
 - Adrenergic receptors
- **Lecture 4:** Parasympathetic Division
 - Physiologic anatomy of the parasympathetic division
 - Parasympathetic receptors
 - Effects of sympathetic and parasympathetic stimulation on specific organs
 - Enteric nervous system
- **Lecture 5:** Adrenal medulla
 - Function of the Adrenal Medulla
 - Value of the Adrenal Medulla
 - Autonomic Reflexes
 - Sympathetic and parasympathetic tone
 - Stress" response
 - Sympathetic alarm reaction

Module: Blood physiology

- **Lecture 1:** The blood
 - The blood cells
 - Differentiation of Blood Cells
- **Lecture 2:** Regulation of RBC Production-Role of Erythropoietin
 - Erythropoietin
 - Role of vitamin B 12(cyanocobalamin) and folic acid (pteroylglutamic) acid in RBCs genesis
- **Lecture 3:** Haemoglobin
 - Hb synthesis
 - Forms of Hemoglobin
 - Iron Metabolism
 - Destruction of Hemoglobin
- **Lecture 4:** Life Span and Destruction of Red Blood Cells, Anemia
- **Lecture 5:** Resistance of the Body to Infection
 - White Blood Cell

- Genesis of the White Blood Cells
- **Lecture 6:** Life Span of the White Blood Cells, WBCs function
- **Lecture 7:** Inflammation
 - Inflammation characteristics
 - Chemotaxis
 - Macrophage and neutrophil responses during inflammation
 - Formation of Pus
- **Lecture 8:** Immunity and Allergy
 - Immunity
 - Type of Immunity
 - Innate immunity
 - Acquired immunity
 - Nature of the Antibodies
 - Complement system for antibody action
- **Lecture 9:** T-Lymphocyte and cell-mediated immunity
 - Types of T-Lymphocyte cell
 - Immunization
- **Lecture 10:** Blood Types or groups
 - Blood antigens and antibodies
 - O-A-B Blood Types
- **Lecture 11:** Agglutination reaction in blood transfusion
 - Cross match test
- **Lecture 12:** Rh Blood Types
 - Rh Antigens (Rh-Positive and Rh-Negative People)
 - Characteristics of Rh transfusion reactions
 - The cause of erythroblastosis fetalis
- **Lecture 13:** Haemostasis and Blood Coagulation
 - Platelets
 - Intrinsic Pathway for Initiating Clotting
 - Extrinsic Pathway for Initiating Clotting
- **Lecture 14:** Clot end result
 - Lysis of Blood Clots by Plasmin
 - Prevention of blood clotting in the normal vascular system or intravascular anticoagulants
 - Prevention of blood coagulation outside the body
 - Blood Coagulation Tests

Module: Respiratory system

- **Lecture 1:** Introduction to respiratory system
 - Functions of respiratory system
 - Organization of Respiratory System
 - Anatomical classification
 - Trachea, bronchus, lungs and alveoli
- **Lecture 2:** Physiological anatomy of respiratory system
 - Physiological or functional classification of respiratory tract
 - Conducting zone
 - Respiratory zone
- **Lecture 3:** Pulmonary circulation
 - Physiologic Anatomy of the Pulmonary Circulatory System
 - Pulmonary Vessels, Bronchial Vessels

- Pressures in the Pulmonary System
- Blood Volume of the Lungs
- Effect of hydrostatic pressure gradients in the lungs on regional pulmonary blood flow
- Cardiac output and pulmonary blood pressure during exercise
- Pleural effusion
- **Lecture 4: Mechanics of respiration**
- Pulmonary ventilation
- Mechanical forces cause the movement of air
- Inspiration
- Expiration , forced expiration
- Pressure changes in the respiratory system (alveolar pressure, pleural pressure , transpulmonary Pressure)
- **Lecture 5: Pulmonary and Alveolar Ventilation**
- Minute Respiratory Volume Alveolar ventilation
- Dead space
- Wall of the bronchial tree
- Resistance to Airflow in the Bronchial Tree:
- Nervous and Local Control of the Bronchiolar Musculature
- Local Secretory Factors that Cause Bronchiolar Constriction
- **Lecture 6: Physical Principles of Gas exchange**
- Diffusion
- Partial Pressures of Individual Gases
- Pressures of Gases Dissolved in Water and Tissues Factors that determine the partial pressure of a gas dissolved in a fluid
- Factors affect the net rate of gas diffusion
- Vapor Pressure of Water
- Diffusion of gases through Tissues
- Compositions of alveolar air and atmospheric air
- Humidification of the air in the respiratory passages
- Oxygen concentration and partial pressure in the alveoli
- Diffusion of gases through the respiratory membrane
- **Lecture 7: Compliance of the lungs**
- Compliance diagram
- Principle of Surface Tension
- Surfactant
- Alveolar radius and Pressure caused by surface tension
- Effect of the thoracic cage on lung expansibility
- “Work” of Breathing
- Energy Required for Respiration
- **Lecture 8: Ventilation-Perfusion Ratio**
- What is the ventilation perfusion ratio
- Effect of the ventilation-perfusion ratio on alveolar gas concentration
- Concept of “Physiological Shunt
- Abnormalities of ventilation-perfusion ratio
- Abnormal VA /Q in chronic obstructive lung disease
- **Lecture 9: Pulmonary Volumes and Capacities**
- Pulmonary Volumes : tidal volume, inspiratory reserve volume expiratory reserve volume, residual volume
- Pulmonary Capacities: inspiratory capacity, functional residual capacity, vital capacity, total lung capacity

- Spirometry
- **Lecture 10:** Transport of oxygen
 - Transport of Oxygen in blood & tissue fluid
 - Significance of Blood P_{O2} and PCO₂ Measurements
- **Lecture 11:** Oxygen transport
 - Transport of oxygen in the dissolved state in the water of the plasma and blood cells
 - Oxygen-hemoglobin dissociation
 - Factors affecting Oxygen-Hemoglobin Dissociation Curve
 - Transport of oxygen during strenuous exercise
 - The Bohr Effect
- **Lecture 12:** Carbone dioxide transport
 - The CO₂ pressures in different parts of the body
 - Ways of transport of Carbon Dioxide in the Blood
 - Chloride shift
 - Carbon Dioxide Dissociation Curve
 - Haldane Effect
- **Lecture 13:** Regulation of respiration
 - Neural control
 - Chemical control
 - Respiratory centers
 - Reflex modification of breathing
 - Non-neural factors affecting respiration
 - Non respiratory air movement
- **Lecture 14:** Diagnosis and treatment of some respiratory disorders
 - Cough Reflex
 - Sneeze reflex
 - Hiccups
 - Respiratory sounds
 - Study of Blood Gases and Blood pH
 - Hypoxia, Hypercapnia, Dyspnea , Cyanosis
 - Lung diseases : Asthma , Emphysema

Module: Cardiovascular system

- **Lecture 1:**The circulatory system
 - Introduction
 - The heart is a dual [two] pump:
 - Blood flow through the heart
- **Lecture 2:** Fibrous-skeleton of the valves and Heart muscle
 - Heart muscle
 - Electrical activity of the heart
- **Lecture 3:** Inter-atrial pathway , Inter- nodal pathway and Ventricular – excitation
 - Atrial excitation
 - Inter-atrial pathway
 - Inter- nodal pathway
- **Lecture 4:** Cardiac output
 - Stroke-volume
- **Lecture 5:** Heart rate
 - Autonomic influences on the S-A node

- **Lecture 6:** Effect of sympathetic and para-sympathetic stimulation on the heart
 - Sympathetic stimulation of the S A and A-V node
 - Para-sympathetic stimulation of the S A and A-V node
- **Lecture 7:** The mechanical events of the cardiac cycle
 - Mid-ventricular diastole
 - Late-ventricular diastole
 - Ventricular-excitation and onset of ventricular systole
- **Lecture 8:** Heart –sounds
 - First heart sound
 - Second heart sound
- **Lecture 9:** Nourishing the heart muscle [coronary blood flow] Coronary blood flow occurs during diastole
 - Coronary blood flow occurs during systole
- **Lecture 10:** Blood –pressure
 - Compliance or dispensability of the vessel walls
 - Volume of blood
- **Lecture 11:** Blood –flow and Resistance
 - Resistance to blood flow
 - Factors affecting blood flow
 - Parallel arrangement blood flow
- **Lecture 12:** Regulation of blood pressure
 - Neural and Hormonal
 - Other regulatory mechanisms for blood pressure
- **Lecture 13:** Capillaries, Veins and Lymphatic
 - Local chemical factors which produce relaxation of arterioles
 - The leakiness of various capillary beds
 - Factors enhance venous return
 - Pick and flow of lymph
- **Lecture 14:** Electro-cardiograph [ECG]
 - Parts of ECG
 - The Limb Leads
 - The Six Precordial (Chest) Leads
 - Electrical Axis of The Heart

Module: Endocrine system

- **Lecture 1:** What is Endocrinology
 - Endocrine functions
 - Definitions
 - Classes of hormones
 - Transport of hormones in the blood
 - Clearance of hormones from blood
 - Hormone receptors
 - Peptide hormones
 - Steroid hormones
 - Anatomy of hypothalamus
 - Hormones of hypothalamus
 - Hypophyseal- portal system
 - The major chemical classes & general mechanisms of hormones
- **Lecture 2:** The pituitary gland

- The posterior pituitary gland
- The location & structure of pituitary gland, its structural & functional relationships with the hypothalamus
- Chemical structure of ADH and oxytocin
- Functions of oxytocin
- Functions of ADH
- Regulation of ADH production
- Hormones of the hypothalamus
- Chemistry of growth hormone
- **Lecture 3:** Physiologic effects of growth hormone
 - Growth hormone action
 - Regulation of growth hormone secretion
 - Abnormalities of growth hormone secretion
 - Acromegaly
 - Gigantism
 - Dwarfism
- **Lecture 4:** Neuroendocrine regulation of each hormone
 - Prolactin hormone
 - Physiologic effect of prolactin hormone
 - Effect on other endocrine glands
- **Lecture 5:** Thyroid gland
 - Anatomy of thyroid gland
 - Formation and secretion of thyroid hormones
 - Thyroglobulin & chemistry of thyroxin & triiodothyronine formation
 - Physiologic functions of thyroid hormones
 - Effects of thyroid hormones on specific bodily mechanisms
- **Lecture 6:** The thyroid gland
 - Effect of thyroid hormones on cardiovascular system
 - Effect of Thyroid Hormone on Sexual Function
 - Regulation of thyroid hormone secretion
 - Diseases of the thyroid gland
 - Hyperthyroidism
 - Hypothyroidism
- **Lecture 7:** Parathyroid gland
 - calcium & phosphate regulation in the extra cellular fluid & plasma
 - Inorganic phosphate in extra cellular fluid
 - Non –bone physiologic effect of altered Ca & phosphate concentrations in the body fluids.
 - Absorption & excretion of calcium and phosphate
 - Renal excretion of calcium & phosphate
- **Lecture 8:** Vitamin D
 - Actions of vitamin D
 - Parathyroid hormone
 - Effect of PTH on calcium & phosphate concentration in ECF
 - Effect of PTH on bone
 - Effect of PTH on intestine
 - Control of PTH secretion by calcium ion concentration
 - Calcitonin
- **Lecture 9:** Adrenal Gland
 - The corticoids , mineralocorticoids ,glucocorticoids
 - and androgens

- Synthesis and secretion of the adrenocortical hormones
- Mineralocorticoids include
- Glucocorticoids
- Functions of the mineralocorticoids – aldosterone
- Aldosterone stimulates sodium and potassium transport in sweat glands , salivary glands & intestinal epithelial cells
- Regulation of aldosterone secretion
- Functions of the Glucocorticoids
- **Lecture 10:** Effect of cortisol on carbohydrate metabolism
- Effect of cortisol on carbohydrate metabolism
- Cortisol is important in resisting stress & inflammation
- Anti-inflammatory effect of high levels of cortisol
- Regulation of cortisol secretion by ACTH from the anterior pituitary
- Adrenal Androgens
- **Lecture 11:** Pancreas
- Insulin and its metabolic effects
- Effect of Insulin on Carbohydrate Metabolism
- Effect of Insulin on Fat Metabolism
- Effect of Insulin on Protein Metabolism and on Growth
- Factors and Conditions That Increase or Decrease Insulin Secretion
- **Lecture 12:** Pancreas
- Control of Insulin Secretion
- Feedback Relation Between Blood Glucose Concentration and Insulin Secretion Rate
- Glucagon and its function
- Effect of glucagon on glucose metabolism
- Regulation of glucagon secretion
- **Lecture 13:** Pancreas
- Somatostatin inhibits glucagon & insulin secretion
- Diabetes Mellitus
- **Lecture 14:** Pineal gland
- Anatomy of the Pineal Gland
- Melatonin: The Pineal Gland Hormone

Module: Gastro intestinal system GIT

- **Lecture 1:** The GI tract component
- The major functions of the GI tract
- **Lecture 2:** Electrical activity in GI smooth muscle
- Slow wave AP.
- Spike wave
- **Lecture 3:** Regulating motility and secretions of GIT
- The role of intrinsic and extrinsic nerves in regulating motility and secretions
- **Lecture 4:** The stomach physiology
- Function of stomach in digestion
- **Lecture 5:** Gastric motility
- Mechanism and control of gastric motility
- **Lecture 6:** Vomiting
- The process of vomiting ,

- what stimulates it, and how it is controlled
- **Lecture 7:** Liver and gallbladder physiology
- Liver and gallbladder functions
- Regulation of secretion
- **Lecture 8:** Gallbladder
- Secretion of bicarbonate ,
- Function in neutralizing gastric acid
- **Lecture 9:** Pancreas physiology
- Pancreatic functions, Parts
- Hormones
- **Lecture 10:** The pancreatic enzymes
- Role of each enzyme in digestion
- **Lecture 11:** The small intestinal 1
- Intestinal functions
- Secretion
- **Lecture 12:** Intestinal secretions
- **Lecture 13 :** Large intestine
- Large intestine
- motility and secretion
- **Lecture 14:** Process of defecation
- Defecation reflexes

Module: Reproduction

- **Lecture 1:** Female reproductive system
- Anatomy
- Gonadotropic hormones and their effects on the ovaries
- Ovarian cycle
- Follicular phase
- Functions of granulosa cells
- Ovulation
- Indicators of ovulation
- Luteal phase of ovarian cycle
- **Lecture 2:** Endometrial cycle
- Proliferative phase (estrogen phase)
- Secretory phase (progestational phase)
- Functions of estrogens
- Functions of progesterone
- Vaginal cycle
- **Lecture 3:** Menstruation
- Regulation of female monthly cycle
- **Lecture 4:** Menopause
- Female fertility
- Hormonal suppression of fertility "pills"
- Minipills
- **Lecture 5:** Physiology of pregnancy
- Diffusion of oxygen through the placental membrane
- Diffusion of co2 through placental membrane
- Diffusion of foodstuffs through the placental membrane
- Response of mothers body to pregnancy

- Hormonal changes
- Estrogen functions
- Progesterone functions
- Human chorionic gonadotropin functions
- Human chorionic somatomammotropin functions
- Other hormonal changes
- Other changes in pregnancy
- Cardiac changes
- Changes in circulatory system
- Changes in renal system
- Respiratory changes
- Changes in alimentary tract
- **Lecture 6:** Parturition& lactation
 - Parturition
 - Lactation
 - Ejection of milk
 - Suppression of sexual cycle during nursing
- **Lecture 7:** Physiology of male reproduction
 - Anatomy
 - Function of the testes
 - Inhibin
 - Androgen binding protein
 - Estrogen
 - Interstitial cells of Leydig
 - Androgen
- **Lecture 8:** Function of prostate gland& Function of seminal vesicles
 - Spermatogenesis
 - Hormonal factors that stimulate spermatogenesis
 - Formation of sperm
 - Acrosome reaction
 - Maturation of sperm in epididymis
 - Capacitation of spermatozoa
 - Semen
 - Function of prostate gland
 - Function of seminal vesicles
 - Effect of temperature on spermatogenesis
 - Neuroendocrine regulation of the testis

Module: Special senses

- **Lecture 1:** The sense of hearing
 - Anatomy of the ear
 - Physiology of the ear
- **Lecture 2:** Impedance matching
 - lever principle
 - Attenuation of Sound
- **Lecture 3:** The vestibular system
 - The utricle and saccule
 - Semicircular Ducts
- **Lecture 4:** The sense of smell
 - Olfactory Cells

- Stimulation of the Olfactory Cells
- **Lecture 5:** Transmission of smell signals in CNS
- Neuronal pathway (afferent and efferent)
- **Lecture 6:** The sense of taste
- Primary Sensations of Taste
- Mechanism of Stimulation of Taste Buds
- Transmission of taste sensation
- **Lecture 7:** The eye
- Anatomy of the eye
- **Lecture 8:** Visual acuity
- Foveal Region of the Retina
- Clinical Method for Stating Visual Acuity
- **Lecture 9:** Physiology of vision
- The mechanism accommodation
- Optics of the Eye
- **Lecture 10:** Color vision
- Photochemistry of Vision
- Light and Dark Adaptation

Module: Central nervous system (sensory +motor + high brain function)

- **Lecture 1:** Introduction to central nervous system
- The anatomy of the brain
- Functions of the nervous system
- Levels of Central Nervous System Function
- Nervous tissue structure
- **Lecture 2:** The general characteristics of the somatosensory system
- Central Nervous System Synapse
- Chemical synapse
- Electrical synapses
- Summation
- Fatigue
- Divergence
- Convergence
- Receptor Potentials
- **Lecture 3:** Somatosensory Cortex
- Function of the somatosensory area
- Lesions
- **Lecture 4:** Sensory Pathways for Transmitting Somatic Signals into the CNS
- The anatomy and function of the dorsal column-medial lemniscal pathway
- The anatomy and function of the ventral spinothalamic pathway
- Segmental Fields of Sensation—The Dermatomes
- Sensory Stimuli and Receptors
- Adaptation of Receptors
- **Lecture 5:** Pain sensation
- Types of Pain
- Hyperalgesia
- Pain Receptors
- Types of Stimuli
- Transmission of Pain Signals into the CNS

- Visceral pain
- Referred pain
- Headaches
- Analgesic System
- **Lecture 6:** Thermal sensation
 - Thermal Receptors
 - Adaptation of Thermal Receptors
 - Mechanism of stimulation of thermal receptors
 - Thermal pathway
- **Lecture 7:** Somatic sensation
 - Position, vibration and touch
 - Tactile sensation
 - Position Senses Vibratory Sensation
 - Pathway of Tactile sensation
- **Lecture 8:** Regulation of body temperature
 - Normal body temperatures
 - Core Temperature
 - Skin temperature
 - Body temperature control
 - Heat production
 - Heat loss
 - Insulator system of the body
 - Mechanism of sweat secretion
 - Regulation of Body Temperature
 - Behavioral Control of Body Temperature
 - Fever
 - Heatstroke
 - Frostbite
- **Lecture 9:** Organization of motor nervous system
 - Spinal Cord and Motor Functions
- **Lecture 10:** Reflexes
 - Types of reflexes, Stretch reflex
- **Lecture 11:** Motor cortex
 - Primary motor area
 - Premotor area
- **Lecture 12:** Descending Tracts
 - The pyramidal system
 - The structure and function of the pyramidal pathways
- **Lecture 13:** The extrapyramidal system .
 - The structure
 - Function of the extrapyramidal pathways
- **Lecture 14:** Movement
 - Types of movements
- **Lecture 15:** Corticobulbar Pathway
 - Anatomy and functions of the corticobulbar
- **Lecture 16:** Corticospinal pathways
 - Anatomy
 - Functions of the corticospinal pathways
- **Lecture 17:** Cerebellum
 - Function of cerebellum and their input and out put
- **Lecture 18:** Cerebellum

- Lesions of cerebellum
- **Lecture 19:** Upper motor neuron and lower motor neuron
 - The differences between lower motor neuron (flaccid) and upper motor neuron (voluntary) lesions.
 - The relative roles of all the descending pathways on the control of motor neurons
- **Lecture 20:** Basal ganglia
 - The function of the basal ganglia and its connection Lesions of
- **Lecture 21:** Basal ganglia
 - Lesions of basal ganglia
- **Lecture 22:** Sleep
 - Types of sleep
- **Lecture 23:** EEG electrocephalography (EEG)
 - Type of brain waves and epilepsy
- **Lecture 24:** Learning
 - Learning mechanism
- **Lecture 25:** Memory
 - Types of memory

Module: Renal system and acid base balance

- **Lecture 1:** Functions of the kidneys in homeostasis
 - Physiologic anatomy of the kidneys
- **Lecture2:** Regional differences in nephron structure
 - Urine Formation
 - Why large amounts of solutes are filtered (high GFR) and then reabsorbed by the Kidneys?
 - Composition of the glomerular filtrate
- **Lecture3:** Factors affect GFR
 - Renal Blood Flow
 - Physiologic control of glomerular filtration and renal blood flow
 - Autoregulation of GFR and renal blood flow
- **Lecture4:** Tubular processing of the glomerular filtrate
 - Active Transport
 - Pinocytosis
- **Lecture 5:** Transport maximum
 - Reabsorption of chloride, urea, and other solutes by passive diffusion
- **Lecture 6:** Reabsorption and secretion along different parts of the nephron
 - Proximal tubular reabsorption
 - Solute and water transport in the Loop of Henle
- **Lecture7:** Distal Tubule
 - Late distal tubule and cortical collecting tubule
 - Medullary collecting duct
 - Concentrations of different solutes in the different tubular segments
- **Lecture 8:** Peritubular capillary and renal interstitial fluid
 - Causes of normal high rate of peritubular capillaries fluid reabsorption (124 ml/min)
- **Lecture 9:**Regulation of tubular reabsorption
 - Glomerulotubular Balance

- Peritubular capillary and renal interstitial fluid physical forces
- Effect of arterial pressure on urine output—the pressure-natriuresis and pressure-
- Diuresis mechanisms
- Hormonal control of tubular reabsorption
- **Lecture 10:** Renal mechanisms for controlling urine concentration
- Antidiuretic hormone
- Obligatory urine volume
- **Lecture 11** Requirements for excreting concentrated urine
- Factors preserve hyperosmolarity of the renal medulla interstitial fluid
- **Lecture 12** Renal mechanisms for excreting dilute urine
- Control of extracellular fluid osmolarity and sodium concentration
- Thirst mechanism
- **Lecture 13** Regulation of potassium (k⁺) excretion and potassium concentration (conc.) in extracellular fluid
- Control of calcium excretion by the kidneys
- **Lecture 14** Physiologic anatomy of the bladder
- Innervation of the Bladder
- The ureterorenal reflex
- Micturition
- **Lecture 15** Regulation of Acid-Base Balance
- Hydrogen ion concentration is precisely regulated
- The normal pH
- Defenses against changes in hydrogen ion
- **Lecture 16** The chemical acid-base buffer systems of the body fluids
- Bicarbonate buffer system
- Henderson-Hasselbalch Equation
- Phosphate Buffer System
- Proteins buffer system
- Isohydric Principle
- **Lecture 17** Respiratory regulation of acid-base balance
- Alveolar ventilation affects pH
- H⁺ concentration affects the rate of alveolar ventilation
- **Lecture 18** Renal control of acid-base balance
- How the kidneys regulate extracellular fluid H⁺ concentration?
- Combination of excess hydrogen ions with phosphate and ammonia buffers in the
- Tubule
- Phosphate mechanism
- Ammonia Buffer System
- Factors affect hydrogen ion and bicarbonate secretion or reabsorption by renal tubules

Practical hours

1. RBC count
2. WBC count
3. Differential WBC count
4. Platelet count
5. Packed cell volume (PCV)
6. blood indices
7. Blood groups
8. Cross matched
9. Blood bank , زيارة الى مصرف الدم
10. Bleeding time
11. Clotting time
12. ESR
13. Pulse
14. Blood pressure measurement
15. ECG
16. Chest examination
17. Lung function tests
18. Oxygen saturation
19. Effect of exercise on blood pressure and pulse and pressure
20. زيارة الى وحدة وظائف القلب
21. Effect of exercise on lung function
22. زيارة الى وحدة وظائف الرئة
23. Visual acuity
24. Visual field
25. Hearing test
26. Sensation
27. Motor function and reflexes
28. Temperature
29. Capillary fragility test
30. Triple response
31. ECG review
32. Blood Pressure review

Anatomy

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Anatomy	
Name of Academic Program	MChB	
Academic Year/level	2022 -2023 / 2 nd year	
Title of the course	Gross anatomy	
Code	McAn202	
Total Course Hours	Practical hours=180	Total=240
	Theoretical hours=60	
Date of specification approval	1/9/2022	

General Aims of Course

The overall aim of the course is to provide the students with the basic anatomical knowledge of the normal structure of the human body at the level of the head, neck, brain, spinal cord, abdomen and pelvis and to integrate these anatomical facts with more advanced knowledge of clinical sciences

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:

- Describe the principal distinguishing features of bones of the skull.
- List the muscles of the head as well as neck and their main action and nerve supply.
- List the layers of the scalp.
- List the cutaneous nerves of scalp and face.
- Describe the boundaries and contents of the triangles of the neck.
- Describe the subclavian, common carotid arteries.
- Describe the internal jugular vein and vagus nerve.
- Understand the anatomical and clinical importance of the thyroid gland.
- Understand the anatomical and clinical importance of the salivary glands.
- List the lymphatics of head and neck.
- Describe the muscles of mastication.
- Describe orbit, ear and nose.
- Describe the mouth and tongue.
- Describe the pharynx and larynx.
- Describe the meninges.
- Describe the venous sinuses.
- List the parts of brain and spinal cord.
- List the parts and structure of cerebellum.
- Define the ventricles of the brain.
- Describe the midbrain.
- Describe the components of the cerebrum and diencephalon.
- Describe the basal ganglia.
- Describe the white matter of brain.
- Understand the functional localization areas of brain.
- Describe the parts and structure of spinal cord.
- List the blood supply of brain and spinal cord.
- Describe the circulation of CSF.
- List the autonomic nervous system.
- Describe the principal distinguishing features of bones of the abdominal region.
- Describe the surface anatomy of abdominal wall.
- List the muscles of the abdominal wall.
- List the nerve and blood supply of abdominal wall
- Define the rectus sheath.
- List the contents of rectus sheath.
- List the boundaries and contents of the inguinal canal.

	<ul style="list-style-type: none"> - Understand the clinical importance of the inguinal canal. - Describe peritoneum. - Describe the anatomy, blood and nerve supply of stomach, spleen, liver and gall bladder. - Describe the anatomy, blood and nerve supply of pancreas, small and large intestine. - Describe the Portal vein and portal circulation & Lymphatic drainage of abdomen. - List the branches and tributaries of abdominal aorta and inferior vena cava. - Describe the Autonomic innervation of abdomen and Lumbar plexus. - Describe the anatomy, nerve supply, blood supply and lymphatics of kidneys and the suprarenal glands. - Understand the anatomy, nerve and blood supply of the diaphragm. - Describe the principal distinguishing features of bones of the pelvis. - List the muscles and contents of perineum. - Describe the male and female urethra and bladder. - Describe the genital organs in both sexes. - Understand the clinical importance of pelvic diaphragm. - List the blood supply and nerve supply of the pelvis.
Intellectual Skills	<ul style="list-style-type: none"> - Integrate the anatomical facts with the basic clinical knowledge required for proper examination of a patient in order to reach a proper diagnosis - Relate the surface markings of different structures and determine the position or course of internal structures - Correlate the anatomical knowledge with clinical signs seen in cases of injuries of male urethra and scalp. -
Professional Skills	<ul style="list-style-type: none"> - Locate the cranial nerves and evaluate their functions. - Locate the carotid artery pulsation for efficient resuscitation. - Locate the level of lumbar puncture. - Locate the exact site of inguinal canal to determine the type of inguinal hernia. - Elicit the normal anatomical structures on X-rays
General and Transferable Skills	<ul style="list-style-type: none"> - read and appraise scientific papers related to anatomy - present scientific facts in a well-organized matter - use advanced technology to search for facts and prepare presentations - work as an effective team member

Course structure			
topic	No. Of lectures	No. Of labs	Lecturer
Head and neck	18	27	Dr. Omar Riadh
Neuroanatomy	18	27	Dr. Maysoon
Abdomen	16	24	Dr. Ahmed Hisham
Pelvis	8	12	Dr. Ashraf, Dr. Mohammed

Teaching and learning methods	
Theoretical lectures	2 lectures / week
Practical labs	<p>The students are divided into small groups each of 10-15 students</p> <p>Plastinated cadavers, skeletons, bone and organ specimens will be available for students</p> <p>X-ray imaging films will be available to learn different bony landmarks</p>
Seminars and presentations	Each 5-7 students are required to present a seminar on specific subject

Assessment methods	
Formative assessments	<ul style="list-style-type: none"> - formative quiz during lectures - discussion panels during assessment lab - completing Logbook
Summative assessments	<ol style="list-style-type: none"> 1. midyear exam: 30% (10 practical, 20 theoretical) 2. final exam: 70% (20 practical, 50 theoretical).
Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Cunningham`s Manual of Practical Anatomy, (theoretical and practical, vol. 2 and 3) 2. Grant Atlas of Anatomy. 3. Snell`s Clinical Anatomy by Regions
Recommended text books	<ol style="list-style-type: none"> 1. Gray`s Anatomy 2. Atlas of Human Anatomy by FH Netter.
Other resources	Will be included in the lectures accordingly

المادة / المرحلة / اسم التدريسي	الرابط
م.د. عمر رياض حمدي	https://drive.google.com/drive/u/1/folders/1W_X13csfRaYfI5aZA_0t4tV2RMPqDSTd
ا.م.د. ميسون محي الدين القزاز	https://docs.google.com/document/u/1/d/1c55YtkpfAxBffRE7gpqKr3hQfcKa5VXS/edit?usp=share_link&oid=114034693356478938573&rtpof=true&sd=true
المرحلة الثانية / ا.م.د. احمد هشام قاسم	https://drive.google.com/drive/folders/1gYxQC-prGgcZaEW5fiVpY6jeqksm4jQM?usp=share_link

Theoretical lectures

Module: head and neck

- **Lecture 1:** The scalp
- **Lecture 2:** The face
- **Lecture 3:** Triangles of the neck
- **Lecture 4:** Subclavian artery
- **Lecture 5:** Common carotid artery and external carotid artery
- **Lecture 6:** Internal carotid artery and internal jugular vein
- **Lecture 7:** Vagus nerve
- **Lecture 8:** Thyroid gland
- **Lecture 9:** Lymphatic drainage of head and neck
- **Lecture 10:** Parotid gland and muscles of mastication
- **Lecture 11:** Maxillary artery and submandibular region
- **Lecture 12:** The orbit
- **Lecture 13:** The ear
- **Lecture 14:** The nose
- **Lecture 15:** The mouth and tongue
- **Lecture 16:** Nasopharynx
- **Lecture 17:** Oropharynx and laryngopharynx
- **Lecture 18:** The larynx

Module: Neuroanatomy

- **Lecture 1:** Meninges.
- **Lecture 2:** Venous sinuses.
- **Lecture 3:** Topography of brain, medulla oblongata and pons.
- **Lecture 4:** Cerebellum
- **Lecture 5:** Fourth ventricle.
- **Lecture 6:** Midbrain.
- **Lecture 7:** Cerebrum, diencephalon.
- **Lecture 8:** Third ventricle.
- **Lecture 9:** Cerebral hemispheres.
- **Lecture 10:** Lateral ventricle
- **Lecture 11:** Basal ganglia.
- **Lecture 12:** Functional localization areas.
- **Lecture 13:** White matter of the brain
- **Lecture 14:** Spinal cord.
- **Lecture 15:** Tracts of the spinal cord.
- **Lecture 16:** Circulation of CSF.
- **Lecture 17:** Blood supply of brain.
- **Lecture 18:** Autonomic nervous system.

Module: abdomen

- **Lecture 1:** The abdominal wall: Surface anatomy, superficial fascia, Muscles of the anterolateral abdominal wall
- **Lecture 2:** The abdominal wall: Formation of the rectus sheath, Muscles of the posterior abdominal wall, Transversalis fascia

- **Lecture 3:** The abdominal wall: Nerve supply, blood supply and lymphatics of the abdominal wall, inguinal canal and inguinal hernia
- **Lecture 4:** Peritoneum: Nerve supply, blood supply and lymphatics
- **Lecture 5:** The stomach: Nerve supply, blood supply and lymphatics
- **Lecture 6:** The spleen: Nerve supply, blood supply and lymphatics
- **Lecture 7:** Duodenum: Nerve supply, blood supply and lymphatics
- **Lecture 8:** The pancreas: Nerve supply, blood supply and lymphatics
- **Lecture 9:** The jejunum: Nerve supply, blood supply and lymphatics
- **Lecture 10:** The large intestine: Nerve supply, blood supply and lymphatics
- **Lecture 11:** Portal vein and portal circulation & Lymphatic drainage of abdomen
- **Lecture 12:** Liver and gall bladder: Nerve supply, blood supply and lymphatics
- **Lecture 13:** Autonomic innervation of abdomen and Lumbar plexus
- **Lecture 14:** Abdominal aorta and inferior vena cava
- **Lecture 15:** The kidneys and The suprarenal glands: Nerve supply, blood supply and lymphatics
- **Lecture 16:** The diaphragm: Nerve supply, blood supply and lymphatics

Module: pelvis

- **Lecture 1:** Bony pelvis and peritoneum
- **Lecture 2:** Perineum, superficial, and deep perineal spaces
- **Lecture 3:** Male urethra
- **Lecture 4:** Urinary bladder
- **Lecture 5:** Male genital organs
- **Lecture 6:** Female genital organs
- **Lecture 7:** Pelvic Diaphragm
- **Lecture 8:** Blood supply and nerve supply of the pelvis

Practical hours

Head and neck

- Skull.
- The scalp.
- The face.
- Triangles of the neck.
- Thyroid gland.
- Parotid gland and muscles of mastication.
- Temporal and infratemporal regions.
- The orbit.
- The ear.
- The nose.
- The mouth and tongue.
- The pharynx.
- The larynx.

Neuroanatomy

- Meninges and venous sinuses.
- Topography of brain, medulla oblongata and pons.
- Cerebellum.
- Fourth ventricle.
- Midbrain.
- Diencephalon and third ventricle.
- Cerebral hemispheres.
- Functional localization areas.
- Lateral ventricle.
- Basal ganglia.
- Spinal cord.
- Blood supply of brain.

Abdomen

- The abdominal wall.
- Peritoneum.
- The stomach.
- The spleen.
- Duodenum.
- The pancreas.
- The jejunum.
- The large intestine.
- Liver and gall bladder.
- Abdominal aorta and inferior vena cava.
- The kidneys and The suprarenal glands
- The diaphragm.

Pelvis

- Bony pelvis.
- Perineum (superficial and deep perineal spaces).
- Male urethra.
- Urinary bladder.
- Male genital organs.
- Female genital organs.
- Pelvic diaphragm.
- Blood supply and nerve supply of the pelvis.

BIOCHEMISTRY

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he\she has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Biochemistry	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023/ 2nd year	
Title of the course	Biochemistry	
Code	McBi 22 203	
link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours=60	Total=150
	Theoretical hours=90	
Date of specification approval	15/11/2021	

General Aims of Course

The scientific-knowledge building, employing the ability and refining the skill, in order to assimilate the scientific foundations in the subject of biochemistry, in order to understand and assimilate the natural chemical reactions that take place inside the human body.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Recall the basic concepts of major body metabolism and its important biochemical pathways and reactions.2. Repeat the mechanisms of different diseases that develop due to metabolic derangements and/or genetic mutations.3. Recognize the possible treatment of different diseases by analyzing the metabolic (or molecular) etiology.4. Arrange how to make final diagnosis of common chronic diseases that develop due to disturbances of body metabolism by using biochemical and/or molecular laboratory tests.5. Arrange signs and symptoms and expect the clinical findings of a disease that results from disturbances in body metabolism.6. Describe what they learned about metabolic diseases to patients in their families and friends with confidence based on the knowledge they acquired.7. Select the appropriate body specimen to conduct the appropriate lab analysis that aids in confirmation of diagnosis of different diseases and acquire the necessary knowledge to conduct the lab experiments with the ability to interpret results.
Intellectual Skills	<ol style="list-style-type: none">1 -Identify the link between the materials produced from raw materials, understand their path, and try to transform them from their natural path to other paths for more benefit.2- Arrange to transform the paths of harmful produced substances into harmless substances, especially inside the body3- Predict the means of analysis and selection of the resulting materials and increase their specialization
Professional Skills	<ol style="list-style-type: none">1.Judge the modifications that occur as a result of a few interactions within the body and the unnatural substances resulting from them that lead to various types of diseases2.Interpret the means of analysis and measurement of models taken from the human body, especially blood and other physiological or pathological models, which help in diagnosing diseases or assessing the health or treatment status

General and Transferable Skills	1- Summarize skills in the use of materials and equipment and the necessities that support them in verification, measurement and evaluation 2- Test and follow up students practically, directing them and alerting them to the possible specialized dangers as a result of their work, especially for the unscheduled and inferred judgments from their activities in personal development and assigning distinctive abilities to be on the right track.
Attitude outcomes	the student will be able to recognize any ethical problems in relation to the topics and act accordingly, the student will acknowledge the importance of wearing gloves and mask in chemical lab

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Vitamins	7	1	Dr. Sura Khairuddin (Lecturer)
Enzymes	5	4	Dr. Mariam Hani (Lecturer)
Nucleic acids	12	2	Dr. Amjad Hazim (Lecturer)
Amino acids and protein	10	4	Dr. Hazim Allawi (Ass.prof.)
Carbohydrates	10	4	
Hormones	15	4	Dr. Hazim Allawi (Ass.prof.)
Lipid metabolism	8	4	Dr. Sura Khairuddin (Lecturer)
Bioenergetics and Biological Oxidation	6		Dr. Ehsan Hassan (Lecturer)
Nutrition	6		Dr. Mariam Hani (Lecturer)
porphyrins	4	1	Dr. Ehsan Hassan (Lecturer)
Trace elements	2	1	Dr. Sura Khairuddin (Lecturer)
Tumor markers	2	1	Dr. Amjad Hazim (Lecturer)
Liver function test	1	1	Dr. Amjad Hazim (Lecturer)
Renal function test	1	3	Dr. Hazim Allawi (Ass.prof.)
Selected topics	1		Dr. Amjad Hazim (Lecturer)

Teaching and learning methods	
Theoretical lectures	3 lectures \week
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	Students are presenting about different topics in biochemistry through seminars conducted by 3-5 students and encouraged to make scientific posters. They are subjected to thorough discussion by teaching staff and colleagues.

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Fast quizzes at the end of lecture 2. Asking students to answer two or three questions (may be an MCQ), explain a mechanism or a finding and react with slides and discussion within the lecture minutes. 3. Electronic assignments to the class (using google forms) 4. Case interpretations in the lab (students will discuss some lab results to settle differential diagnosis) 5. Seminar discussion (the teacher and/or student select a topic and present it with thorough discussion).

Summative assessments	<p>1. End of term (1st. and 2nd.) exam in practical biochemistry using manual work (experiments) or oral examination. Students are rewarded 7.5% of total marks for each term.</p> <p>2. Final Exam in practical biochemistry (usually oral examination, spot examination or students are subjected to written assessment). Students are rewarded 10% of total marks.</p> <p>3. Mid-year and final written examinations in theoretical knowledge (student has to answer MCQ questions and short essay questions). Students are rewarded 25% and 50% of total marks respectively.</p>
Pass mark	50%

Resources and requirements	
Essential text books	<p>1. Lippincott's illustrated reviews of Biochemistry</p> <p>2. Review of physiological chemistry by H A Harper</p>
Recommended text books	Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, by Nader Rifai, 6th Edition.
Other resources	Theoretical and practical lectures in all the mentioned specializations

Theoretical lectures

Module: Vitamins:

- **Lecture 1**
 - Definition of vitamins:
 - Classification of vitamins
 - Water soluble vitamins
 - Thiamine (B1):
 - Riboflavin (vitamin B2)
- **Lecture 2:**
 - Niacin (vitamin B3.):
 - Pantothenic Acid:
 - Biotin
- **Lecture 3:**
 - Cobalamin:
 - Folic Acid:
- **Lecture 4:**
 - Vitamin B6
 - Ascorbic Acid
- **Lecture 5:**
 - Fat soluble vitamins
 - Vitamin A:
- **Lecture 6:**
 - Vitamin D
- **Lecture 7:**
 - Vitamin E (Tocopherol)
 - Vitamin K

Module: Enzymes

- **Lecture 1:**
 - definition of enzyme
 - General properties of enzymes
 - Nomenclature
- **Lecture 2:**
 - Classification of enzymes
 - Co enzymes
- **Lecture 3:**
 - Factors affect enzyme activity
 - Enzyme kinetics
 - Isoenzymes definition
- **Lecture 4:**
 - enzyme in diagnosis
 - Definition of wear and tear
- **Lecture 5:**
 - Cardiac enzymes
 - Lactate dehydrogenase
 - Creatine kinase
 - Alkaline phosphatase
 - Transaminase
 - Isoenzyme changes in MI and liver diseases

Module: Nuclie acids

- **Lecture 1:** Introduction to nucleic acids
 - Definition and types of nucleic acids
 - Nucleic acids in prokaryotic and eukaryotic cells
 - DNA structure & the double helix
 - Phosphodiester bonds
 - Base pairing rule (Chargaff)
 - Nucleosides and nucleotides
 - Nucleotides structure and metabolism
- **Lecture 2:** Synthesis of purine nucleotides [de-novo]
 - Source of purines atoms
 - Synthesis of PRPP and 5-phosphoribosylamine
 - IMP synthesis requirements and reactions
 - Inhibitors of purines synthesis; indications and health drawbacks
 - AMP and GMP synthesis from IMP
 - Nucleosides monophosphates conversion to di- and tri-phosphates
- **Lecture 3:** Salvage pathway of purines
 - Definition and enzymes needed
 - Lesch-Nyhan syndrome
 - Synthesis of deoxyribonucleotides
 - Role of thioredoxin reductase
 - Purines degradation
 - Formation of uric acid and hyperuricaemia
 - ADA deficiency and SCID
- **Lecture 4:** Pyrimidines synthesis and degradation
 - Carbamoyl phosphate synthesis
 - Orotic acid synthesis and pyrimidine nucleotides assembly
 - Orotic aciduria
 - CTP and TMP synthesis from UMP
 - Pyrimidine salvage and degradation
 - Naturally occurring nucleotides; ATP, c-AMP, FAD, NAD, UDP-glucuronic acid and others.
- **Lecture 5:** DNA replication (dna synthesis)
 - A rapid look at the cell cycle in pro- and eukaryotic cells
 - Replication fork
 - Proteins needed (DNA-A protein, helicases and SSBPs)
 - Requirements; DNA polymerases and dNTPs
 - RNA primers formation and epilation
 - DNA ligase
 - Reverse transcriptase
 - Inhibition of DNA synthesis (by nucleosides analogs)
- **Lecture 6:** DNA organization and transcription
 - Organization of eukaryotic DNA (Histones, polynucleosomes and chromatin formation)
 - Prokaryotic and eukaryotic rRNA
 - tRNA structure; unusual bases and delete loops
 - mRNA structure and features
 - Chromatin remodeling and assembly of transcription complex
 - RNA polymerases
 - Role of transcription factors and stages of DNA transcription

Lecture 7: post-transcriptional modifications of RNA(s) and RNA translation

- Cleavage of pre- rRNA
- Pre- tRNA maturation
- Eukaryotic mRNA modifications (capping, tailing and splicing)
- Genetic code characteristics
- mRNA translation components
- Steps of protein synthesis (initiation, elongation and termination)

➤ **Lecture 8:**

Consequences of altering nucleic acids sequences and DNA repair

- Mutation types with examples
- DNA repair mechanisms
- Methyl- directed mismatch repair
- Repair of DNA damage caused by UV light
- Base excision repair
- DNA double strand breaks' repairs

➤ **Lecture 9:** Principle and tools of genetic engineering (recombinant DNA technology)

- Restriction endonucleases
- Palindromes
- DNA cloning
- Criteria to select vectors
- Types of cloning vectors
- Cloning in drug industry (insulin as example)

➤ **Lecture 10:** Principle of polymerase chain reaction (PCR)

- Privilege of PCR over biological cloning
- DNA melting (Denaturation)
- Primers annealing and extension
- Taq polymerase
- PCR applications
- CF detection by PCR

➤ **Lecture 11:** Analysis of gene expression & an introduction to some tools of molecular biochemistry

- Determination of mRNA levels (Northern blotting and microarray)
- Analysis of proteins (ELISA and Western blotting)
- Southern blotting technique
- Use of ASO probes in clinical diagnosis
- RFLP in pre-natal diagnosis
- Examples: PKU and sickle- cell disease

➤ **Lecture 12:** Miscellaneous subjects in molecular biochemistry

- An insight into gene therapy
- Treatment of SCID using gene replacement technique
- Transgenic animals
- Xanthinuria
- Genetic classification of thalassemia

Module: Amino acids and protein

➤ **Lecture 1**

- Introduction
- Amino acids pool
- Formation and type of peptide

- Essential and non-essential amino acids
- Glucogenic and ketogenic amino acid
- Digestion and absorption of protein
- **Lecture 2**
- Urea biosynthesis
- Transamination
- Urea cycle and Urea cycle disorders
- **Lecture 3**
- Metabolism of ammonia
- Function of ammonia
- Toxicity of ammonia
- **Lecture 4**
- Metabolism of aromatic amino acid
- Phenylalanine
- Inborn error of metabolism of phenylalanine
- Phenylketonuria
- **Lecture 5**
- Metabolism of aromatic amino acid
- Tyrosine
- Major and minor pathways of tyrosine metabolism
- Inborn error of tyrosine
- Tyrosinemia
- Alkaptonuria
- Metabolism of tyrosine in melanocyte
- **Lecture 6**
- Metabolism of aromatic amino acid
- Tryptophane
- Major and minor pathways of metabolism
- Melatonin
- Inborn error of metabolism
- Hartnup disease
- Carcinoid syndrome
- **Lecture 7**
- Sulphur containing amino acids
- Methionine metabolism
- Cysteine and cystine metabolism
- Homocystinuria
- **Lecture 8**
- Cystinosis
- Creatinine and Creatinine clearance
- Creatinine biosynthesis
- **Lecture 9**
- Branched chain amino acid
- Metabolism of valine leucine isoleucine
- Maple syrup urine disease
- **Lecture 10**
- Histidine
- Arginine
- Specialized products of amino acid
- Aminoaciduria

Module: Carbohydrates

- **Lecture 1:**
 - Chemistry of carbohydrates
 - Monosaccharides
 - Disaccharides
 - Polysaccharides
- **Lecture 2:**
 - Glucose metabolism
 - Glycolysis
- **Lecture 3:**
 - Hexose Monophosphate Shunt
 - G-6-P-D Deficiency
- **Lecture 4:**
 - Tricarboxylic acid cycle
 - ATP production
- **Lecture 5:**
 - gluconeogenesis
 - From lactate
 - From glycerol
 - From amino acid
- **Lecture 6:**
 - glycogen synthesis
 - Enzymes controlling glycogen synthesis
 - Glycogen storage
- **Lecture 7:**
 - glycogenolysis
 - Enzymes controlling glycogenolysis
- **Lecture 8**
 - Galactose and fructose metabolism In health and diseases
- **Lecture 9**
 - Control of glucose level
 - Insulin
 - Glucagon
 - Anterior pituitary hormone
 - Thyroid hormones
- **Lecture 10**
 - Short notes on diabetes
 - Definition of diabetes
 - Hypoglycemia Amino acid metabolism

Module:: Hormones

- **Lecture 1**
 - Endocrine system hormone function
 - Classification of hormones
 - Role of calcium in hormones action
 - Role of phosphatidylinositol metabolism in calcium mediated hormone action
 - Insulin and insulin like growth factor
- **Lecture 2**
 - Hormones of pancreas
 - Insulin
 - Chemical structure

- Synthesis and release
- Regulation of insulin secretion
- Insulin metabolism
- **lecture 3**
- Insulin action
- Pathophysiology of insulin deficiency
- Glucagon secretion
- Glucagon action
- **lecture 4**
- Hormones that regulate calcium metabolism
- Regulation of parathyroid synthesis
- Regulation of secretion
- Action of parathyroid gland
- Effect of parathyroid hormone on calcium
- Effect of parathyroid hormone on phosphate
- Calcitriol
- **lecture 5**
- Synthesis and metabolism of 1-25 dihydroxy calcitriol
- Calcitonin
- **lecture 6**
- Adrenal gland
- Adrenal cortex
- General steroid structure
- Biosynthesis of steroid hormone

- **lecture 7**
- Synthesis of mineralocorticoid aldosterone
- Glucocorticoid synthesis
- Transport of steroid hormones
- Metabolism and excretion rate
- Rennin angiotensin system
- Metabolic function of adrenal cortex hormone
- **lecture 8**
- Hormones of adrenal medulla
- Synthesis of catecholamines
- Action of catecholamines
- Metabolism of catecholamines
- COMT
- MAO
- **Lecture 9**
- Hormones of gonads
- Biosynthesis of testosterone
- Action of testosterone
- Metabolism of testosterone
- Regulation of testosterone

- **Lecture 10**
- Female sex hormones
- Biosynthesis and metabolism of ovarian hormones
- Estrogen and progesterone binding to plasma protein
- Metabolism of estrogen and progesterone

- Hormonal regulation of menstrual cycle
- **Lecture 11**
- GIT hormones
- Gastrin
- Cholecystokinin pancreozymin
- Secretin
- Vasoactive intestinal peptide VIP
- Gastric inhibitory peptide GIP
- Somatostatin and pancreatic polypeptide and motilin
- **Lecture 12**
- Hormones of pituitary gland
- Anterior pituitary gland
- **Lecture 13**
- Posterior lobe of pituitary
- **Lecture 14**
- Thyroid gland
- Thyroid hormones
- Synthesis of thyroid hormones
- Mode of action of thyroid gland
- Diseases related to thyroid gland
- Method of measurement of thyroid hormones
- **Lecture 15**
- Parathyroid gland
- Parathyroid hormone
- Chemistry
- Mode of action
- Calcitonin
- Chemistry
- Mode of action
- Diseases related to parathyroid gland

Module: Lipid metabolism:

- **Lecture 1**
- what are the lipids?
- Characters of lipid
- Classification of Lipids
- The difference between saturated and unsaturated fats?
- Essential Fatty acids:
- Omega-3 fatty acids
- Omega-6 fatty acids
- Omega-9 fatty acids
- Glycerides
- Functions of lipids
- **Lecture 2:**
- Lipid metabolism
- Types of lipoproteins
- Chylomicrons
- Very Low-Density Lipoproteins
- Low Density Lipoproteins
- High Density Lipoproteins
- Intermediate Density Lipoproteins

- **Lecture 3:**
 - Fatty acid oxidation
 - β -Oxidation
 - Energy Yield and End Products
 - Alpha oxidation
 - Omega oxidation

- **Lecture 4:**
 - Ketone bodies; Ketosis and Ketonemia
 - Ketone bodies
 - Ketogenesis
 - Steps of Synthesis of ketone bodies
 - Ketoacidosis
- **Lecture 5:**
 - Biosynthesis of Lipids (Lipogenesis)
 - Extra mitochondrial system of FA synthesis (cytosol).
 - Acetyl coA sources and fate.
 - Steps of FA Synthesis.
 - Elongation of Fatty Acid Chains Occurs in the Endoplasmic Reticulum.
 - The Main Source of NADPH for Lipogenesis Is the Pentose Phosphate Pathway.
 - Hormonal regulation.
- **Lecture 6**
 - Triglycerides
 - What are triglycerides?
 - Biosynthesis of Triacylglycerols
 - What causes high triglycerides?
 - How are high triglycerides treated?
 - Lipid Metabolism in Adipose tissues
- **Lecture 7**
 - Cholesterol synthesis and utilization
 - Structural Biochemistry
 - Biosynthesis
 - The Utilization of Cholesterol

- **Lecture 8:**
 - The liver and Lipid metabolism
 - Fatty liver syndrome
 - The factors causing fatty liver can be divided as follows
 - What are the treatments for fatty liver disease?

Module: Bioenergetics and Biological Oxidation

- **Lecture 1:**
 - Introduction.
 - Coupled Reactions.
- **Lecture 2:**

Biological Oxidation

Oxido-reductases

- **Lecture 3:**
 - Oxidases.
 - Dehydrogenases.
 - Aerobic dehydrogenases.
 - Anaerobic dehydrogenases.
 - Anaerobic dehydrogenases dependent on NAD or NADP.
 - Anaerobic dehydrogenases dependent on Riboflavin.
- **Lecture 4:**
 - Cytochromes.
 - Hydroperoxidases.
 - Oxygenases.
 - Monooxygenases.
 - Dioxygenases.
 - CoQ or ubiquinone.
- **Lecture 5:**
 - Respiration and respiratory chain.
 - Sequence of Redox system in the respiratory chain.
 - Redox occurs in the Mitochondria.
 - Sites of ATP production.
- **Lecture 6:**
 - Oxidation Phosphorylation.
 - Mechanism of phosphorylation reaction of RC.
 - Chemical Coupling.
 - The Chemiosmotic theory.

Module: Nutrition

- **Lecture 1**
 - Water
 - Water Intake and Output
 - Caloric Requirements
 - Energy Contents of Food
 - Basal Metabolic Rate
- **Lecture 2**
 - Energy Requirement
 - Physical Activity
 - Body Size
 - Age
 - Climate and Environment
- **Lecture 3**
 - Growth and Body Size of Childhood and Adolescence
 - Pregnancy
 - Lactation
 - Carbohydrate in Diet
- **Lecture 4**
 - Protein in the Diet
 - Protein Deficiency
 - Secondary Protein Deficiency or Conditional
 - Fat in the Diet
- **Lecture 5**
 - Malnutrition
 - Marasmus

- Kwashiorkor
- **Lecture 6**
- Weight Control
- Obesity
- Underweight

Module: porphyrins

- **Lecture 1:**
 - Introduction
 - Hemoglobin structure
 - Hemoglobin function
 - Myoglobin
 - Cytochromes
- **Lecture 2:**
 - structure of porphyrin
 - Biosynthesis of porphyrin
 - Heme formation
- **Lecture 3:**
 - Molecular pathology of hemoglobin
 - Classification of porphyria
 - Clinical features of porphyria
- **Lecture 4:**
 - Metabolism of hemoglobin
 - Abnormal hemoglobin
 - Thalassemia

Module: Trace elements

- **Lecture 1:**
 - Classification of nutrients
 - Trace elements Sources, biochemical function, deficiency and toxicity
 - Manganese
 - Fluoride:
 - Iodine
 - Zinc
 - Cobalt
- **Lecture 2:**
 - Selenium
 - Molybdenum
 - Chromium
 - Copper
 - Iron

Module: Tumor markers

- **Lecture 1:**
 - Introduction to tumor markers
 - Definition, etiology and types of tumors
 - Main lab tests in Oncology
 - Definitions of tumor markers
 - Uses of tumor markers in clinical practice
 - Commonly used tumor markers in practice:

- Alpha-fetoprotein (AFP)
- Prostate-specific antigen (PSA)
- Carcinoembryonic antigen (CEA)
- Beta- Human Chorionic Gonadotropin (β -HCG)

➤ **Lecture 2:**

Other commonly used tumor markers in practice

- Carbohydrates antigens (CAs):
 - CA 15-3
 - CA 19-9
 - CA 125
- Other tumor markers
- Lactate dehydrogenase (LDH)
- Calcitonin
- Thyroglobulin
- Serum paraprotein (Myeloma protein) & urinary Bence- Jones protein
- Genetic tests in tumor diagnosis, Example:
- BCR-ABL fusion gene (Philadelphia chromosome)

Module: Liver function test:

➤ **Lecture 1:**

- Liver function:
- Liver investigations
- Jaundice

Module: Renal function test:

➤ **Lecture 1:**

- Functions of kidney
- Formation of urine
- Renal function tests
- Biochemical Tests of Renal Function
- Measurement of Glomerular Filtration Rate (GFR)
- Determination of Clearance
- Creatinine Clearance

Module: Selected topics

➤ **Lecture 1:**

Biochemistry of neurotransmitter.

- Acetylcholine.
- Adrinalin and Noradrinalin.
- Amino butyric acid.

Practical hours

- Laboratory principles and safety in medical laboratory.
- Specimens collection and preparation of samples
- Normal urine examination
- Examination of abnormal constituents in urine
- Colorimetry and spectrophotometer
- Calibration curve
- Total serum protein
- Serum albumin
- Serum protein electrophoresis
- Hemoglobin measurement
- Cerebrospinal fluid analysis
- Urinary protein measurement
- Blood glucose measurement
- Serum uric acid
- Polymerase chain reaction
- Total cholesterol and lipid profile
- Serum bilirubin
- Serum alkaline phosphatase
- Serum transaminases
- Serum amylase
- Blood urea
- Serum creatinine and creatinine clearance
- Serum calcium
- Serum inorganic phosphate
- S I unit, mass units and conversion factor

Histology

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve and demonstrating whether he has made the most of the available learning opportunities. It must be linked to the description of the program.

Educational Institution/ college	CMUM	
Department offering the course	Anatomy	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 2 nd year	
Title of the course	Histology	
Code	McAn204	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 90	Total= 135
	Theoretical hours= 45	
Date of specification approval	1/9/2022	

General Aims of Course

The overall aim of the course is to provide the students with the basic histological knowledge of the normal tissues of human in different organs and to integrate these histological facts with more advanced knowledge of clinical sciences

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ul style="list-style-type: none">- Describe the histological characteristics of normal cells- Describe the structural characteristics of the four basic tissue types, bone & cartilage- Define and discuss the basic histological structure of Vascular system- Define and discuss the basic histological structure of Lymphatic system- Define and discuss the basic histological structure of Endocrine system- Define and discuss the basic histological structure of Respiratory system- Define and discuss the basic histological structure of Renal system- Define and discuss the basic histological structure of Digestive system- Define and discuss the basic histological structure of Reproductive system- Define and discuss the basic histological structure of Skin, Eye, Ear
Intellectual Skills	<ul style="list-style-type: none">- Select appropriate methods to reveal specific microscopic features of cells and tissues.- Correlate between histological structure & function of any cell or tissue.- Interpret a complete blood picture report.
Professional Skills	<ul style="list-style-type: none">- Illustrate the instruments and techniques used to prepare and study histological specimens.- Use the microscope efficiently.- Handle the histological glass slides and examine them using the maximum microscopic facilities.- Identify various types of stains & micro techniques.- Elicit different cell organelles.- Differentiate between different blood cells in blood films & recognize a differential leucocytic count.- Differentiate between different types of epithelium, connective tissue cells, connective tissue proper & bone cells.- Differentiate between different organs in histological slide seen under the microscope.- Draw and label the structures they have seen in electron photomicrographs and under light microscope during practical classes.- Elicit histological slides of tissues and organs.

General and Transferable Skills	<ul style="list-style-type: none"> - Adopt the importance of lifelong learning and show a strong commitment to it. - Use the sources of biomedical information to remain current with advances in knowledge and practice. - Collect information to enhance self-study and education. - Express themselves freely and adequately by improving their descriptive capabilities and presentation skills and enhancing their communication skills.
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Course Structure

Topic	No. of Lectures	No. of labs.	Lecturer
Introduction to Histology	1	-	Dr. Rana. M. Raof
Cardiovascular System	4	3	Dr. Faten Thanoon
Lymphatic System	3	3	Dr.Semaa Abdulqader
Digestive System	8	5	Dr.Rana Mustafa
Respiratory System	3	3	Dr.Semaa Abdulqader
Endocrine System	5	3	Dr.Rand Abdulateef
Renal System	3	3	Dr.Muna Zuhair
Female Reproductive System	5	10	Dr.Maha Al-Sammak
Nervous System	3	3	Dr.Muna Zuhair
Male Reproductive System	3	3	Dr.Maha Al-Sammak
Skin	3	3	Dr.Faten Thanoon
Eye	2	3	Dr.Rand Abdulateef
Ear	2	3	Dr. Wasan Waadalla

Teaching and learning methods	
Theoretical lectures	2 lectures / week
Practical labs	<p>The students are divided into groups each of 40 students</p> <p>Electronic program of Histology guide with slides presented in data show</p>
Seminars and presentations	Each 5-7 students are required to present a seminar on specific subject

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 6. formative quiz during lectures 7. discussion panels during assessment lab 8. completing Logbook
Summative assessments	<ol style="list-style-type: none"> 1. midyear exam: 30% (10 practical, 20 theoretical) 2. Final exam: 70% (15 practical, 55 theoretical).
Pass mark	50%

Resources and requirements	
Essential text books	Meshner, A. (2013) Junqueira's Basic Histology Text & Atlas 13th ed, McGraw-Hill
Recommended text books	Young, B., O'Dowd, G. and Woodford, P. (2014) Wheater's Functional Histology. A Text and Color Atlas 6th ed. Churchill Livingstone, Edinburgh
Other resources	Eroschenko, VP and di Fiore MSH (2013) di Fiore's Atlas of Histology with functional correlations. 12th ed. Wolters Kluwer / Lippincott, Williams & Wilkins Int., Baltimore.

المادة / المرحلة / اسم التدريسي	الرابط
ا.د. مها عبدالجبار السماك	https://drive.google.com/drive/folders/171H2Rbnp7SaUhQo2f5ltm2gSgSwBDX5u?usp=share_link
م.د. فاتن ذنون عبدالرحمن	https://drive.google.com/drive/folders/1JmWZ-OMWovPmhqmk77Mq78mPpzQ5QSkC?usp=sharing
ا.م.د. منى زهير عبدالكريم	https://drive.google.com/drive/folders/1LPuLbs4XDTxSfVzMDePEES5wZ2oHEit1?usp=share_link
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Theoretical lectures

Module: circulatory system

- **Lecture 1, 2** Cardiovascular system:
 - Heart (structure and valves)
 - Arteries, Arterioles, Capillaries, Sinusoids, Venules, Veins, Arterio-venous anastomosis, carotid and aortic bodies and sinuses.
- **Lecture 3:** Lymphatic vascular system:
 - Lymph capillaries, lymph vessels and lymph ducts.
- **Lecture 4:** Hematopoiesis and bone marrow
- **Lecture 5:** Emphasis on functional aspects of the system

Module: lymphatic system

- **Lecture 1:**
 - General Considerations & components
 - Diffuse lymphatic tissues
- **Lecture 2:**
 - Lymphocytes & Immunity
 - Lymphatic nodules
- **Lecture 3:**
 - Palatine, Pharyngeal, Lingual & Tubal Tonsils
 - Spleen & Thymus
- **Lecture 4:** Emphasis on functional aspects of the system

Module: digestive system

- **Lecture 1:** Introduction
- **Lecture 2:** Oral cavity: lips & cheeks, hard & soft palate, tongue (lingual papillae, taste buds, muscles, nerves, blood vessels & lingual glands).
- **Lecture 3:** Salivary glands: (minor & major), Parotid, Submandibular & Sublingual salivary glands.
- **Lecture 4, 5: Alimentary canal :**
 - General structure & function of the Pharynx, Esophagus, Cardiac, fundic & pyloric regions of the stomach, Small intestine (duodenum, jejunum & ileum), large intestine (cecum, vermiform appendix, colon, rectum & anal canal).
- **Lecture 6:** Pancreas: endocrine & exocrine parts.
- **Lecture 7:**
 - Liver: lobules, hepatocytes, blood supply, lymphatics, sinusoids, space of Disse, functional consideration.
 - Biliary tract (intra-hepatic & extra-hepatic divisions), bile ducts, gall- bladder.

Module: respiratory system

- **Lecture 1:**
 - Introduction & Subdivisions.
 - Air conducting zone:
- **Lecture 2:**

- Nasal cavities, Vestibule, Olfactory area, Paranasal sinuses, Nasopharynx, Larynx, Trachea, Bronchi, Bronchioles.

➤ **Lecture 3:**

- Respiratory zone:
- Respiratory bronchioles, Alveolar ducts & sacs, Respiratory alveoli

➤ **Lecture 4:**

- Surfactant
- Blood-air barrier
- Pleura

Module: endocrine system

➤ **Lecture 1:**

- General consideration
- Pituitary gland: Origin, components, histological features, secretion, functional considerations & disorders.

➤ **Lecture 2:**

- Thyroid & Parathyroid glands: Origin, histological features, functions & disorders.

➤ **Lecture 3:**

- Adrenal gland :Development, blood & nerve supply, histological features (cortex & medulla), function & disorders.

➤ **Lecture 4:**

- Pineal body: Histological features & functions

Module urinary system:

➤ **Lecture 1:**

- Introduction
- Kidney: Structure, function & vasculature, Nephron, Glomerulus, Mesangium, Tubular & Collecting systems, Juxtaglomerular apparatus.

➤ **Lecture 2:**

- Ureter
- Urinary bladder

➤ **Lecture 3:** Male & female urethra.

Module: central nervous system

➤ **Lecture 1:**

- General histological & functional considerations.
- Neurons & Neuroglia.
- White & Grey matter

➤ **Lecture 2:**

- Meninges
- Cerebrum
- Choroid plexus

➤ **Lecture 3:**

- CSF
- Blood-Brain Barrier
- Cerebellum

➤ **Lecture 4:**

- Brain stem
- Spinal cord

Module: male reproductive system

- **Lecture 1: Testes:**
 - General considerations & components Seminiferous tubules, spermatogenesis & meiosis, interstitial cells of Leydig
 - Intratesticular genital ducts: Tubuli recti, rete testis & efferent ductules.
- **Lecture 2:**
 - Excretory genital ducts: Ductus epididymis, Vas deferens, Spermatic cord, Ejaculatory duct.
 - Accessory genital glands: Prostate, Seminal vesicle, Bulbo-urethral (Cowper's) glands.
- **Lecture 3: Semen, Scrotum & Penis**

Module: female reproductive system

- **Lecture 1:**
 - Ovary: Follicular development (primordial, primary, secondary, tertiary and mature follicle).
 - Ovulation & sequels of follicles: (Corpus luteum, Corpus albicans & atretic follicle).
 - Hormonal control of follicular growth
 - Oviduct: Histological features & fertilization
- **Lecture 2:**
 - Uterus: Histological features & changes during menstrual cycle.
- **Lecture 3: Cervix & Vagina**
- **Lecture 4: Placenta (fetal & maternal parts), umbilical cord.**
- **Lecture 5: Mammary gland (active & inactive).**

Module: skin

- **Lecture 1:**
 - Functions & histological features of thin & thick skin
 - Cells of the epidermis, Keratinocytes, Melanocytes, Langerhans & Merkel cells.
- **Lecture 2:**
 - Dermis: papillary & reticular layers.
 - Lecture Appendages of the skin (hair, nail, sebaceous and sweat glands).

Module : eye

- **Lecture 1, 2**
 - Histological considerations
 - layers: Sclera & Cornea, Vascular layer (uvea), Retina
 - Contents of the eye ball (aqueous humor, lens, vitreous body).
 - Accessory structures: eyelids & lacrimal glands.
 - Functional considerations

Module: ear

- **Lecture 1, 2**
 - External ear
 - External auditory meatus
 - Tympanic membrane
 - Middle ear
 - Inner ear (vestibular & auditory apparatus)

Practical hours

- Systemic histology
- Cardiovascular system
- Lymphatic system
- Digestive system
- Respiratory system
- Endocrine system
- Renal system
- Female reproductive system
- Nervous system
- Male reproductive system
- Skin
- Eye
- ear

Embryology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Anatomy	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 2 nd year	
Title of the course	Embryology	
Code	McAn205	
Link	https://drive.google.com/drive/folders/11CVNPHsOV9Iv0ApstdzAZkdv6wZzw7J	
Total Course ours	Theoretical hours=30	Total=30
Date of specification approval	1/9/2022	

General Aims of Course

The overall aim of the course is to provide the students with the basic knowledge in embryology and to define the important stations regarding the normal development with discussing the features of abnormal development and to integrate these anatomical facts with more advanced knowledge of clinical sciences

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:

- Describe the principle of gametogenesis
- List the steps of oogenesis and spermatogenesis.
- Define the stages of menstrual cycle.
- Define the steps of ovulation.
- Describe the steps of fertilization.
- Describe the abnormal gametes.
- Describe the implantation.
- Understand the clinical importance of abnormal implantation sites.
- Describe the cleavage.
- List the steps of development in days.
- Describe the features of bilaminar germ disc.
- List the characteristics of trilaminar germ disc.
- Describe the somites development.
- List the derivatives of germ layers.
- Describe the clinical points regarding the trilaminar germ disc development.
- Describe the characteristics of embryonic period.
- Describe the characteristics of fetal period.
- List the causes of intrauterine growth retardation.
- List the components of the extraembryonic structures.
- Define the placenta.
- Describe the development of umbilical cord.
- Describe the abnormalities of umbilical cord.
- Describe the abnormalities of placenta.
- Describe the development of branchial apparatus.
- Describe the abnormalities of branchial apparatus.
- Understand the development of gastrointestinal system.
- Describe the abnormalities of development of gastrointestinal system.
- List the development of skeletal system.
- List the abnormalities of development of skeletal system.
- List the steps in development of genitourinary system.
- Describe the abnormalities of development of genitourinary system.
- List the development of respiratory system.
- Define the development of face.
- Define the development of tongue.
- Define the development of thyroid gland.

Intellectual Skills	<ul style="list-style-type: none"> • 1-Integrate the embryologic facts regarding the steps of development of systems. • 2-make a base that is required to define the diagnosis of some clinical cases. • 3-understand the steps in treatment of some clinical cases. • 4-Understand the relation between the embryologic facts and the anatomy of each region. • 5-Make a comparison between the normal and abnormal cases of development by methods (as ultrasound and examination) to reach the diagnosis of cases in right academic way. • 6-reach the suggested surgical treatment give a differential diagnosis of the common pathological cases. • 7-defining the complication of the common cases.
Professional Skills	<ul style="list-style-type: none"> • Define the expected day of delivery of pregnant. • Diagnose the location of placenta and fetus and identify the amount of liquor by imaging techniques. • Define some features of intrauterine growth retardation. • Diagnose some abnormalities regarding fetus and placenta.
General and Transferable Skills	<ul style="list-style-type: none"> • read and appraise scientific papers related to embryology • present scientific facts in a well-organized matter • use advanced technology to search for facts and prepare presentations • work as an effective team member

topic	No. Of lectures	Lecturer
General embryology	15	1- Assist. Prof.Dr. Luma I. Al-allaf 2-Lecturer.Dr.Rana Mustafa
Special embryology	15	

Teaching and learning methods	
Theoretical lectures	1 lecture / week
Seminars and presentations	Each 5-7 students are required to present a seminar on specific subject

Assessment methods	
Formative assessments	formative quiz during lectures
Summative assessments	1. midyear exam: 30% (theoretical) 2. Final exam: 70% (theoretical).
Pass mark	50%

Resources and requirements	
Essential text books	Langman's medical embryology
Recommended text books	1.Obstetrics by Ten Teachers, 2. Grant Atlas of Anatomy 3. Snell's Clinical Anatomy by Regions
Other resources	Will be included in the lectures accordingly

Theoretical lectures

- **Lecture 1, 2:** General Introduction to Embryology.
 - General and Specialized Embryology
 - Importance of Embryology
- **Lecture 3, 4:** Gametogenesis
 - Gametogenesis
 - Abnormal Gametes.
 - Spermatogenesis and Spermiogenesis
 - Oogenesis
 - Stages of Maturation of Follicles
- **Lecture 5, 6:**
 - Ovulation Occurs.
 - Fertilization.
 - The Stages of Menstrual Cycle
- **Lecture 7, 8:** Corpus Luteum, Cleavage and Blastocyst.
 - Corpus Luteum Definitions, Types And Fate of Corpus Luteum
 - Cleavage:
 - Blastocyst Formation.
- **Lecture 9, 10:**
 - Fertilization
 - Implantation.
 - The Abnormal Site of Implantation.
 - In Vitro Fertilization.
 - Bilaminar Germ Disc.
- **Lecture 11, 12:**
 - Bilaminar Germ Disc and Trilaminar Germ Disc.
 - 13 th Day of Development
 - Trilaminar Germ Disc (Third Week of Development)
- **Lecture 13, 14:**
 - Definition Of Embryonic Period.
 - Derivatives Of Germ Layers.
 - Definition Of Somites .
- **Lecture 15, 16:** Fetal Period
 - What Happens During The Fetal Stage.
 - Important Measures.
 - What Are The Factors That Have An Influence On The Weight Of Fetus?
 - Fetal Membranes.
- **Lecture 17,18, 19:**
 - Umbilical Cord
 - Amniotic Fluid
 - Twin Pregnancy
- **Lecture 20, 21, 22** Specialized Embryology.
 - What Is the Branchial Apparatus?
 - Face, Nose , and Palate
 - Thyroid, Tongue.
- **Lecture 23, 24:** Git Development:
 - Foregut.
 - Midgut.
 - Hind Gut.

- Congenital Anomalies.
- **Lecture 25, 26**
- Development of Urinary System.
- Congenital Anomalies
- **Lecture 27, 28**
- Development of Male Genital System.
- Congenital Anomalies
- **Lecture 29, 30:**
- Development of Female Genital System.
- Congenital Anomalies

Medical Ethics

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	University of Mosul / college of medicine	
Department offering the course	Radiology	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 /2 nd year	
Title of the course	Medical ethics	
Code	Medical Ethics / MCCo206	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 0	Total= 30
	Theoretical hours= 30	
Date of specification approval	20-9-2022	

General Aims of Course

The course aims to provide students with the necessary and sufficient information in medical ethics and professional behavior so that the student is able to apply the necessary practices and medical ethics when practicing the profession in the future .

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Demonstrate ethical awareness .2.the ability to do ethical reflection3.the ability to apply ethical principles in decision-making.4.Developing a student's ethical awareness, reflection, and decision-making ability is central to a Core Curriculum.
Intellectual Skills	knowledge During initial years of undergraduate training in the 1st and 2nd year professional, stress will be given on the knowledge aspect more. Knowledge will be built up from understanding the various learning documents and regulations to ethical codes, research guidelines, guidelines of good clinical practice, drugs and consumer protection acts .
Professional Skills	Skill and attitude During final professional, starting from the late 2nd professional itself, hands-on and practical training in dealing with ethical conflicts and dilemmas, communication skills, reaction time, and attitude during crisis will be imparted in pragmatic conditions. Various objectives pertaining to skill and attitude domain
General and Transferable Skills	various methods can be field visits as community worker, panel discussion, debates, and conduct of skits. Portfolio can be used during rotational internship posting.
Attitude outcomes	Demonstrate awareness of the main professional obligations of doctors <ol style="list-style-type: none">1.Practice according to statutory requirements and codes of conduct for medical practice2.Critically analyse ethical issues commonly encountered in medical practice and formulate a framework within which such issues could be resolved3.Demonstrate the ability to resolve ethical issues faced during common clinical scenarios3.Identify the ethical aspects involved in conducting research and apply , ethical principles in conducting research4.Demonstrate sensitivity to ethical issues and ethical behaviour within and outside professional practice

Topic	No. Of lectures 15	Lecturer
<p>Introducing the science of ethics and the sources of ethics</p> <p>A brief history of the emergence of medical ethics</p> <p>A brief history of the medical profession and medical professional conduct</p> <p>Basic principles of the medical profession</p> <p>The relationship of the doctor and his pharmacist colleagues</p>	5	<p>Dalia Abdul Qadir Nuri Tawfiq Al -Falaki</p>
<p>Ethics of dealing with treatment refusals</p> <p>principles of medical ethics</p> <p>Punishment for disclosing a secret</p> <p>Responsibility and experiences on the patient</p> <p>The doctor's relationship with his patients</p>	5	<p>Hadeel Muhammad Farook Ahmed Al –Hialy</p>

<p>Ethics of dealing with pharmaceutical companies</p> <p>Ethics in dealing with medical error</p> <p>Principles of medical professional conduct</p> <p>medical liability</p> <p>Responsibility and competence</p>	5	Dr. Wasan Ali Attia
<p>Molecular biology, genetic engineering technology and ethics for dealing with AIDS patients</p> <p>Public health ethical foundations for community medicine</p> <p>professional relationships</p> <p>General ethics in medical professional conduct</p> <p>Documentation of medical work</p>	5	Ahmad Azhur Hashim
<p>The ethical foundations of pediatrics and psychiatric ethics</p> <p>The ethical position of euthanasia or euthanasia</p> <p>The ethical aspect of organ transfer</p> <p>Doctor's relationship with fellow doctors</p> <p>Medical reports and doctor's testimony before the court</p>	5	Marwa Ismail Khalaf Al - Khafaji

Ethical foundations in the practice of abortion, infertility and infertility	5	Muammar Abdel Ghafour Ibrahim Agha
Ethical foundations of the doctor-patient relationship		
Ethical principles in the practice of surgery		
Ethical aspects of mental illness		
Laws and the doctor		

Teaching and learning methods	
Theoretical lectures	
Small group teaching	The students are divided into small groups each of 6 students

Assessment methods	
Formative assessments	1. Half of the year exam , Theoretical exams (that include multiple questions MCQ & short Essay) , Use of electronic correction device OMR 2 .Final year exam , Theoretical exams (that include multiple questions MCQ & short Essay) , Use of electronic correction device OMR
Summative assessments	1. Paper-based test/assessment through mid-year and final year exams 2. Observation/evaluation during the lecture through participation . 3. Evaluate a lecture by the students at the end of the semester
Pass mark	50%

Resources and requirements	
Essential text books	<p>World Health Organization, Sixty-third World Health Assembly, Agenda item 11-21</p> <p>2010</p> <p>Fifty-seventh World Health Assembly. 2004</p> <p>German controls for the process of ants and the transplantation of human organs between neighborhoods, College of Law - Ain University</p> <p>Shams researcher / Mahmoud Thabet Mahmoud Ala Al-Shazly. Journal of Middle East Research Issue 44</p> <p>The Kuwait Theme on the Islamic Constitution of the Medical Profession issued by the First World Conference on Islamic Medicine</p> <p>Baptized in Kuwait in the period 12-16/12/1981</p> <p>Illnesses of Medicine A/D: Jamal Salih Jareh</p>

المحاضرات النظرية

- **المحاضرة ١: التعريف بعلم الاخلاق ومصادر علم الاخلاق.**
 - فهم مقاصد الطب الكبرى التي اتفقت عليها الشرائع.
 - تعريف اخلاقيات الطب.
 - ادراك البواعث على العناية المعاصرة بأخلاقيات الطب.
 - معرفة تطور الإلزام الأخلاقي نحو مهنة الطب.
- **المحاضرة ٢: نبذة تاريخية عن نشوء الاخلاقيات الطبية.**
 - سرد قسم أبقراط.
 - الاخلاق المهن الطبية في الاسلام
 - شرح المذاهب الفلسفية للأخلاق.
 - التعرف على الاسس الاخلاقية المعتمدة من قبل بعض المذاهب.
- **المحاضرة ٣: مبادئ الاخلاقيات الطبية**
 - فعل الخير للمريض ما أمكن
 - عدم الاضرار ما أمكن بالمريض
 - احترام استقلالية المريض
 - العدل
- **المحاضرة ٤: الأسس الأخلاقية للعلاقة بين الطبيب والمريض**
 - متطلبات العلاقة بين الطبيب والمريض
 - مميزات العلاقة بين الطبيب والمريض
 - انماط العلاقة الاجتماعية بين الطبيب والمريض
 - نمط شخصية المريض النفسية
 - المتطلبات الاخلاقية لممارسة مهنة الطب
- **المحاضرة ٥: العلاقات المهنية**
 - واجبات الطبيب تجاه زملائه الاطباء
 - اجالة المرضى
 - العلاقة مع الهيئة التمريضية
 - العلاقة مع المهن الصحية المساعدة
 - دور التعليم الطبي
 - واجبات الطبيب تجاه المجتمع
 - دور الاديان السماوية
- **المحاضرة ٦: المبادئ الاخلاقية في ممارسة الجراحة**
 - علاقة بين الجراح والمريض
 - مسؤولية الجراح الطبية
- **المحاضرة ٧: الاسس الاخلاقية في ممارسة الإجهاض والعمم والعمام**
 - الاجهاض (الاسقاط)
 - العمم
 - الاخصاب
- **المحاضرة ٨: الاسس الاخلاقية لطب الاطفال واخلاقيات الطب النفسي**
 - المبادئ الاخلاقية لممارسة طب الاطفال
 - العلاج النفسي
 - اهداف العلاج النفسي
 - اخلاقيات مهنة الطب النفسي
 - المحاور الاساسية التي تتعلق بحقوق المرضى النفسيين

- **المحاضرة ٩: الموقف الاخلاقي من موت الرحمة او الموت الرحيم**
 - انواع موت الرحمة
 - اسباب الاهتمام بموت الرحمة
- **المحاضرة ١٠: الجانب الأخلاقي بنقل الأعضاء**
 - شروط التبرع بالأعضاء من الأحياء والموتى
 - النقاط التي تثير الجدل حول نقل الأعضاء من أشخاص بعد الوفاة مباشرة
 - الضوابط الأخلاقية لنقل الأعضاء
- **المحاضرة ١١: علم الأحياء الجزيئي وتقنية الهندسة الوراثية واخلاقيات التعامل مع مرضى الايدز**
 - الجوانب الايجابية والسلبية للعلاج الجيني والاستنساخ
 - اخلاقيات التعامل مع مرضى الإيدز
 - واجبات الطبيب الاخلاقية في حالات العنف
 - الاخلاقيات الطبية في معاملة السجناء والمعتقلين
- **المحاضرة ١٢: الأسس الأخلاقية للصحة العامة لطب المجتمع**
 - الجوانب الأخلاقية لبرامج السيطرة على الأمراض الانتقالية
 - الجوانب الأخلاقية في المسوحات الصحية والوبائية
 - الالتزامات الأخلاقية التي يجب أن يراعيها الفريق الصحي
 - الجوانب الأخلاقية لتوزيع الموارد في الخدمات الصحية
 - أخلاقيات البحوث الحياتية الطبية
 - انواع البحوث الطبية
- **المحاضرة ١٣: اخلاقيات التعامل مع الشركات الدوائية**
 - القواعد الأساسية لوصف الدواء
 - التسويق الدوائي
 - الترويج لا أخلاقي للأدوية
 - انواع الهدايا حسب القصد منها
 - حيل شركات الأدوية للالتفاف على الأطباء
- **المحاضرة ١٤: اخلاقيات التعامل مع الخطأ الطبي**
 - تعريف الاخطاء الطبية
 - خطأ الطبيب
 - المتسببين في الخطأ الطبي
 - أسباب حدوث الأخطاء الطبية
 - أنواع الأخطاء الطبية
 - مسئولية الطبيب
 - العوامل المساندة لظاهرة الخطأ الطبي
 - المخاطر والمضاعفات الناتجة من الأخطاء الطبية
 - معالجة الأخطاء الطبية
- **المحاضرة ١٥: اخلاقيات التعامل مع حالات رفض العلاج**
 - تعريف الاهلية العقلية
 - استثناءات للحق في رفض العلاج
 - رفض العلاج عند نهاية الحياة
 - الرعاية الملطفة
 - رفض العلاج للأسباب المالية
 - استخدام الدين لرفض العلاج
 - تجربة العلاجات

- رفض العلاج والألم
- رفض العلاج وأنبوب الطعام
- إخفاء حقيقة المرض
- **المحاضرة ١٦: لمحة تاريخية عن مهنة الطب والسلوك المهني الطبي**
- **المحاضرة ١٧: القسم الطبي**
 - المبادئ الأساسية في مهنة الطب
- **المحاضرة ١٨: الطبيب والإنسانية**
 - الطبيب وأجور الفحص
- **المحاضرة ١٩: السر الطبي**
 - مبررات إفشاء السر الطبي
 - شروط عقاب إفشاء السر
 - المسؤولية الطبية
 - المسؤولية في التشخيص
- **المحاضرة ٢٠: المسؤولية في العلاج**
 - المسؤولية في النواحي الكتابية والإدارية
- **المحاضرة ٢١: المسؤولية في وقائع الإضراب عن الطعام**
 - المسؤولية حيال ما يسمى بموت الرحمة
 - المسؤولية في مواكبة المستجدات في الحقل الطبي
 - المسؤولية والتجارب على المريض
 - المسؤولية والاختصاص
- **المحاضرة ٢٢: علاقة الطبيب بمرضاه**
 - المقابلة الطبية
- **المحاضرة ٢٣: علاقة الطبيب بزملائه الأطباء**
 - التشاور الطبي، الاستشارة، المشاورة
 - الطبيب وأعضاء المهن الأخرى وذوو المهن المساعدة
- **المحاضرة ٢٤: علاقة الطبيب وزمليه الصيدلي**
 - آداب عامة في السلوك المهني الطبي
- **المحاضرة ٢٥: توثيق العمل الطبي**
 - وقائع الموت في العيادات الخاصة
- **المحاضرة ٢٦: الجوانب الأخلاقية للأمراض النفسية والعقلية**
 - التحليل النفسي
 - الرجة الكهربائية
 - العلاج التخديري
 - الجوانب الأخلاقية للفحص الشعاعي
 - الإجراءات الاحترازية والأخلاقية للفحص الشعاعي
- **المحاضرة ٢٧: التقرير الطبي**
 - شروط استجواب المصابين في الحالات العدلية والجنائية أثناء رقدتهم في المستشفيات من قبل الشرطة
- **المحاضرة ٢٨: تقرير وشهادة الوفاة**
 - الأخطاء الطبية
 - الشهادة في القضاء
 - النقاط المهمة التي على الطبيب أن يتبعها أثناء الشهادة الشفهية
- **المحاضرة ٢٩: القوانين والطبيب**
 - نقابة الأطباء

- أهداف نقابة الأطباء
- **المحاضرة ٣٠: قانون نقابة الاطباء**
- الاحكام الانضباطية
- الاحكام الانضباطية لنقابة الاطباء
- قانون حماية الأطباء
- قانون تسجيل الولادات والوفيات
- قانون العقوبات
- العقوبات التي تحكم بها لجنة الانضباط على العضو
- الاطباء والانتخابات المهنية

منهاج المرحلة الثالثة

THIRD YEAR CURRICULUM

توزيع الوحدات والساعات للمرحلة الثالثة

ت	المواد الدراسية	عدد الساعات النظرية	عدد الساعات العملية والسريرية	عدد الوحدات النظرية	عدد الوحدات العملية والسريرية	مجموع عدد الوحدات
١	الأدوية	٩٠	٦٠	٦	٢	٨
٢	الجراثيم	٩٠	٦٠	٦	٢	٨
٣	الطفيليات	٦٠	٦٠	٤	٢	٦
٤	الأمراض	١٢٠	١٢٠	٨	٤	١٢
٥	طب المجتمع	٣٠	٣٠	٢	١	٣
٦	الطب الباطني	٦٠	٦٠	٤	٢	٦
٧	الجراحة	٣٠		٢		٢
	المجموع	٤٨٠	٣٩٠	٣٢	١٣	٤٥

THIRD YEAR UNITS AND HOURS DISTRIBUTION

	Scholastic subjects	Theoretical hours	Practical and clinical hours	Theoretical units	Practical and clinical units	Total units
1	Pharmacology	90	60	6	2	8
2	Bacteriology	90	60	6	2	8
3	Parasitology	60	60	4	2	6
4	Pathology	120	120	8	4	12
5	Community Medicine	30	30	2	1	3
7	Medicine	60	60	4	2	6
8	Surgery	30		2		2
	Total	480	390	32	13	45

Pharmacology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Pharmacology	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023/3 rd year	
Title of the course	Pharmacology	
Code	MCph 301	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours = 60	Total= 150
	Theoretical hours = 90	
Date of specification approval	5/10/2022	

General Aims of Course

1. To critically assess the basic concepts in pharmacology and the pharmacological basis of therapeutics.
2. To introduce students to the core principles of drug action in terms of bioavailability, pharmacokinetics, pharmacodynamics and mechanism of action of drugs in the treatment of diseases.
3. To introduce students to critically assess drug efficacy, side effects, toxicities, drug interactions and special emphasis on dosage concerns in special populations such as the young, pregnant women and in the elderly.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:

The student after completing the course should be able to:

1. Explain how the fundamental pharmacological properties of pharmacokinetics and pharmacodynamics influence routes of administration; drug distribution and drug levels in the body; drug efficacy and potency; potential for drug-drug interactions; drug toxicity; and the appropriate choice of drug for pharmacotherapy in a given patient.
2. Explain how to use drug-specific and patient-specific pharmacokinetic parameters to calculate the physiochemical properties that influence rates of drug disposition and clearance in the body, and how these parameters can be used to monitor, design and modify appropriate dosing regimens of drugs in specific patient populations.
3. Describe the process by which new drugs are discovered, developed, tested and finally approved by the Federal Drug Administration for use in the clinic.
4. Discuss the fundamental principles of pharmacogenomics including how specific patient genotypes can influence the pharmacokinetic and pharmacodynamics properties of a drug, thereby affecting the clinical response to particular classes of medications.
5. Describe how pharmacogenomics approaches can be used to influence the drug discovery process and the choice of drugs in the treatment of specific diseases.
6. List the major drugs and drug classes currently used in medical practice and describe their pharmacology including their indications, contraindications, clinical use, mechanisms of action, physiological effects, pharmacokinetic properties, major adverse effects and clinically significant drug interactions.
7. Apply knowledge of the pharmacology of the major drugs and drug classes currently used in medical practice, together with both disease-specific and patient-specific factors to select the most appropriate medication(s) for the effective pharmacotherapy of a given disease or condition in a specific patient.
8. Demonstrate an understanding of the molecular, cellular and physiological mechanisms underlying the pathophysiological changes that occur in the etiology of the most common disease states and describe how targeting these mechanisms with the appropriate choice of drug(s) can act to effectively treat, cure, or mitigate the underlying disease causes and/or symptoms.
9. Discuss the theoretical considerations and principles that underlie the successful pharmacotherapy of the major diseases and conditions.
10. Recognize and explain the rationales behind the use of widely used, national organization-approved treatment algorithms for the management and treatment of common diseases and conditions, including identifying the currently accepted diagnostic criteria required to initiate drug therapy and the anticipated therapeutic goals likely to be achieved by therapeutic intervention.
11. Identify any clinical testing requirements for monitoring the effectiveness and potential toxicity of specific drugs used in the treatment of common diseases and conditions.
12. Explain the physiological, pharmacological, and psychological effects of acute and chronic exposure of individuals to drugs with abuse potential, and the consequences of sudden withdrawal of such a drug from a drug-dependent individual.
13. Describe the effective use of non-pharmacological therapeutic interventions in the treatment of specific diseases, conditions and

	<p>symptoms.</p> <ol style="list-style-type: none"> 14. Discuss the basic principles of toxicology; the mechanisms by which excess exposure to certain drugs, toxins, chemicals, heavy metals and poisons can lead to adverse toxicological effects; and the basic principles of clinically managing the poisoned patient. 15. Evaluate the relative advantages and disadvantages in the use of dietary supplements and herbal medications in the treatment of certain specific conditions or diseases, including their efficacy, potential for causing adverse effects and drug interactions. 16. Compare and contrast the major differences in the laws and regulations governing the approval, safety, efficacy and marketing of dietary supplements and herbal medications compared to conventional FDA-approved drugs.
Intellectual Skills	<p>After completing this course, student should have the following skills:</p> <ol style="list-style-type: none"> 1. Utilize pharmacological basis of therapeutics in the proper selection and use of drugs in various disease conditions. 2. Assess drug interactions and adverse drug reactions. 3. Rank commonly used drugs and high risk medicines . 4. Medication history taking. 5. Rational prescribing. 6. Drug dose calculation. 7. Demonstrate Prescription writing and Nondrug therapy. 8. Communication. 9. Reviewing prescriptions. 10. Adverse drug reactions. 11. Clinical toxicology. 12. Obtaining information from guidelines and protocols to support prescribing. 13. Monitoring medication.
Professional Skills	<p>After completing the course, student acquires the following skills:</p> <ol style="list-style-type: none"> 1. Undertake risk assessments concerning drug-drug interaction, adverse reaction, toxicity profile and incompatibilities in different pharmaceutical preparations. 2. Provide patients and health care professionals with advice about safe and proper use of medicine.
General and Transferable Skills	<p>After completing the course, student can do the following:</p> <ol style="list-style-type: none"> 1. Work effectively in a team in a variety of health care settings. 2. Acquire problem solving skills in groups for continuing professional development needs.

	3. Demonstrate critical thinking and decision making abilities in a variety of theoretical and practical situations.
Attitude outcomes	<ol style="list-style-type: none"> 1. Risk–benefit analysis. 2. Recognizing personal limitations in knowledge. 3. Recognition of a balanced approach to the introduction of new drugs. 4. Demonstrate professional and ethical behavior by honestly completing course examinations without attempting to seek an advantage by unfair means; and by reporting any unethical behavior of peers to the course administration.

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Theoretical Pharmacology			
Introduction	6		Assoc. Prof. Ibrahim M. Faisal
Cholinergic System	6		Prof. Imad AJ Thanoon
Adrenergic System	5		Assoc. Prof. Shamil H. Othman
Anxiolytics, Sedatives, Hypnotics	3		Assoc. Prof. Shatha H. Mohammed
Antidepressants, Antiparkinsonians, Antiepileptics	4		Assoc. Prof. Shatha H. Mohammed
Local and General anesthetics	2		Assoc. Prof. Shatha H. Mohammed
Autacoids	6		Assist. Prof. Nada S. Mahmood
NSAIDs and Narcotic analgesics	3		Assoc. Prof. Shamil H. Othman
Drugs for Migraine and Gout	2		Assist. Prof. Nada S. Mahmood
Drugs for Cough and Asthma	3		Lecturer Omar M. Yaseen
Antiemetics and Drugs for Peptic ulcer	2		Prof. Imad AJ Thanoon

Drugs for IBS, Crohn's disease, Ulcerative colitis	3		Assoc. Prof. Shatha H. Mohammed
Drugs for Constipation and Diarrhea	2		Assoc. Prof. Ibrahim M. Faisal
Diuretic Agents	2		Assoc. Prof. Shatha H. Mohammed
Drugs for Hypertension, CHF and Angina	5		Assoc. Prof. Shamil H. Othman
Antiarrhythmic Agents	2		Assoc. Prof. Shamil H. Othman
Anticoagulants and Antiplatelets	2		Assoc. Prof. Shatha H. Mohammed
Drugs for Anemias	2		Assist. Prof. Nada S. Mahmood
Principles of Antimicrobial Therapy, Penicillins and Cephalosporins	4		Assoc. Prof. Shamil H. Othman
Sulphonamide and erythromycin	2		Assoc. Prof. Shamil H. Othman
Tetracyclines, Clindamycin, Aminoglycosides, Metronidazole, Chloramphenicol, Fusidic acid	6		Prof. Imad AJ Thanoon
Antivirals, Antifungals	2		Assist. Prof. Nada S. Mahmood
Antimalarials	1		Assist. Prof. Nada S. Mahmood
Steroids and Contraceptives	4		Assoc. Prof. Ibrahim M. Faisal
Drugs for Diabetes Mellitus	3		Assoc. Prof. Shamil H. Othman
Thyroid and Antithyroid Drugs	2		Assist. Prof. Nada S. Mahmood
Drugs for Hyperlipidemia	2		Assoc. Prof. Ibrahim M. Faisal
Drugs for Obesity	1		Lecturer Omar M. Yaseen
Cancer Chemotherapy	3		Assoc. Prof. Ibrahim M. Faisal
Practical Pharmacology			
Pharmacokinetics 1		2	Lecturer Omar M. Yaseen
Pharmacokinetics 2		2	Lecturer Omar M. Yaseen
Metrology		1	Assoc. Prof. Shatha H. Mohammed
Drugs for internal use		2	Assist. Prof. Nada S.

			Mahmood
Drugs for external use		2	Assoc. Prof. Shamil H. Othman
Prescription writing		1	Lecturer Omar M. Yaseen
Compounded prescription		1	Lecturer Omar M. Yaseen
Routes of drug administration		2	Lecturer Omar M. Yaseen
IV Fluids		1	Lecturer Omar M. Yaseen
Disinfectants		1	Lecturer Omar M. Yaseen
Drugs acting on rabbit eye		2	Assoc. Prof. Ibrahim M. Faisal
Experiment of anticonvulsants		1	Assoc. Prof. Shatha H. Mohammed
Dose modification in renal failure		2	Lecturer Omar M. Yaseen
Drug development and nomenclature		1	Lecturer Omar M. Yaseen
Determination of median lethal dose		2	Lecturer Omar M. Yaseen
Potassium iodide excretion		1	Lecturer Omar M. Yaseen
Adverse effects of ketamine		1	Assoc. Prof. Shatha H. Mohammed
Aspirin-induced gastric irritation		1	Assist. Prof. Nada S. Mahmood
Organophosphate poisoning		2	Lecturer Omar M. Yaseen
Erythrocyte fragility test for irritant drug		2	Lecturer Omar M. Yaseen

Teaching and learning methods	
Theoretical lectures	Lectures using Data show, The students are divided into groups each of 50-60 students.
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students .
Seminars and presentations	Designing therapeutic management and discussing it with demonstrators.

Assessment methods	
4. Formative assessments	<ol style="list-style-type: none"> 1. Draw a concept map in class to represent their understanding of a topic. 2. Submit one or two sentences identifying the main point of a lecture. 3. Turn in a research proposal for early feedback. 4. Homework exercises as review for exams and class discussions. 5. Reflections journals that are reviewed periodically during the semester.
5. Summative assessments	<ol style="list-style-type: none"> 1. Written exam consisting of multiple choice questions with reasoning as well as open-ended questions to assess the students' knowledge of the drugs used in the studied diseases. The student will have to demonstrate the mastery of his knowledge and the understanding of the concepts and the evaluation is not limited to a restitution. 2. Practical examination to assess practical and case studies and problem solving.
6. Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Whalen K, Pharmacology (Lippincott® Illustrated Reviews: Pharmacology), 7th ed. (2019). 2. Bertram G. Katzung, Todd W., Basic & Clinical Pharmacology, 15th ed. (2020).
Recommended text books	Goodman and Gilman's, The Pharmacological Basis of Therapeutics, 14th ed. (2022).
Other resources	Pubmed.

Theoretical Lectures

Module: General Pharmacological Principles

- **Lecture 1:** Routes of Drug Administration
- **Lecture 2:** Pharmacokinetics: Membrane Transport, Absorption and Distribution of Drugs
- **Lecture 3:** Pharmacokinetics: Metabolism and Excretion of Drugs, Kinetics of Elimination
- **Lecture 4:** Pharmacodynamics: Mechanism of Drug Action; Receptor Pharmacology
- **Lecture 5:** Aspects of Pharmacotherapy, Clinical Pharmacology and Drug Development
- **Lecture 6:** Adverse Drug Effects

Module: Drugs Acting on Autonomic Nervous System

- **Lecture 1:** Cholinergic Transmission and Cholinergic Drugs
- **Lecture 2:** Anticholinergic Drugs and Drugs Acting on Autonomic Ganglia
- **Lecture 3:** Adrenergic Transmission and Adrenergic Drugs
- **Lecture 4:** Antiadrenergic Drugs (Adrenergic Receptor Antagonists) and Drugs for Glaucoma

Module: Autacoids and Related Drugs

- **Lecture 1:** General Considerations
- Histamine and Antihistaminics
- **Lecture 2:** 5-Hydroxytryptamine, its Antagonists and Drug Therapy of Migraine
- **Lecture 3:** Prostaglandins, Leukotrienes (Eicosanoids) and Platelet Activating Factor
- **Lecture 4:** Nonsteroidal Antiinflammatory Drugs and Antipyretic-Analgesics
- **Lecture 5:** Ant rheumatoid and Antigout Drugs

Module: Respiratory System Drugs

- **Lecture 1:** Drugs for Cough
- **Lecture 2:** Bronchial Asthma

Module: Hormones and Related Drugs

- **Lecture 1:** Anterior Pituitary Hormones
- **Lecture 2:** Thyroid Hormones and Thyroid Inhibitors
- **Lecture 3:** Insulin, Oral Antidiabetic Drugs and Glucagon
- **Lecture 4:** Corticosteroids
- **Lecture 5:** Androgens and Related Drugs, Drugs for Erectile Dysfunction
- **Lecture 6:** Estrogens, Progestins and Contraceptives
- **Lecture 7:** Oxytocin and Other Drugs Acting on Uterus
- **Lecture 8:** Hormones and Drugs Affecting Calcium Balance

Module: Drugs Acting on Peripheral (Somatic) Nervous System

- **Lecture 1:** Skeletal Muscle Relaxants
- **Lecture 2:** Local Anesthetics

Module: Drugs Acting on Central Nervous System

- **Lecture 1:** General Anesthetics
- **Lecture 2:** Ethyl and Methyl Alcohols
- **Lecture 3:** Sedative-Hypnotics
- **Lecture 4:** Antiepileptic Drugs
- **Lecture 5:** Antiparkinsonian Drugs
- **Lecture 6:** Antipsychotic
- **Lecture 7:** Antimanic Drugs
- **Lecture 8:** Antidepressant
- **Lecture 9:** Antianxiety Drugs
- **Lecture 10:** Opioid Analgesics and Antagonists
- **Lecture 11:** CNS Stimulants
- **Lecture 12:** Cognition Enhancers

Module: Cardiovascular Drugs

- **Lecture 1:** Cardiac Electrophysiological Considerations
- **Lecture 2:** Drugs Affecting Renin-Angiotensin System
- **Lecture 3:** Nitric Oxide and Vasoactive Peptide Signal Molecules
- **Lecture 4:** Cardiac Glycosides and Drugs for Heart Failure
- **Lecture 5:** Antiarrhythmic Drugs
- **Lecture 6:** Antianginal and Other Anti-ischemic Drugs
- **Lecture 7:** Antihypertensive Drugs

Module: Drugs Acting on Kidney

- **Lecture 1:** Diuretics
- **Lecture 2:** Antidiuretics

Module: Drugs Affecting Blood and Blood Formation

- **Lecture 1:** Hematinics and Erythropoietin
- **Lecture 2:** Drugs Affecting Coagulation, Bleeding and Thrombosis
- **Lecture 3:** Hypolipidemic Drugs

Module: Gastrointestinal Drugs

- **Lecture 1:** Drugs for Peptic Ulcer and Gastroesophageal Reflux Disease
- **Lecture 2:** Antiemetic, Prokinetic and Digestant Drugs
- **Lecture 3:** Drugs for Constipation and Diarrhea

Module: Antimicrobial Drugs

- **Lecture 1:** Antimicrobial Drugs: General Considerations
- **Lecture 2:** Sulfonamides, and Cotrimoxazole
- **Lecture 3:** Quinolones
- **Lecture 4:** Betalactam Antibiotics
- **Lecture 5:** Tetracyclines
- **Lecture 6:** Chloramphenicol (Broad-Spectrum Antibiotics)
- **Lecture 7:** Aminoglycoside Antibiotics
- **Lecture 8:** Macrolide
- **Lecture 9:** Lincosamide
- **Lecture 10:** Glycopeptide and Other Antibacterial Antibiotics;
- **Lecture 11:** Urinary Antiseptics

- **Lecture 12:** Antitubercular Drugs
- **Lecture 13:** Antileprotic Drugs
- **Lecture 14:** Antifungal Drugs 838
- **Lecture 15:** Antiviral Drugs {Non-retroviral}
- **Lecture 16:** Antiviral Drugs (Antiretrovirus)
- **Lecture 17:** Antimalarial Drugs
- **Lecture 18:** Antiemetic and Other Antiprotozoal Drugs
- **Lecture 19:** Anthelmintic Drugs

Module: Chemotherapy of Neoplastic Diseases

- **Lecture 1:** Principles of cancer chemotherapy
- **Lecture 2:** Anticancer Drugs

Module: Miscellaneous Drugs

- **Lecture 1:** Immunosuppressant Drugs
- **Lecture 2:** Drugs Acting on Skin and Mucous Membranes
- **Lecture 3:** Antiseptics
- **Lecture 4:** Disinfectants
- **Lecture 5:** Ectoparasiticides
- **Lecture 6:** Chelating Agents
- **Lecture 7:** Vitamins
- **Lecture 8:** Vaccines
- **Lecture 9:** Antisera
- **Lecture 10:** Immunoglobulins
- **Lecture 11:** Drug Interactions
- **Lecture 12:** Prescribing in Pregnancy
- **Lecture 13:** Drugs in Breastfeeding
- **Lecture 14:** Drug-Drug interactions
- **Lecture 15:** Drug-Food interactions

Practical hours

- Pharmacokinetics 1
- Pharmacokinetics 2
- Metrology (Weight measures, Scales, Dose calculations)
- Disinfectants (Classification, Uses, Application)
- Preparations used for external uses
- Preparations used for external uses
- Drugs acting on rabbit eye (Atropine, Pilocarpine)
- Route of drug administrations (Enteral, Sublingual, Parenteral)
- Prescription writing
- Compounded Prescription (Types, Indication, Uses)
- Intravenous fluids (Types, Indications, Uses, Precautions, Contraindication)
- Experiment of Anticonvulsant (Strychnine, Diazepam)
- Dose modification in renal failure
- Drugs development & nomenclature
- Determination of median lethal dose
- Experiment on Potassium iodide excretion
- Experiment on Adverse effect of Ketamine
- Aspirin –induced gastric irritation
- Organophosphate and carbamate poisoning
- Erythrocyte fragility test for irritant drug

Bacteriology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he/she has made maximum use of the available learning opportunities.

Educational Institution/college	University of Mosul/ College of Medicine	
Department offering the course	Microbiology Department	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 3 rd year	
Title of the course	Microbiology	
Code	MCMi302	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 60 hours	Total=150
	Theoretical hours=90 hours	
Date of specification approval	1/10/2022	

General Aims of Course

The main aims of this course are to:

1. Introduce the medical college student to the basic medical microbiology regarding types, classification, structure and composition of pathological and commensal bacteria, viruses and fungi .
2. Identify the pathogenic factors of different types of microorganisms.
3. Study the pathological and changes occur during infection
4. Introduce the student to the basic principles of medical immunology and immune response during infectious and noninfectious diseases.
5. Prepare students to understand and comprehend the concept of communicable diseases, their causes, and methods of diagnosis, treatment and prevention.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Determine the basics of medical microbiology, medical virology medical mycology and immunology.2. Review the pathogenesis of microorganisms3. Review the pathogenesis of systemic inflammation and its relation to systemic tissue damage.4. Assess various laboratory tests for identifying and diagnosing types of bacteria, viruses and fungi.5. Develop a formula for laboratory diagnosis of infectious diseases and choose the most appropriate laboratory tests for the pathogen6. Assess the relationship between disease and infectious agents and their pathogenesis7. Clarify basic principles of medical immunology, the structure of the human immune system and its relationship to combating communicable diseases, as well as its relationship to autoimmune , inflammatory diseases and allergies.8. Identify bacteria , viruses and fungi that cause human diseases , diagnosing them and how to prevent them9. Identify the cultural characteristics of microorganisms and pathogenic factors of microorganisms of medical importance10. Explain the most important methods of sterilization and control of infectious disease11. Describe how antimicrobials work against different types of bacteria fungi and viruses; and ways of resistance development against these antimicrobials12. Recite and describe techniques used in immunological, molecular and bacterial diagnostics
Intellectual Skills	<ol style="list-style-type: none">1. Use different laboratory diagnostic tests bacteria, viruses and fungi.2. Choose an appropriate method for examining and evaluating clinical samples suspected to be infected with microbes.3. Relate the pathogenic agent of the disease and proper antimicrobial agent
Professional Skills	Carry out the practical skills necessary for diagnosing bacterial, viral and fungal diseases regarding microscopy, culture techniques, serological and molecular tests.
General and Transferable Skills	Evaluate the causal relationship of bacteria, fungi, viruses and diseases.

Attitude outcomes	<ol style="list-style-type: none"> 1. Examine ethical problems in relation to the topics and act accordingly 2. Formulate Ideas about transmission of bacteria, viruses and fungi and React against endemic, epidemic and pandemic parasitic infections 3. Verify results of laboratory tests regarding microbial infections 4. Cooperate with medical personals in field of medical microbiology and contribute actively in diagnosing, treating and preventing parasitic infections
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Course structure			
Topic	No. Of lectures (1 hour/ lecture)	No. Of labs (2 hours /session)	Lecturer
1st semester			
Bacteriology			
Introduction to Microbiology	6		Dr.Firas Al-Tae Dr. Ahmed Hayawi
		5	Dr. Omar Nizzar Dr. Neam Basheer
Genus Staphylococcus (Gram ⁺ cocci)	3		Dr. Ansam Hamdoon
		1	Dr.Neam Basheer
Genus Streptococcus (Gram ⁺ cocci)	3		Dr. Asmaa Zaki
		1	Dr.Zeena Maki
Genus Neisseria, Moraxella (Gram ⁻ cocci)	3		Dr. Ansam Hamdoon
		1	Dr. Neam Basheer
Genus Corynebacterium (gram ⁺ non spore forming bacilli)	2		Dr. Ansam Hamdoon
		1	Dr. Zeena Maki
Genus Bacillus (gram ⁺ spore forming bacilli)	1		Dr. Ansam Hamdoon
		2	Dr. Ansam Hamdoon
Anaerobic bacteria (Clostridia and related spp.)	3		Dr.Khalid Waleed
		1	Dr.Khalid Waleed
Genus Mycobacterium	3		Dr. Ahmed Hayawi
		2	Dr.Ahmed Hayawi

Antimicrobials & antimicrobial resistance	5		Dr. Asmaa Zaki
		1	Dr. Asmaa Zaki
Immunology			Dr.Firas Al-Tae Dr.Ahmed Abdullah
Introduction to immunology –innate immunity	1		Dr.Firas Al-Tae
Adaptive immunity – cellular immunity -	2		Dr.Firas Al-Tae
Adaptive immunity- Humeral Immunity	1		Dr.Firas Al-Tae
Complement system	1		Dr.Firas Al-Tae
Immunization	1		Dr.Firas Al-Tae
Hypersensitivity reactions	2		Dr.Ahmed Abdullah
Immune deficiencies	2		Dr. Khalid Waleed
Tolerance, autoimmunity and autoimmune diseases	2		Dr.Khalid Waleed
Blood Transfusion	1		Dr.Ahmed Abdullah
Transplantation immunology	1		Dr.Khalid Waleed
Virology			
Introduction to virology	1		Dr.Ahmed Hayawi
Structure of viruses	1		Dr.Ahmed Hayawi
Viral replication	1		Dr.Ahmed Hayawi
Diagnosis of Viral infections	1		Dr.Ahmed Hayawi
2nd semester			
Bacteriology			
Enterobacteriaceae			
Introduction	2	1	Dr.Ansam Hamdoon
Lactose fermenter – E.coli and Klebseilla	2		Dr.Ansam Hamdoon
Non-lactose fermenter- Shigella and Salmonella		1	Dr.Zeena Maki Dr.Ansam Hamdoon
	2		Dr.Ansam Hamdoon

		1	Dr. Ansam Hamdoon
Pseudomonaceae	1		Dr. Khalid Waleed
		1	Dr. Khalid Waleed
Vibrio, Helicobacter and campylobacter	3		Dr. Asmaa Zaki
		1	Dr. Asma Zaki
Coco-bacilli- Haemophilus	1		Dr. Khalid Waleed
Coco-bacilli- Bordetella	1		Dr. Khalid Waleed
Coco-bacilli Brucella	1		Dr. Khalid Waleed
		1	Dr. Ahmed Hayawi
Atypical Bacteria-	4		Dr. Firas Al-Tae
Immunology			
Tumor immunology	1		Dr. Khalid Waleed
		1	Dr. Firas Al-Tae
Systemic inflammation and tissue damage	2		Dr. Ahmed Abdullah
		1	Dr. Ahmed Abdullah
Cytokine	1		Dr. Ahmed Abdullah
		2	Dr. Ahmed Abdullah
Virology			
Anti-viral drugs	1		Dr. Ahmed Hayawi
		1 (PCR)	Dr. Firas Al-Tae
Parvovirus and papilloma virus	1		Dr. Ahmed Hayawi
			Dr. Ahmed Hayawi
Adenoviruses	1		Dr. Ahmed Hayawi
Herpes virus	2		Dr. Ahmed Hayawi
Pox virus and molluscum	1		Dr. Ahmed Hayawi
Picornaviruses	2		Dr. Ahmed Hayawi
Rhabdovirus	1		Dr. Ahmed Hayawi
Coronavirus	1		Dr. Ahmed Hayawi
Orthomyxoviruses	1		Dr. Ahmed Hayawi
Paramyxovirus	1		Dr. Ahmed Hayawi

Haemorrhagic fever virus	1		Dr. Ahmed Hayawi
Arbo virus	1		Dr. Ahmed Hayawi
		1 (revision)	Dr.Ahmed Hayawi
Mycology			
Introduction to mycology	1		Dr.Asmaa Zaki
		1	Dr.Asma Zaki
Antifungal drugs and superficial mycosis	1		Dr. Asmaa Zaki
		1	Dr.Neam Basheer
Cutaneous mycosis	1		Dr. Asmaa Zaki
		1	Dr.Neam Basheer
Subcutaneous mycosis	1		Dr. Asmaa Zaki
Systemic mycosis	2		Dr.Ansam Hamdoon
Opportunistic mycosis	2		Dr.Asmaa Zaki

Teaching and learning methods	
1. Theoretical lectures	3 lecture are given / week in lecture hall 1 hour / lecture
2. Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students and take the lesson in Microbiology laboratory of College of Medicine 2 hours/ session
3. Seminars and presentations	Each group of students (5-7 students) will choose a topic in Microbiology at the beginning of the academic year. Each group is supervised by one academic staff. The group is then presented the seminar in front of all academic staff of the Department and other students at a predetermined schedule time

Assessment methods	
1. Formative assessments	<ol style="list-style-type: none"> 1. Individual questions 2. Discussion panel 3. Comparing the results obtained by the student from examining and evaluating medical forms and samples 4. Assignments 5. Log book delivered by the end of each semester
2. Summative assessments	<p><u>Theory and quizzes</u> : essay question and multiple choice question</p> <p><u>Practical examination</u>: examination method include examination of microscopic slides and culture media, biochemical activity, immunological tests and genetic testing.</p> <ol style="list-style-type: none"> 1. Theory examination <ol style="list-style-type: none"> a. Mid-year examination : 25 marks b. Final year examination 45 marks 2. Practical examination <ol style="list-style-type: none"> a. Mid-year examination : 10 marks b. Final year examination : 15 marks 3. Quizzes <p>1st semester : 2.5 marks 2nd semesters: 2.5 marks</p> <p>Total marks : 100%</p>
3. Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Medical Microbiology by Jawetz, Melnick, & Adelberg's, Last edition 2. Connie R Mahon Doland C Lehman Text book diagnostic microbiology ,last edition 3. Roitts Essential Immunology, Last edition
Recommended text books	<ol style="list-style-type: none"> 1. Review of Medical Microbiology and Immunology by Warren E. Levinson, Last edition 2. Immunology by Muphy, Kenneth and Casey, last edition
Other resources	Internet websites, workshops, seminars

Theoretical lectures

Module: Bacteriology:

- **Lecture 1-3:** Introduction to microbiology
 - Branches of microbiology.
 - Definition of bacterial cells and nomenclature of microorganisms
 - Identification methods.
 - Prokaryotic cell
 - General characters
 - Cell wall structure (gram-negative and gram positive) Cytoplasmic contents and endospores.
 - Physical and chemical requirement of bacterial cell
 - Culture media and reproduction in prokaryotes.
- **Lectures 4-6** Genetics
 - Definitions
 - (Genetics, Genes, Genomics, Genomes, Genotype and Phenotype)
 - Structure and Function of Genetic Material, DNA Replication
 - Microbial Genetics
 - Main differences between human and microbial genetics
 - Flow of Genetic Material
 - Central dogma of Molecular Genetics
 - Gene Expression and Protein Synthesis
 - Types of RNA
 - Genetic Variations and Mutations
 - Genetic Variations
 - Recombination
 - Mutations
 - DNA
 - Chromosomal

Module: Systemic bacteriology

- **Lectures 1-6:** Gram positive cocci (6 lectures)
 - Genus staphylococcus
 - Morphology and identification
 - Coagulase positive Staphylococci
 - Antigenic structure
 - Infections caused by *S. aureus*
 - Pathogenesis
 - Coagulase negative staphylococci.
 - Laboratory diagnosis.
 - Methicillin resistant Staphylococci.
 - Vancomycin resistant staphylococci.
 - Treatment of Staphylococcal infection.
 - Epidemiology and control.
 - Genus Micrococcus
 - Genus streptococcus and enterococcus
 - General characters and classification
 - Beta hemolytic streptococci (group A and B)
 - Alpha hemolytic structure (Viridans and *Streptococcus pneumoniae*)
 - Non hemolytic Streptococci and Enterococcus

- Diagnosis of Streptococcal infection
- **Lectures 7-9: Gram negative cocci**
 - Genus *Neisseria*
 - General character and classification
 - *Neisseria gonorrhoeae*
 - *Neisseria meningitidis*
 - *Moraxella (Branhamella) Catarrhalis*
- **Lecture 10-12: Gram positive bacilli (3lectures)**
 - Non spore forming
 - *Corynebacterium diphtheriae*
 - *Diphtheroids*
 - *Listeria monocytogenes*
 - Spore forming bacilli
 - Family *Bacillaceae* (Genus *Bacillus*)
 - *Bacillus anthracis*
 - *Bacillus cereus*
- **Lectures 13-15: Anaerobic bacteria**
 - Introduction and Definition
 - Predisposing factors to anaerobic infections and virulence factors of anaerobic bacteria
 - Laboratory diagnosis and specimens for anaerobic bacteriology
 - Bacteriological characteristics
 - *Clostridium tetani*
 - Introduction and Transmission
 - Pathogenesis and Clinical Findings
 - Diagnosis and prevention
 - *Clostridium perfringens*
 - Introduction and Transmission
 - Pathogenesis and Clinical Findings
 - Diagnosis and Prevention
 - *Clostridium difficile*
 - Introduction and Transmission
 - Pathogenesis and Clinical Findings
 - Diagnosis and Prevention
 - Other *Spp.* of anaerobic organisms
- **Lectures 16-18: Acid fast bacilli**
 - **Mycobacterium**
 - Meaning of acid fast bacilli and Classification.
 - Microscopical appearance and Cultivation.
 - Growth characteristics and Constituents of tubercle bacilli.
 - Pathogenicity of mycobacteria and clinical diseases.
 - Laboratory diagnosis.
 - Treatment and prevention.
 - *M. leprae*
- **Lectures 19-24: Gram negative bacteria (6 lectures)**
 - Enterobacteriaceae

- Classification and general characters
- Cultural characteristics and antigenic structure
- Factors of pathogenicity and endotoxins
- Genus *Escherichia*
 - Morphology, cultural characteristics, biochemical activity, serological characters, virulence factors
 - Diseases caused by E.coli
 - Diagnosis
- Tribe Klebsiellae
 - Genus *Enterobacter*
 - Genus *Serratia*
- Tribe Citrobacteriaceae
 - Genus *Citrobacter*
- Tribe Proteae
 - Genus *Proteus*
 - Morphology, cultural characteristics , biochemical activity and Treatment
 - Genus *Morganella*
 - Genus *Providencia*
- Primary intestinal pathogens
 - Genus *Shigella*
 - Morphology, cultural characteristics and biochemical activity
 - Factors of pathogenicity and pathogenesis
 - Complications
 - Diagnosis ,treatment and prevention
 - Genus *Salmonella*
 - Morphology, cultural characteristics, biochemical activity and serological characters
 - Factors of pathogenicity diseases
 - Diagnosis, treatment and prophylaxis
- Tribe Yersinieae
 - *Yersinia pestis*
 - *Y. enterocolitica*
 - *Yersinia pseudotuberculosis*
- **Lecture 25:** Non fermenters (1lecture)
 - *Pseudomonas*
 - *Acinetobacter*
- **Lectures 26-28:** Gram negative curved bacilli (3 lectures)
 - Family *Vibrionaceae*
 - *Vibrio cholerae*
 - *Vibrio parahaemolyticus*
 - *Aeromonas*
 - *Campylobacteraceae*
 - *Campylobacter jejuni* subsp *jejuni*
 - Genus *Helicobacter*
- **Lectures 29-31:**Fastidious gram negative bacilli (3 lectures)
 - *Haemophilus*
 - *Bordetella*
 - *Brucella*

Module: Antimicrobials and antimicrobial resistance (5 lectures)

➤ **Lectures 1-5**

- Definitions
- Antimicrobial mechanism of action and resistance
- Antimicrobials inhibit cell wall
- Antimicrobials inhibit protein synthesis
- Antimicrobials inhibit nucleic acid synthesis
- Antimicrobials inhibit cell membrane synthesis

Module: Atypical bacteria

- Mycoplasmas
- L-forms bacteria
- Chlamydia
- General features of Chlamydia and species
- C trachomatis
- Morphology Developmental Cycle
- Chlamydia Antigens
- C. Pneumoniae
- C. psittaci
- Spirochetes(Spiral bacteria)
- Classification and General Features
- Genus : Trypanema
- T pallidum subspecies pallidum

Module: Immunology

➤ **Lecture 1:**Introduction to immunology

- Definitions
- Organs of immune system
- Types of immune response

➤ **Lecture 2-4:**Types of immune response

- Innate immune
- Adaptive immune response
- Definition
- Elements of adaptive (specific) immunity
- Overview of adaptive (specific) immunity
- Cellular immune response (CD4 &CD8)
- Humeral immunity
- Antibody (Immunoglobulin)

➤ **Lectures 5,6:** Complement system (2lecture)

- Definitions
- Complement System Pathways
- Functions of Complement system
- Complement System Inhibitors

➤ **Lecture 7:** Immunization (1 lecture)

- Principle of immunization
- Types of immunizations
- Immunizing agents
- Vaccination

➤ **Lecture 8,9:** Hypersensitivity (2lecture)

- Classification
- Type I hypersensitivity mechanism , diagnosis and treatment

- Anaphylaxis and anaphylactoid
- Type II hypersensitivity mechanism
- Type III hypersensitivity mechanism
- Type IV hypersensitivity mechanism.
- Disease example caused by hypersensitivity
- **Lecture 10: Blood transfusion reaction (1lecture)**
 - Hemolytic reaction
 - Febrile non hemolytic reaction
 - Platelets related reaction
 - Rare transfusion reaction
 - Immunology of rhesus disease
 - Cross match and comb test
- **Lecture 11: Cytokines (1 lecture)**
 - Definitions
 - Families of cytokines and their function
- **Lecture 12: Immunity of sepsis and septic shock (1lecture)**
 - Definition of sepsis and septic shock
 - Pathogen recognition receptors
 - Cytokine changes in sepsis
 - Cytokine storm
- **Lecture 13: Chronic systemic inflammation (1 lecture)**
 - Causes
 - Inflammation in obesity
 - Inflammation induced insulin resistance
 - Cytokine and monoclonal antibody therapy
- **Lecture 14: Immune Tolerance and Autoimmunity (1lecture)**
 - Definitions
 - T-cell tolerance peripheral and central
 - b- Cell tolerance peripheral and central
 - Autoimmunity
 - Types of autoimmune diseases
 - Diagnosis and Treatments
- **Lecture 15: Immunology of organs (1 lectures)**
 - MHC complex
 - MHC genes
 - MHC antigens
 - MHC class I
 - MHC class II
 - MHC class III
- **Lecture 16: Tissues transplantation (1lecture)**
 - HLA Typing
 - Methods used for HLA typing
 - Types of transplant or graft
 - Preparations for transplantations
 - Immunosuppressive Agents
 - Transplant rejection
 - Graft versus host disease
- **Lecture 17: Immunodeficiency (1 lecture)**
 - Definitions
 - Types
 - Primary

- Secondary
- AIDS
- **Lecture 18:** Tumor immunology (1 lecture)
 - Definitions
 - Immune surveillance
 - Tumor antigens
 - Mechanisms in cancer immunity
 - Phases of immune interaction with tumor cells
 - Mechanisms of tumor cell immune escape
 - Immunotherapy of malignancy

Module: Virology

- **Lecture 1-4:** General virology (4 lectures)
 - Introduction to medical virology
 - Definitions
 - General characteristics of viruses.
 - Chemical composition of viruses.
 - Taxonomic classification of viruses.
 - Virus like agents.
 - Viral replication
 - Requirements for viral replication.
 - Stages of viral replication.
 - Pathogenesis of viral diseases.
 - Host immune response to viruses.
 - Diagnosis of viral infection
 - General approaches in the diagnosis.
 - Viral culture.
 - Identification of viruses.
 - Rapid diagnostic tests.
 - Serology in viral diagnosis.
 - Antiviral drugs.
 - Agents to treat herpes simplex virus.
 - Agents to treat cytomegalovirus.
 - Anti hepatitis agents.
 - Anti retroviral agents.
 - Anti influenza agents.

Module: Systemic virology

- **Lecture 5-10:** DNA viruses (6 lectures)
 - Parvoviridae.
 - Name of the virus.
 - General characteristics of the virus.
 - Diseases cause by the Parvo B19.
 - Diagnosis of the infections.
 - Papilloma viruses.
 - Adenoviruses
 - Herpes viridae
 - HSV1 and HSV2

- Other herpes viruses
 - Varicella zoster virus
 - Cytomegalovirus
 - HHV6
 - HHV7
- **Lectures 11-18: RNA viruses (8 lectures)**
 - Picornaviridae
 - Name of this family
 - Classification
 - Entroviruses
 - General characteristics
 - Polio viruses
 - Coxackie viruses
 - Echo viruses
 - Rhinoviruses
 - Diseases cause by each type of these viruses
 - Diagnosis and treatment.
 - Prevention of polio
 - Orthomyxoviridae
 - Paramyxoviridae
 - Rhabdoviruses
 - Coronaviridae
 - Retroviridae
 - Reoviridae
 - Hepatitis viruses
 - Types of the virus that infect the liver
 - Hepatitis A
 - Hepatitis B
 - Hepatitis C
 - **Nine Arboviruses**
 - What we mean by arbo virus
 - Viral families included under this type of viral infection
 - Diseases cause by arbovirus
 - **Hemorrhagic fever virus**
 - Types of the viruses cause hemorrhagic fever
 - Characteristics of these viruses
 - Family of the viruses included under this heading
 - Type of the disease cause by these viruses

Module: Mycology lectures =8

- **Lecture 1: Introduction (1 lectures)**
 - General properties of fungi.
 - mycological terms
 - Classification of fungi
 - antifungal agents
- **lecture 2: superficial mycosis (1lecture)**
 - Pityriasis versicolor (tinea versicolor)
 - Tinea nigra
 - pidera
- **lecture 3: Cutaneous mycosis (1 lectures)**

- Dermatophytes clinical infection
 - Tinea corporis pathogenesis, etiological agent laboratory diagnosis
 - Tinea pedis pathogenesis , etiological agent laboratory diagnosis
 - Tinea cruris pathogenesis, etiological agent laboratory diagnosis
 - Tinea barbae clinical type, etiological agent laboratory diagnosis
 - Tinea capitis clinical type, pathogenesis, etiological agent laboratory diagnosis
 - Tinea Unguium clinical type , etiological agent laboratory diagnosis
- Cutaneous candidiasis
- **Lecture 4:** Subcutaneous mycosis (1lecture)
 - Chromoblastomycosis
 - Mycetoma
 - Sporotrichosis
- **Lecture 5,6:** Systemic mycosis (2 lectures)
 - Histoplasmosis
 - Blastomycosis
 - Coccidioidomycosis (valley fever)
 - Paracoccidioidomycosis
- **Lecture 7,8:** The Opportunistic Mycoses (2 lectures)
 - Aspergilosis
 - Mucormycosis
 - Candidiasis
 - Cryptococosis
 - Pneumocystis jirovecii

Practical hours

- Laboratory instructions, microscope and smear preparation
- Bacterial staining (simple and complex)
- Culture media and sterilization
- Isolation of microorganisms from the environment & clinical sampling
- Genus Staphylococcus
- Genus Streptococcus
- Genus Neisseria
- Genus Bacillus
- Genus Clostridium
- Genus Corynebacterium
- Lymphocytes Cell Surface Markers
- Antibody – Antigen reactions (Serological tests)
- Polymerase Chain Reaction (PCR)
- Gram negative bacilli (Enterobacteriaceae)
- Escherichia coli and Genus Klebsiella
- Genus Salmonella and Genus Shigella
- Genus Proteus and Genus Pseudomonas
- Fastidious Gram negative Coccobacilli
- Mycology (2 lab.s)
- Class zygomycete genus Rhizopus
- Class Deutromycete
- Superficial mycosis
- Cutaneous mycosis
- Unicellular fungi

Parasitology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	University of Mosul/ College of Medicine	
Department offering the course	Microbiology Department	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 3rd year	
Title of the course	Parasitology	
Code	MCMi 303	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 60 hours	Total= 120 hours
	Theoretical hours= 60 hours	
Date of specification approval	1/10/2022	

General Aims of Course

The main aims of this course are to:

1. Introduce the medical college students to the basic principles of medical parasitology and to the basic structure of the composition of medical parasite
2. Give the medical school students knowledge, skills and attitudes in medical Parasitology integrated with clinical applications.
3. Identify the host and parasite relationship

Intended learning outcomes of the course:

By the end of the course, students will be able to:

Knowledge and understanding	<ol style="list-style-type: none">1. Illustrate morphology, biology , life cycle and transmission of medically important parasites .2. Review the host parasite relationship and its effect on pathogenesis and clinical picture of parasitic infections3. Recite various laboratory tests for identifying and diagnosing types of parasite.4. Recognize the basic principles of treatment of parasitic infections using anti-parasitic medications.5. Describe how can a certain parasitic infection is presented
Intellectual Skills	<ol style="list-style-type: none">1. Interpret results of microscopic examination of parasite containing samples.2. Formulate a systematic approach for laboratory diagnosis of common parasitic infections and select the most appropriate tool for their identification.3. Relate the pathogenic parasite of the disease and proper management.4. Analyse the parasitic infection pathogenesis and its host parasite relationship.5. Design a plan to prevent parasitic infection
Professional Skills	To carry out the practical skills necessary for diagnosing parasitic diseases, starting with the light microscope and how to use it, direct examination, and laboratory staining methods, and reaching the most complex laboratory methods such as molecular tests.
General and Transferable Skills	Evaluate the causal relationship of parasite and diseases.
Attitude outcomes	<ul style="list-style-type: none">• Examine ethical problems in relation to the topics and act accordingly• Formulate Ideas about transmission of parasitic infections and React against endemic, epidemic and pandemic parasitic infections• Verify results of laboratory tests regarding parasitic infections• Cooperate with medical personals in field of medical parasitology and contribute actively in diagnosing, treating and preventing parasitic infections

Course structure			
Topic	No. Of lectures (1 hour/ lecture)	No. Of labs (2 hours/ lab)	Lecturer
Parasitology			
1st semester			
Introduction to Parasitology	1		Dr. Saed Hamid
		1	Dr. Ikram Al-hasso
Intestinal protozoa pathogenic and non-pathogenic	3	2	Dr. Saed Hamid
		1	Dr. Omar Nazar
Ciliated protozoa (<i>Balantidium coli</i>)	1	2	Dr. Saed Hamid
		1	Dr. Omar Nazar
Intestinal flagellates (Giardia)	2		Dr. Ahmed Abdulla
		1	Dr. Omar Nazar
Cryptosporidium, Isospora and Microsporidia	2		Dr. Ahmed Abdulla
<i>Trichomonas vaginalis</i> and <i>Trichomonas tenax</i>	1		Dr. Ahmed Abdulla
		1	Dr. Omar Nazar
Haemo- flagellates (Leshmania)	2		Dr. Ahmed Abdulla
		1	Dr. Zena Makki
Tissue- flagellates(Trypanosoma)	1		Dr. Ahmed Abdulla

		1	Dr. Neam Basheer
Malaria	6		Dr. Ikram Al-hasso
		2	Dr. Neam Basheer Dr. Omar Nazar
<i>Toxoplasma gondii</i>	1		Dr. Saed Hamid
		1	Dr. Saed Hamid
Primary amebic meningoencephalitis (PAM)	2		Dr. Ahmed Abdulla
Trematodes(flukes)	5		Dr. Asma Zaki
Nematodes: <i>Ascaris Lumbricoides</i> and <i>Enrobilus vermicularis</i>	2		Dr. Saed Hamid
		2	Dr. Saed Hamid Dr. Ikram Al-hasso
2nd semester			
<i>Strongyloides stercoralis</i> <i>Trichuris trichura</i> <i>Wuchereria bancrofti</i> Ocular worm infections Hook worm <i>Dracunculus medinensis</i>	10		Dr. Saed Hamid
		3	Dr. Ikram Al-hasso Dr. Neam Basheer
Tapeworm (Cestodes)	5		Dr. Ikram Al-hasso
		3	Dr. Saed Hamid Dr. Omar Nazar
		2	Dr. Neam Basheer Dr. Omar Nazar
Immune response of parasitic infections	2		Dr. Ahmed Abdulla

Scabies and mites Lice Miyasis Anopheles and Sand flys, fleas and Ticks Clinical presentations of parasitic infections	11		Dr. Ahmed Abdulla
		4	Dr. Neam Basheer Dr. Omar Nazar Dr. Saed Hamid
Anti-parasitic medications	1		Dr. Ikram Al-hasso
		1	Dr. Omar Nazar
Diagnostic Methods in Parasitology	2		Dr. Ikram Al-hasso
		1	Dr. Ahmed Abdulla

Teaching and learning methods	
Theoretical lectures	2 lecture are given / week in lecture hall 1 hour/ lecture
Practical labs or clinical sessions	Demonstration is given at the start of each lab session then the students are divided into small groups each of 10-15 students under supervision of a faculty member and take the lesson in Microbiology labs at the College of Medicine 2 hours/ each lab session

Seminars and presentations	Each group of students (5-7 students) will choose a topic in Microbiology at the beginning of the academic year. Each group is supervised by one academic staff. The group presents the seminar in front of a peer review panel of department faculty members in the presence of other students at a predetermined schedule time.
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Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Individual questions 2. Discussion panel 3. Comparing the results obtained by the student from examining and evaluating medical forms and samples 4. Assignments 5. Log book delivered to the department periodically for checking.
Summative assessments	<ul style="list-style-type: none"> • Practical exams: The examination is a sort of different stations, at which different forms of parasitology related microscopical slides, pictures, plans, comparisons are used examination. <ul style="list-style-type: none"> • Theoretical exams “ essay and multiple choice question “ performed as: <ul style="list-style-type: none"> - Quizzes - Mid year exam - final exam <p>Theory examination</p> <ol style="list-style-type: none"> a) Mid year examination : 25 marks b) Final year examination 45 marks <p>Practical examination</p> <ol style="list-style-type: none"> a) Mid year examination : 10 marks

	b) Final year examination : 15 marks Quizzes a) 1 st semester : 2.5 marks b) 2 nd semesters: 2.5 marks Total marks : 100%
6. Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. London , Panama, JAYPEE.(Assigned book for third class medical parasitology). 2. BURTON J. Bogitsh, Clint E. Carter, and Thomas N. Oeltmann, 2013, Human parasitology 4th edition, USA and UK, Elsevier.
Recommended text books	<ul style="list-style-type: none"> • Zeibig A. Elizabeth, 2013, Clinical parasitology, USA, Elsevier • Rohela Mahmud · Yvonne Ai Lian Lim Amirah Amir 2017 • Medical Parasitology: A Textbook. <p>Springer International Publishing AG 2017</p> <ul style="list-style-type: none"> • https://doi.org/10.1007/978-3-319-68795-7
Other resources	<ul style="list-style-type: none"> • World health organisation. • CDC.gov

Theoretical lectures

Module: Introduction to human parasitology

- Classification and general terminology
- Life Cycle of Parasites
- Sources of Infection
- Modes of Infection and Pathogenesis
- Diagnosis of parasitic diseases
- Immunity in Parasitic Infection

Module: Protozoa

➤ **Lecture 1-4:** Intestinal protozoa (4 lectures)

- Ameobas
 - *Entamoeba histolytica*
 - Epidemiology
 - Morphology and Life Cycle
 - Pathogenesis and Clinical Features
 - Laboratory diagnosis
 - Treatment
 - Prevention & Control
 - Nonpathogenic amoebas
 - *E.coli*.
 - *E.gingivalis* .
 - *Dientamoeba fragilis*.
 - *Endolimax nana* .
 - *Iodoamoeba butschlii* .

➤ **Lecture 5:** Ciliated protozoa (1 lecture)

- *Balantidium coli*
 - Morphology and Life Cycle
 - Pathogenesis and clinical Features
 - Laboratory diagnosis and treatment
 - Prevention & Control

➤ **Lecture 6,7:** Intestinal flagellates (2lectures)

- *Giardia*
 - Historical background
 - Habitat, Morphology and Life cycle
 - Pathogenicity and Spread of infection
 - Risk group and Clinical picture
 - Diagnosis and treatment

➤ **Lecture 8,9:** Apicomplexa (2 lectures)

- *Cryptosporidium parvum*
 - Morphology and life cycle
 - Pathogenesis and Clinical picture
 - Diagnosis and Treatment
 - Prevention and control
- *Isospora belli*
 - Transmission Morphology and Life cycle
 - Clinical picture and complications
 - Diagnosis and Treatment
 - Prevention and control

- **Lecture 10,11:** Extraintestinal protozoa (2 lectures)
 - *Amoeba: Amebic meningoencephalitis*
Naegleria fowleri and Acanthamoeba
 - Morphology and Transmission
 - Clinical picture
 - Diagnosis and Treatment
 - Prevention
 - *Flagellates:*
 - *Trichomonas*
 - *Trichomonas vaginalis*
 - *Trichomonas tenax and hominis*

- **Culture 12-14:** Blood and tissue flagellates
 - *Haemo-flagellates (Leishmania)*
 - Introduction and epidemiology
 - Morphological forms and life cycle
 - Clinical picture
 - Diagnosis and treatment
 - Post Kala azar dermal Leishmaniasis
 - Prevention
 - Leishmania in Iraq
 - *Tissue-flagellates(Trypanosoma)*
 - Disease
 - Morphology
 - Habitat, Host and Infective stage
 - Transmission and Life cycle
 - Pathogenesis and Clinical picture
 - Diagnosis and Treatment
 - Prevention

- **Lecture 15-21:** Apicomplexa (7 lectures)
 - *Malaria*
 - Introduction, History and distribution
 - Classification of endemicity
 - Life cycle
 - Types of malaria parasites
 - Pathogenesis and Clinical features
 - Laboratory diagnosis and Treatment
 - Prevention and control
 - Malaria in Iraq
 - *Babesia microti*
 - Morphology
 - Life cycle
 - Differentiation from malaria
 - *Toxoplasma gondii*
 - Geographic Distribution
 - Morphology and Risk factors for T. Gondii
 - Source of infection and Life Cycle
 - Pathogenicity and Clinical Features
 - Laboratory Diagnosis and Treatment
 - Prophylaxis and control

Module: Metazoea Helminthes

- **Lecture 1:** Introduction and classification (1 lecture)
 - Differences Between Cestodes, Trematodes, and Nematodes
 - Life cycle and Modes of Infection
 - Adult worms and Eggs
- **Lecture 2-12:** Nematodes (11 lectures)
 - *Ascaris Lumbricoides*
 - *Enrobilus vermicularis*
 - *Strongyloides stercoralis*
 - *Trichuris trichura*
 - *Hook worms*
 - *Ancylostoma duodenale*
 - *Necator americanus*
 - *Dracunculus medinensis*
 - *Trichinella spiralis*
 - Filarial nematodes
 - Lymphatic filariasis: *Wuchereria Bancrofti*
 - Subcutaneous filariasis : *Loa Loa*
 - Serous cavity filariasis : *Mansonella ozzardi*
 - Zoonotic Filariasis
- **Lecture 13-17:** Miscellaneous nematodes
 - Trematodes (5 lectures)
 - Classification
 - General characters
 - Blood flukes (schistosomes)
 - *Schistosoma haematobium*
 - *Schistosoma mansoni*
 - *Schistosoma japonicum*
 - Tissue fluke
 - Types and classification
 - Liver fluke
 - *Fasciola hepatica*
 - *Clonorchis sinensis* and *Opisthorchis viverrini*
 - Intestinal flukes
 - Types and classification
 - *Fasciolopsis buski*
 - Heterophyes heterophyes and *Metagonimus yokogawai*
 - Lung flukes (*Paragonimus westermani*)

Module: Cestodes

(Habitat and Morphology, Life Cycle and Clinical features, Laboratory Diagnosis and Treatment ,Prevention and control)

- **Lecture 1:** *Echinococcus granulosus*
- **Lecture 2:** *Taenia Saginata* and *Taenia Solium*
- **Lecture 3:** *Hymenolepis Nana*
- **Lecture 4,5:** *Diphyllobothrium Latum*

Module: Immune response of parasitic infections

➤ **Lecture1, 2:**

- Immune response to helminthes
- Immune modulation by helminthes and its applications.
- Immune response to Protozoa
- Vaccination against parasitic infections

Module: Medical Entomology

➤ **Lecture1-3:** Sarcoptes scabies

➤ **Lecture4-6:** House dust mites

- Lice
- Ticks
- Miyasis
- Anopheles
- Sandflies
- Fleas

Module: Clinical presentations of parasitic infections

➤ **Lecture1,2**

- Parasites causing diarrhea
- Parasites causing
- Parasites causing skin symptoms
- Parasites causing eye problems
- Parasites causing pulmonary symptoms
- Parasites causing urinary tract symptoms
- Parasites causing shock
- Parasites causing anemia
- Parasites causing neurological signs and symptoms

Module: Anti-parasitic medications

➤ **Lecture 1, 2:**

- Anti- protozoal drugs
- Anti- helminthic drugs
- Insecticidal agents

Module: Diagnostic Methods in Parasitology

➤ **Lecture1:**

- Microscopy
- Culture
- Serology
- Molecular techniques

Practical hours

- Fecal smear
- Slide for ova and parasite
- Entamoeba histolytica
- E. coli
- Balantidium coli
- Endolimax nana
- Giardia lamblia
- Trichomonas vaginalis
- Leishmania
- Trypanosoma
- Malaria (P. vivax and P. malariae)
- Malaria (P. falciparum, oocysts and crescent)
- Toxoplasma gondii
- Ascaris lumbricoides
- Enterobius vermicularis
- Strongyloides stercoralis
- Trichuris trichiura \
- Schistosoma \
- Trematodes/ Fasciola
- Lice
- Scabies
- Hemoflagellates and Sandfly
- Echinococcus
- Hookworm
- Taenia spp.
- Trichinella spiralis

Pathology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/college	CMUM	
Department offering the course	Department of Pathology	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023/ 3 rd year	
Title of the course	Pathology	
Code	MCPa304	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 120	Total=240
	Theoretical hours= 120	
Date of specification approval	11/11/2022	

General Aims of Course

Develop the student's knowledge, skill, and attitude related to pathogenesis, morphological (microscopic and macroscopic pictures) and clinical manifestations of basic pathological processes and specific diseases at the molecular, cellular, tissue, organs, and whole body level.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

<p>Knowledge and understanding:</p>	<ol style="list-style-type: none">1. Identify altered structure and function of the body and its major systems that are seen in various diseases as regard etiology, pathogenesis, pathological features, prognosis, fate & complications.2: Comprehend the general pathological features of inflammation (definition, etiology, types, pathogenesis of each type, gross morphology, microscopic features, systemic manifestations, fate & complications), tissue repair (definition, types, examples for each & factors affecting tissue repair), cell injury (etiology, pathogenesis, types, examples for each, macroscopic & microscopic features and effects) and cell death (types and examples, etiology, pathogenesis & pathological features).3 Explain different forms of circulatory disturbances as atherosclerosis, embolism, gangrene, edema, congestion, thrombosis.....etc.4. Identify different aspects of infections as toxemia, bacteraemia, septicaemia and pyaemia5 Explain aetiology, pathogenesis, clinical presentation, pathological forms, macroscopic & microscopic features, fate and complications of(tuberculosis. Syphilis and pathological features of various viral, mycotic and parasitic diseases)6. Interpret the changes in genes and chromosomes that cause some diseases, especially tumors and genetic diseases7. Recognize patterns, pathogenesis and morphology of growth disturbances8. Summarize the steps of carcinogenesis and identify the origin and morphological features of different types of neoplasms.9. Distinguish the aetiology, pathogenesis, clinical features, diagnosis of common and life threatening illness affecting the body and each of its major organ systems, presenting throughout the age spectrum including inflammatory, neoplastic and degenerative lesions of different body systems including:-<ul style="list-style-type: none">- Cardiovascular system
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	<ul style="list-style-type: none"> - Respiratory system - Hematopoietic system - Lymph nodes and spleen - Gastrointestinal system - Hepatobiliary system - Exocrine pancreas and peritoneum - Urinary system - Male genital system - Female genital system - Breast - Endocrine glands - Musculoskeletal system - Central nervous system
Intellectual Skills	<p>1. Relate the morphological changes of common and important diseases at macroscopic and microscopic level to clinical conditions such as:</p> <ul style="list-style-type: none"> - Growth disturbances (e.g. hypertrophy, atrophy, hyperplasia -Inflammatory lesions (e.g. acute appendicitis, chronic) - cholecystitis) - Tissue repair (e.g. skin scar) - Degenerative diseases (e.g. cloudy swelling, fatty liver, hyalinosis, amyloidosis) - Circulatory disturbances (e.g. thrombus, pulmonary embolism) - Infectious diseases (e.g. tuberculosis) - Neoplasms whether benign (e.g. nevus, papilloma) or malignant (e.g. carcinoma, sarcoma) - Cardiovascular diseases (e.g. ventricular hypertrophy) - Respiratory diseases (e.g. emphysema, oat cell carcinoma) - Gastrointestinal diseases (e.g. crohn's disease, ulcerative colitis) - Hematological disease (Anemia , Bleeding disorders and leukemia) - Hepatobiliary diseases (e.g. gall stones, cirrhosis, hepatocellular carcinoma) - Urinary system (e.g. polycystic kidney, bladder carcinoma) - Male genital system (e.g. benign prostatic hyperplasia, testicular tumors) - female genital system (e.g. patterns of endometrium,

	<p>ovarian tumors)</p> <ul style="list-style-type: none"> - breast (e.g benign & malignant breast tumors) - endocrine diseases (e.g goiter) - musculoskeletal diseases (e.g tumors of bone and cartilage) - diseases of lymph nodes (e.g reactive hyperplasia, lymphoma) - CNS diseases (e.g meningioma, cerebellar astrocytoma). <p>2- Associate clinical manifestation with pathological mechanisms occurring at the molecular, tissue, organ, and whole body level such as:</p> <ul style="list-style-type: none"> o Suppuration o Fibrosis & collagen deposition during tissue repair o Pathogenesis of thrombosis, embolisms & gangrene o Pathogenesis of primary and secondary tuberculosis o Steps of carcinogenesis. <p>3- Predict complications and organize prognostic factors of various diseases such as:</p> <ul style="list-style-type: none"> - Inflammatory lesions e.g abscess - Tissue repair e.g tissue fibrosis - Circulatory disturbances e.g thrombosis, embolism - Infectious diseases e.g TB - Neoplasms in different organs
Professional Skills	<p>1. Illustrate microscopic data of different pathological lesions.</p> <p>2- Differentiate between different diagnoses to arrive at a preferred or definite diagnosis.</p>
General and Transferable Skills	<p>1- Communicate ideas and arguments effectively.</p> <p>2- Work effectively within a team.</p>
Attitude outcomes	<p>Appraise the importance of clinicopathological assessment to reach optimal diagnosis and prompt treatment</p>

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Introduction to pathology	٢	١	Dr. Zahraa Marawan/dr.Ali Nazar
Cell injury, cellular adaptation and cell death	٤	٢	Dr.Ali Nazar/dr. Inam Ganim/dr. Elaf Hamdi
Acute & chronic inflammation	8	3	Dr.Nadwa Alazzo/dr. Khalid wissam/dr.Mustafa Salah/dr.Mays Hadid
Tissue renewal & repair, regeneration, healing & fibrosis	2	1	Dr.Nadwa Alazzo/Dr. Morroj Salih/ dr. Inam Ganim
Hemodynamic disorders, thromboembolism diseases & shock	6	2	Dr.Eklas Ahmed /Dr.Inam Ganim/Dr.Elaf Hamdi/Dr.Morooj Saleh
Genetic disorders	٥	3	Dr.Zahraa Marwan/ dr. Inam Ganim/Dr.Mays Hadid

Diseases of immunity	5	2	Dr.Khalid Wissam/ Dr.Elaf Hamdi/Dr.Morooj Salih
Neoplasia	8	4	Dr.Wahda Alneumy/ Dr.Khalid Wissam/ Dr.Elaf Hamdi/Dr.Morooj Salih/Dr.Ali Nazar/Dr.Inam Ganim /Dr.Mays Hadid
Infectious diseases	5	4	Dr. Mustafa Salah/ Dr.Elaf Hamdi/Dr.Morooj Salih
Environmental &Nutritional pathology	4	1	Dr.Morooj Salih/Dr.Inam Ganim /Dr. Elaf Hamdi
Diseases of infancy & childhood	4	2	Dr. Elaf Hamdi/ Dr.Morooj Salih/Dr.Inam Ganim
Cardiovascular system	8	5	Dr.Eklas Ahmed /Dr.Mays Hadid/Dr.Ali Nazar/Dr.Kalid Wissam /Dr.Mutafa Salah/Dr.Elaf Hamdi
Hematopoietic and Lymphoid Systems	10	5	Dr.Muna Kashmoola/Dr.Samar Salah/Mohamed Hassan/Dr.Inam Ganim
Respiratory system	^	4	Dr.Nadwa Alazzo/Dr.Khalid Wissam/Dr.Ali Nazar /Dr.Elaf Hamdi
Gastrointestinal tract	8	5	Dr.Zahraa Marwan/Dr.Morooj Salih/Dr.Mays Hadid/dr.Inam Ganim

Liver, biliary tract & pancreas	7	2	Dr.Ali Nazar/Dr.Elaf Hamdi/Dr.Morooj Salih /Dr.Mays Hadid
Urinary system	8	4	Dr.Mustafa Salah/ Dr.Ali Nazar /Dr.Elaf Hamdi/ Dr.Morooj Salih
Female genital tract	6	2	Dr.Wahda Alneumy/ Dr.Khalid Wissam/ Dr.Elaf Hamdi/Dr.Morooj Salih/Dr.Inam Ganim
The breast	2	2	Dr.Eklas Ahmed /Dr.Mays Hadid /Dr.Kalid Wissam Dr.Elaf Hamdi
Endocrine system	4	2	Dr.Mays Hadid /Dr.Kalid Wissam Dr.Elaf Hamdi
Skin	2	1	Dr.Elaf Hamdi/Dr.Inam Ganim
Bones & joints	2	2	Dr. Morooj Salih/Dr.Inam Ganim
Central nervous system	2	1	Dr. Ali Nazar / Dr.Inam Ganim

Teaching and learning methods	
1. Theoretical lectures	<p>** Lectures take place 4 times per week for each group & a total period 8 hours weekly for 2 groups. The lecture hall is the theater hall inside University student center</p>
2. Practical labs or clinical sessions	<p>Group teaching take place once weekly of a period 2 hours for each 60 student group teaching. The group teaching is take place in the large pathology Lab. (2 hours for Power point slides of gross specimens and microscopic slides in different pathological conditions, The students of each session are divided into small groups (10-15 students each). For each group, one demonstrator or assistant lecturer is available. The slide session are taken in student labs in pathology department.</p>

<p>3. Seminars and presentations</p>	<p>Seminar and Discussion group teaching once weekly of a period 2 hours. It take place in the large pathology Lab. Discussion and Seminars prepared by third year medical students on selected pathology topics by power point)</p> <p>Tutorial and problem based learning in the form of cases and MCQ is defined for each session and are discussed with one of staff.</p> <p>Self learning: through giving them certain topics to search, collect data and present it in front of senior staff</p>
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Assessment methods	
<p>1. Formative assessments</p>	<p>1 Homework.(MCQ and cases senarios were given almost after each topics of lectures and conducted to the students through the google classroom)</p> <p>2. Self learning: through giving them certain topics to search, collect data and present it in front of senior staff</p>

2. Summative assessments	1. Quizzes (first semester) 2.5% 2. Quizzes (second semester) 2.5% 3. Mid year Theory Exam 25% 4. Mid year Practical Exam 10% 5. Final Theory Exam 45% 6. Final Practical Exam 15 %
3. Pass mark	50%

Resources and requirements	
Essential text books	- 1. Robbins basic pathology 10th ed
Recommended text books	- 1. Text book of pathology By Muir's
Other resources	(Web Sites) 1-Wepath(https://webpath.med.utah.edu) 2.Pathologyoutlines(https://www.pathologyoutlines.com)

Theoretical lectures

Module: Introduction to pathology.

- **Lecture 1:** Introduction to pathology.

Module: Cell injury, cellular adaptation and cell death.

- **Lecture 1:** Adaptation.
 - Overview of Cellular Responses to Stress and Noxious Stimuli
 - Cellular Adaptations to Stress
 - Hypertrophy
 - Hyperplasia
 - Atrophy
 - Metaplasia
- **Lecture 2** Cell injury.
 - Causes of Cell Injury
 - Sequence of Events in Cell Injury and Cell Death
 - Mechanisms of Cell Injury and Cell Death
 - Hypoxia and Ischemia
 - Ischemia-Reperfusion Injury
 - Oxidative Stress
 - Cell Injury Caused by Toxins
 - Endoplasmic Reticulum Stress
 - DNA Damage
- **Lecture 3** Types of cell Injury
 - Reversible Cell Injury
 - Irreversible Cell Injury (Cell Death)
 - Necrosis
 - Apoptosis
 - Other Pathways of Cell Death
 - Autophagy
- **Lecture 4**
 - Intracellular accumulation.
 - Pathologic calcification.

Module: Acute & chronic inflammation: (5 lectures)

- **Lecture 1** General features of inflammation.
 - Overview of Inflammation: Definitions and General Features
 - Causes of Inflammation
 - Recognition of Microbes and Damaged Cells
- **Lecture 2** Acute inflammation.
 - Reactions of Blood Vessels in Acute Inflammation
 - Leukocyte Recruitment to Sites of Inflammation
 - Phagocytosis and Clearance of the Offending Agent
 - Leukocyte-Mediated Tissue Injury
 - Other Functional Responses of Activated Leukocytes
 - Termination of the Acute Inflammatory Response

- **Lecture 3** Chemical Mediators of Inflammation of Acute inflammation.
 - Chemical Mediators of Inflammation
 - Vasoactive Amines: Histamine and Serotonin
 - Arachidonic Acid Metabolites
 - Cytokines and Chemokines
 - Complement System
 - Other Mediators of Inflammation
- **Lecture 4** Morphologic Patterns of Acute Inflammation
 - Morphologic Patterns of Acute Inflammation
 - Serous Inflammation
 - Fibrinous Inflammation
 - Purulent (Suppurative) Inflammation, Abscess
 - Ulcers
 - Outcomes of Acute Inflammation
 - Systemic Effects of Inflammation
- **Lecture 5** Chronic Inflammation 81
 - Causes of Chronic Inflammation
 - Morphologic Features
 - Cells and Mediators of Chronic Inflammation

Module: Tissue renewal & repair, regeneration, healing & fibrosis (2 Lectures)

- **Lecture 1**
 - Overview of Tissue Repair
 - Cell and Tissue Regeneration
 - Control of normal cell proliferation & tissue growth
 - Cell cycle & the regulation of cell replication.
 - Mechanism of tissue regeneration.
 - Extracellular matrix (ECM) & cellular matrix interaction
- **Lecture 2** Repair by healing, scar formation, & fibrosis.
 - Repair by Scarring
 - Factors That Impair Tissue Repair
 - Clinical Examples of Abnormal Wound Healing and Scarring
 - Cutaneous wound healing.
 - Healing of bone fracture.

Module: Hemodynamic disorders, thromboembolism diseases & shock

- **Lecture 1** Hyperemia and Congestion
 - Normal Hemostasis
 - Edema
 - Increased Hydrostatic Pressure
 - Reduced Plasma Osmotic Pressure
 - Lymphatic Obstruction
 - Sodium and Water Retention
- **Lecture 2** Hemorrhage and Thrombosis
 - Hemorrhage
 - Thrombosis
 - Disseminated Intravascular Coagulation (DIC)
- **Lecture 3** Embolism

- Pulmonary Thromboembolism
- Systemic Thromboembolism
- Fat Embolism
- Amniotic Fluid Embolism
- Air Embolism
- **Lecture 4** Infarction and Shock
- Infarction
- Factors That Influence Infarct Development
- Shock
- Pathogenesis of Septic Shock
- Stages of Shock

Module: Genetic disorders (5 Lectures)

- **Lecture 1:**
 - Definition of genetics.
 - Classification of genetic disorders.
- **Lecture 2:**
 - Chromosomal disorders
 - Mendelian Disorders
- **Lecture 3:**
 - X-linked disorders
 - Biochemical and molecular basis of single-gene (mendelian) disorders
 - Define mutations and its types
- **Lecture 4:**
 - Multifactorial disorders
 - Single gene disorders with Non-Classic (Atypical) pattern of inheritance
- **Lecture 5:**
 - Aims of studying genetic diseases
 - Molecular cytogenetic
 - Clinical genetics
 - Genetic Counseling

Module: Diseases of immunity

- **Lecture 1**
 - General features of immune system
 - Cells & tissue of immune system
 - Disorders of immune system
- **Lecture 2**
 - Mechanisms of hypersensitivity reaction
 - Autoimmune diseases
- **Lecture 3**
 - Immunological deficiency syndrome
 - Transplantation rejection
- **Lecture 4**
 - Tumor immunity
 - Amyloidosis

Module: Neoplasia

- **Lecture 1**
 - Definition
 - Nomenclature
 - Benign Tumors
 - Malignant Tumors
- **Lecture 2**
 - Characteristics of Benign and Malignant Neoplasms
 - Differentiation and Anaplasia
 - Local Invasion
 - Metastasis
- **Lecture 3**
 - Epidemiology
 - Cancer Incidence
 - Environmental Factors
 - Age and Cancer
 - Acquired Predisposing Conditions
 - Interactions Between Environmental and Genetic Factors
- **Lecture 4**
 - Cancer Genes
 - Genetic Lesions in Cancer
 - Driver and Passenger Mutations
 - Epigenetic Modifications and Cancer
 - Carcinogenesis: A Multistep Process
- **Lecture 5**
 - Hallmarks of Cancer
 - Self-Sufficiency in Growth Signals
 - Insensitivity to Growth Inhibitory Signals: Tumor Suppressor Genes
 - Altered Cellular Metabolism
 - Evasion of Cell Death
 - Limitless Replicative Potential (Immortality)
 - Sustained Angiogenesis
 - Invasion and Metastasis
 - Evasion of Immune Surveillance
 - Tumor-Promoting Inflammation as an Enabler of Malignancy
- **Lecture 6**
 - Etiology of Cancer: Carcinogenic Agents
 - Chemical Carcinogens
 - Radiation Carcinogenesis
 - Viral and Microbial Oncogenesis
- **Lecture 7**
 - Clinical Aspects of Neoplasia
 - Effects of Tumor on Host
- **Lecture 8; Grading and Staging of Cancer**
- **Lecture 9: Laboratory Diagnosis of Cancer**

Module: Infectious diseases (4 Lectures)

- **Lecture 1**
 - General principles of microbial pathogenesis.
 - Transmission of microbes.

- How microorganism cause disease.
- **Lecture 2**
- Immune evasion by microbes.
- Infection in immunosuppressed hosts
- Special technique in diagnosing infectious agents.
- Spectrum of inflammatory response to infection.
- **Lecture 3**
- Viral infection.
- Bacterial infection
- **Lecture 4**
- Fungal infection.
- Parasitic infestation.
- Protozoa.

Module: Environmental & Nutritional pathology

- **Lecture 1**
- Environment & diseases
- Common environment & occupational exposure
- Outdoor air pollution
- Indoor air pollution
- Agriculture hazards
- **Lecture 2**
- Radiation injury
- Physical environment
- Therapeutic drug
- Natural toxins
- **Lecture 3**
- Nutrition & diseases
- Nutritional deficiency
- Obesity
- Diet & systemic disease
- Chemoprevention of cancer

Module: Diseases of infancy & childhood

- **Lecture 1**
- Congenital anomalies
- Birth weight & gestational age
- Birth injuries
- Perinatal infections
- **Lecture 2**
- Respiratory distress syndrome
- Fetal hydrops
- Inborn error of metabolism
- Sudden infant death syndrome
- Tumor & tumor-like lesion

Systemic pathology

Module: Cardiovascular system (10 Lectures)

➤ **Lecture 1**

- Structure and Function of Blood Vessels
- Vascular Organization
- Endothelial Cells
- Vascular Smooth Muscle Cells

➤ **Lecture 2**

- Congenital Anomalies
- Blood Pressure Regulation
- Hypertensive Vascular Disease
- Epidemiology of Hypertension
- Mechanisms of Essential Hypertension

➤ **Lecture 3**

- Vascular Wall Response to Injury
- Intimal Thickening: A Stereotypical Response to Vascular Injury 36
- Arteriosclerosis
- Atherosclerosis
- Epidemiology of Atherosclerosis
- Clinicopathologic Consequences of Atherosclerosis

➤ **Lecture 4** Aneurysms and Dissections

- Abdominal Aortic Aneurysm
- Thoracic Aortic Aneurysm
- Aortic Dissection
- Vasculitis
- Noninfectious Vasculitis
- Infectious Vasculitis

➤ **Lecture 5** Disorders of Blood Vessel Hyperreactivity

- Raynaud Phenomenon
- Myocardial Vessel Vasospasm
- Veins and Lymphatics
- Varicose Veins of the Extremities
- Varicosities of Other Sites
- Thrombophlebitis and Phlebothrombosis
- Superior and Inferior Vena Cava Syndromes
- Lymphangitis and Lymphedema

➤ **Lecture 6**

- Tumors
- Benign Tumors and Tumor-Like Conditions
- Intermediate-Grade (Borderline) Tumors
- Malignant Tumors
- Pathology of Vascular Intervention
- Endovascular Stenting
- Vascular Replacement

➤ **Lecture 7**

- Normal myocardium & blood supply
- Overview of Heart Disease
- Heart Failure
- Left-Sided Heart Failure
- Right-Sided Heart Failure
- Congenital Heart Disease

- Malformations Associated With Left-to-Right Shunts
- Malformations Associated With Right-to-Left Shunts
- Malformations Associated With Obstructive Lesions
- **Lecture 8**
- Ischemic Heart Disease
- Angina Pectoris
- Myocardial Infarction
- Chronic Ischemic Heart Disease
- Cardiac Stem Cells
- Arrhythmias
- Sudden Cardiac Death
- **Lecture 9**
- Hypertensive Heart Disease
- Systemic (Left-Sided) Hypertensive Heart Disease
- Pulmonary Hypertensive Heart Disease—Cor Pulmonale
- Valvular Heart Disease
- Degenerative Valve Disease
- Rheumatic Valvular Disease
- Infective Endocarditis
- Noninfected Vegetations

- **Lecture 10: Pericardial Disease**
- Pericardial Effusion and Hemopericardium
- Pericarditis
- Cardiac Tumors
- Primary Neoplasms
- Cardiac Effects of Noncardiac Neoplasms
- Cardiac Transplantation

Module: Hematopoietic and Lymphoid Systems

- **Lecture 1: Red Cell Disorders**
- Anemia of Blood Loss: Hemorrhage
- Hemolytic Anemia
- Hereditary Spherocytosis
- Sickle Cell Anemia
- Thalassemia
- Glucose-6-Phosphate Dehydrogenase Deficiency
- Paroxysmal Nocturnal Hemoglobinuria
- Immuno-hemolytic Anemia
- Hemolytic Anemia Resulting From Mechanical Trauma to Red Cells
- Malaria
- **Lecture 2: Anemia of Diminished Erythropoiesis**
- Iron Deficiency Anemia
- Anemia of Chronic Inflammation
- Megaloblastic Anemias
- Aplastic Anemia
- Myelophthistic Anemia
- **Lecture 3: Polycythemia**
- **Lecture 4 : White Cell Disorders**

- Nonneoplastic Disorders of White Cells
- Leukopenia
- Reactive Leukocytosis
- Reactive Lymphadenitis
- **Lecture 5 : Neoplastic Proliferations of White Cells**
- Myeloid Neoplasms
- Histiocytic Neoplasms
- **Lecture 6**
- Bleeding Disorders
- Disseminated Intravascular Coagulation (DIC)
- Thrombocytopenia
- Immune Thrombocytopenic Purpura
- Heparin-Induced Thrombocytopenia
- Thrombotic Microangiopathies: Thrombotic Thrombocytopenic Purpura and Hemolytic Uremic Syndrome
- **Lecture 7**
- Coagulation Disorders
- Deficiencies of Factor VIII–von Willebrand Factor Complex
- **Lecture 8: Complications of Transfusion**
- Allergic Reactions
- Hemolytic Reactions
- Transfusion-Related Acute Lung Injury
- Infectious Complications
- **Lecture 9 : Disorders of the Spleen and Thymus**
- Splenomegaly
- Disorders of the Thymus
- Thymic Hyperplasia
- Thymoma
- **Lecture 10: Diseases of lymph node**
- Non-neoplastic lesions
- Lymphomas

Module: Respiratory system

- **Lecture 1 : Lesions of the Upper Respiratory Tract**
- Acute Infections
- Nasopharyngeal Carcinoma
- Laryngeal Tumors
- **Lecture 2**
- Atelectasis (Collapse)
- Acute Respiratory Distress Syndrome
- Obstructive Versus Restrictive Pulmonary Diseases
- **Lecture 3: Obstructive Lung (Airway) Diseases**
- Emphysema
- Chronic Bronchitis
- Asthma
- Bronchiectasis
- **Lecture 4: Chronic Interstitial (Restrictive, Infiltrative) Lung Diseases**
- Fibrosing Diseases

- Granulomatous Diseases
- Pulmonary Eosinophilia
- Smoking-Related Interstitial Diseases
- **Lecture 5: Pulmonary Diseases of Vascular Origin**
- Pulmonary Embolism, Hemorrhage, and Infarction
- Pulmonary Hypertension
- Diffuse Alveolar Hemorrhage Syndromes
- **Lecture 6**
- Pulmonary Infections
- Community-Acquired Bacterial Pneumonias
- Community-Acquired Viral Pneumonias
- Hospital-Acquired Pneumonias
- Aspiration Pneumonia
- Lung Abscess
- Chronic Pneumonias
- **Lecture 7**
- Tuberculosis
- Histoplasmosis, Coccidioidomycosis, and Blastomycosis
- Pneumonia in the Immunocompromised Host
- Opportunistic Fungal Infections
- Pulmonary Disease in Human Immunodeficiency Virus Infection
- **Lecture 8**
- Lung Tumors
- Carcinomas
- Carcinoid Tumors
- **Lecture 9: Pleural Lesions**
- Pleural Effusion and Pleuritis
- Pneumothorax, Hemothorax, and Chylothorax
- Malignant Mesothelioma

Module: Gastrointestinal tract

- **Lecture 1 Oral Cavity**
- Diseases of Teeth and Supporting Structures
- Oral Inflammatory Lesions
- Aphthous Ulcers (Canker Sores)
- Herpes Simplex Virus Infections
- Oral Candidiasis (Thrush)
- Proliferative and Neoplastic Lesions of the Oral Cavity
- Fibrous Proliferative Lesions
- Leukoplakia and Erythroplakia
- Squamous Cell Carcinoma
- **Lecture 2: Diseases of Salivary Glands**
- Xerostomia
- Sialadenitis
- Neoplasms
- Odontogenic Cysts and Tumors

- **Lecture 3: Esophagus**
 - Obstructive and Vascular Diseases
 - Mechanical Obstruction
 - Functional Obstruction
 - Ectopia
 - Esophageal Varices
 - **Lecture 4: Esophagitis**
 - Esophageal Lacerations, Mucosal Injury, and Infections
 - Reflux Esophagitis
 - Eosinophilic Esophagitis
 - Barrett Esophagus
 - Esophageal Tumors
 - Adenocarcinoma
 - Squamous Cell Carcinoma
- ✓ **Lecture 5 Stomach**
 - Gastropathy and Acute Gastritis
 - Stress-Related Mucosal Disease
 - Chronic Gastritis
 - Helicobacter pylori Gastritis
 - Autoimmune Gastritis
 - Complications of Chronic Gastritis
 - Peptic Ulcer Disease
 - Mucosal Atrophy and Intestinal Metaplasia
 - Dysplasia
- **Lecture 6**
 - Gastric Polyps and Tumors
 - Gastric Polyps
 - Gastric Adenocarcinoma
 - Lymphoma
 - Neuroendocrine (Carcinoid) Tumor
 - Gastrointestinal Stromal Tumor
- **Lecture 7 Small and Large Intestines**
 - Intestinal Obstruction
 - Intussusception
 - Hirschsprung Disease
 - Abdominal Hernia
 - Vascular Disorders of Bowel
 - Ischemic Bowel Disease
 - Hemorrhoids
- **Lecture 8**
 - Diarrheal Disease
 - Malabsorptive Diarrhea
 - Infectious Enterocolitis
 - Inflammatory Intestinal Disease
 - Sigmoid Diverticulitis
 - Inflammatory Bowel Disease
- **Lecture 9: Colonic Polyps and Neoplastic Disease**

- Inflammatory Polyps
- Hamartomatous Polyps
- Hyperplastic Polyps
- Adenomas
- Familial Syndromes
- Adenocarcinoma
- **Lecture 10:** Appendix
 - Acute Appendicitis
 - Tumors of the Appendix
 - Peritoneum

Module: Liver, biliary tract & pancreas

- **Lecture 1** The liver
 - General Features of Liver Disease
 - Mechanisms of Injury and Repair
 - Liver Failure
 - Infectious Disorders
 - Viral Hepatitis
 - Bacterial, Parasitic, and Helminthic Infections
- **Lecture 2**
 - Autoimmune Hepatitis
 - Drug- and Toxin-Induced Liver Injury
 - Alcoholic and Nonalcoholic Fatty Liver Disease
 - Alcoholic Liver Disease
 - Nonalcoholic Fatty Liver Disease
- **Lecture 3:** inherited Metabolic Liver Diseases
 - Hemochromatosis
 - Wilson Disease
 - α 1-Anti-Trypsin Deficiency
 - Circulatory Disorders
 - Impaired Blood Flow Into the Liver
 - Impaired Blood Flow Through the Liver
 - Hepatic Venous Outflow Obstruction
 - Passive Congestion and Centrilobular Necrosis
- **Lecture 4:** Cholestatic Syndromes
 - Bilirubin and Bile Formation
 - Pathophysiology of Jaundice
 - Defects in Hepatocellular Bilirubin Metabolism
 - Cholestasis
 - Neonatal Cholestasis
 - Biliary Atresia
 - Autoimmune Cholangiopathies
- **Lecture 5**
 - Liver Nodules and Tumors
 - Focal Nodular Hyperplasia
 - Benign Neoplasms
 - Malignant Neoplasms

➤ **Lecture 6:** Gallbladder

- Gallstone Disease
 - Cholecystitis
 - Acute Calculous Cholecystitis
 - Acute Acalculous Cholecystitis
 - Chronic Cholecystitis
 - Carcinoma of the Gallbladder
- **Lecture 7** Pancreas

- Congenital Anomalies
 - Agenesis
 - Pancreas Divisum
 - Annular Pancreas
 - Ectopic Pancreas
 - Congenital Cysts
- Pancreatitis
 - Acute Pancreatitis
 - Chronic Pancreatitis
- Pancreatic Neoplasms
 - Cystic Neoplasms
 - Pancreatic Carcinoma

Module: Urinary system

➤ **Lecture 1**

- Clinical Manifestations of Renal Diseases
- Glomerular Diseases
- Mechanisms of Glomerular Injury and Disease

➤ **Lecture 2:** Affecting Tubules and Interstitium

- Tubulointerstitial Nephritis
- Acute Tubular Injury/Necrosis

➤ **Lecture 3:** Diseases Involving Blood Vessels

- Nephrosclerosis
- Malignant Hypertension
- Thrombotic Microangiopathies

➤ **Lecture 4**

- Congenital and Developmental Anomalies
- Chronic Kidney Disease

➤ **Lecture 5:** Cystic Diseases of the Kidney

- Simple Cysts
- Autosomal Dominant (Adult) Polycystic Kidney Disease
- Autosomal Recessive (Childhood) Polycystic Kidney Disease
- Medullary Diseases With Cysts

➤ **Lecture 6:** Urinary Outflow Obstruction

- Renal Stones (Urolithiasis)
- Hydronephrosis
- Neoplasms

- Neoplasms of the Kidney
- **Lecture 7,8** : Lower urinary tract
- Urinary bladder
- Congenital anomalies
- Inflammation
- Metaplastic lesion
- Neoplastic lesion

Module: Male genital tract

- **Lecture 1**
 - Penis
 - Inflammation
 - Tumors
- **Lecture 2:** Testis & epididymis
 - Congenital anomalies
 - Inflammation
 - Vascular disturbances
 - Spermatic cord & paratesticular tumor
 - Testicular tumors
- **Lecture 3:** Prostate
 - Inflammation
 - Nodular prostatic hyperplasia
 - Tumors

Module: Female genital tract

- **Lecture 1**
 - Vulva
 - Non-neoplastic lesion
 - Neoplastic
 - Vagina
 - Congenital anomalies
 - Premalignant & malignant neoplasm
 - Cervix
 - Inflammation
 - Squamous cell carcinoma (intraepithelial & invasive)
- **Lecture 2:** Uterus & endometrium
 - Menstrual cycle dysfunctional uterine bleeding
 - Inflammation
 - Endometritis & adenomyosis
 - Endometrial polyp
 - Endometrial hyperplasia
 - Malignant tumor of endometrium
- **Lecture 3**
 - Fallopian tube
 - Inflammation
 - Cyst & tumor
 - Ovaries
 - non- neoplastic lesion & cyst

- Ovarian tumor
- **Lecture 4**
- Gestational & placental disorders
- Abortion
- Ectopic pregnancy
- Abnormalities of placenta
- Gestational trophoblastic diseases
- Hydatiform mole
- Choriocarcinoma

Module: The breast

- **Lecture 1**
- Clinical Presentations of Breast Disease
- Inflammatory Processes
- Stromal Neoplasms
- Benign Epithelial Lesions
- **Lecture 2**
- Carcinoma of the breast
- Epidemiology and Risk Factors
- **Lecture 3: Male breast**
- Gynecomastia
- Carcinoma

Module: Endocrine system (4 Lectures)

- **Lecture 1: Pituitary gland**
- Adenoma & hyperplasia
- Hypopituitarism
- Adrenal gland
- Cortex & medulla
- **Lecture 2: Thyroid gland**
- Hyperthyroidism
- Hypothyroidism
- Diffuse & multinodular goiter
- Neoplasm of thyroid
- **Lecture 3**
- Parathyroid glands
- Hyperparathyroidism
- Hypoparathyroidism
- **Lecture 4: Endocrine of pancreas**
- Diabetes mellitus
- Pancreas endocrine neoplasm
- MEN-Multiple endocrine neoplasm syndrome

Module: Skin:

- **Lecture 1**
- Acute Inflammatory Dermatoses

- Urticaria
- Acute Eczematous Dermatitis
- Erythema Multiforme
- Chronic Inflammatory Dermatoses
- Psoriasis
- Lichen Planus
- Lichen Simplex Chronicus
- **Lecture 2 : Infectious Dermatoses**
 - Bacterial Infections
 - Fungal Infections
 - Verrucae (Warts)
 - Blistering (Bullous) Disorders
 - Pemphigus (Vulgaris and Foliaceus)
 - Bullous Pemphigoid
 - Dermatitis Herpetiformis
- **Lecture 3: Tumors of the Skin**
 - Benign and Premalignant Epithelial Lesions
 - Malignant Epidermal Tumors
 - Tumor of dermis
 - Melanocytic Proliferations

Module: Bones & joints

- **Lecture 1 :Basic Structure and Function of Bone**
 - Matrix
 - Cells
 - Development
 - Homeostasis and Remodeling
 - Congenital Disorders of Bone and Cartilage
 - Achondroplasia
 - Thanatophoric Dysplasia
 - Type I Collagen Diseases (Osteogenesis Imperfecta)
 - Osteopetrosis
 - Metabolic Disorders of Bone
 - Osteopenia and Osteoporosis
 - Rickets and Osteomalacia
 - Hyperparathyroidism
 - Paget Disease of Bone (Osteitis Deformans)
- **Lecture 2**
 - Fractures
 - Healing of Fractures
 - Osteonecrosis (Avascular Necrosis)
 - Osteomyelitis
 - Pyogenic Osteomyelitis
 - Mycobacterial Osteomyelitis
 - Bone Tumors and Tumorlike Lesions
 - Bone-Forming Tumors
 - Cartilage-Forming Tumors
 - Tumors of Unknown Origin
 - Lesions Simulating Primary Neoplasms
 - Metastatic Tumors
- **Lecture 3**

- Arthritis
- Osteoarthritis
- Rheumatoid Arthritis
- Juvenile Idiopathic Arthritis
- Seronegative Spondyloarthropathies
- Infectious Arthritis
- Lyme Arthritis
- Crystal-Induced Arthritis
- Joint Tumors and Tumorlike Conditions
- Ganglion and Synovial Cysts
- Tenosynovial Giant Cell Tumor

- **Lecture 4** Soft tissue tumors & tumor like lesions
 - Tumors of Adipose Tissue
 - Lipoma
 - Liposarcoma
 - Fibrous Tumors
 - Nodular Fasciitis
 - Fibromatoses
 - Skeletal Muscle Tumors
 - Rhabdomyosarcoma
 - Smooth Muscle Tumors
 - Leiomyoma
 - Leiomyosarcoma
 - Tumors of Uncertain Origin
 - Synovial Sarcoma
 - Undifferentiated Pleomorphic Sarcoma

Module: Central nervous system (2 Lectures)

- **Lecture 1**
 - Neurons (normal)
 - Glia (normal)
 - Astrocytes (normal)
 - Oligodendrocytes (normal)
 - Ependymal cells (normal)
 - Microglia (normal)
- **Lecture 2**
 - Cerebral edema , raised intracranial pressure
 - Herniation & hydrocephalus
 - Malformation & developmental disease
 - Trauma cerebrovascular diseases
 - Intracranial hemorrhage
 - Infection
 - Degenerative diseases
 - Toxic & acquired metabolic disease
 - Tumors

Practical hours

- Power point slides of gross specimens and microscopic slides in different pathological conditions (60 hours).
- Seminars prepared by third year medical students on selected pathology topics by power point (60 hours).

Practical Power point slides.

Module: General Pathology

- Introduction to pathology
- Cell injury
- Inflammation
- Acute inflammation
- Chronic inflammation
- Healing
- Infections
- Hemodynamic disturbances
- Disorders of immune system
- Neoplasia : Benign Tumors, Malignant tumors

Module; Systemic Pathology

- Cardiovascular system
- Blood vessels
- Heart
- Respiratory system
- Urinary system
- Gastro intestinal tract
- Liver & Biliary tract
- Male genital system
- Female genital system
- Breast
- Endocrine system
- Diseases of bone
- Skin
- Lymphoreticular system
- Haematology
- Disorders of RBCs
- Iron deficiency anaemia
- Macrocytic anaemia
- Sickle cell anaemia
- Thalassaemia
- Disorders of WBC:
- Acute leukaemia
- Chronic myeloid leukaemia
- Chronic lymphocytic leukaemia

Community Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/college	College of Medicine/ University of Mosul	
Department offering the course	Family & Community Medicine	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023 / 3 rd year	
Title of the course	Community Medicine	
Code	MCCo305	
Links	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours = 30	Total = 60
	Theoretical hours = 30	
Date of specification approval	13/11/2022	

General Aims of Course

This course aims to provide students with adequate information and training in health nutrition and medical statistics so that they will be able to properly understand these sciences and their applications when practicing medicine and conducting health and medical researches.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Define nutrition and diet therapy in relation to age.2. Recognize the important food constituents and its recommended daily allowance.3. Describe eating related disorders and diseases.4. Define statistical terms.5. Identify the types of statistical measures.6. Determine the general roles in using each statistical test.7. Differentiate between the types of statistical tests.8. Indicate the burden of diseases.
Intellectual Skills	<ol style="list-style-type: none">1. Calculate energy requirements and nutrient needs.2. Select the plans of diet for each health problem.3. Illustrate diagnostic criteria for eating disorders.4. Differentiate between the types of statistical tests.5. Distinguish between the measures of morbidity and mortality.
Professional Skills	<ol style="list-style-type: none">1. Construct a healthy dietary regimen in relation to age.2. Apply nutritional plans for management of nutritional disorders.3. Practice the use of statistical tests in different conditions.4. Plot the shapes of data presentation.
General and Transferable Skills	<ol style="list-style-type: none">1. Communicate ideas and arguments effectively.2. Work effectively within a team.3. Appraise the skills of statistics in researches.4. Disseminate knowledge to the community to increase the level of awareness toward healthy diet.5. Select the ideal statistical test for each medical research.

Course structure

Topic	No. of lectures	No. of labs	Lecturer
Nutrition	15		-Assist. Prof. Waleed Ghanim -Lecturer Nuha Hachim
Medical Statistics	15	15	-Lecturer Muna Muneer -Assist. Lect. Firas Mahmoud -Assist. Lect. Farah Haitham -Assist. Lect. Layla Hadi

Teaching and learning methods	
Theoretical lectures	<ul style="list-style-type: none"> - Lectures - Small group discussion
Practical labs or clinical sessions	<ul style="list-style-type: none"> - The students are divided into small groups each of 10-15 students, - Group teaching takes place once weekly for two hours.
Seminars and presentations	Each student should participate with members of his group and present seminars.

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Quizzes 2. Homework 3. Problem solving
Summative assessments	<ol style="list-style-type: none"> 1. Essay Questions 2. MCQs 3. Problem solving questions
Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Park textbook of Preventive and Social Medicine. 2. Lecture notes on Medical statistics. 3. Practical book of Medical Statistics.
Recommended text books	<ol style="list-style-type: none"> 1. Oxford handbook of nutrition and dietetics. 2. Oxford handbook of Medical statistics.
Other resources	

Theoretical lectures

Module: Nutrition:

➤ Lecture 1:

- Definition of terms
- Define science of nutrition & food
- Determine functions of food
- Identify relation of nutrition to health & disease
- Outline food constituents
- Determine energetic value of nutrients
- Analyze feeding behavior control
- Determine factors affecting nutritional requirements.

➤ Lecture 2:

- Proteins
- Determine protein constituents & its recommended allowances
- Classify amino-acids & proteins
- Identify essential amino-acids
- Illustrate functions of proteins
- Discuss malnutrition disorders
- Outline measures & factors affecting protein requirement
- Identify the chemical amino-acid score of certain nutrients

➤ Lecture 3:

- Carbohydrates
- Determine carbohydrates constituents
- Classify carbohydrates
- Identify functions of carbohydrates
- Illustrate types of dietary fibers
- Discuss the role of dietary fibers in managing certain health problems

➤ Lecture 4:

- Fats
- Determine fats constituents
- Classify fatty acids
- Illustrate functions of dietary & body fats
- Outline health problems of fats
- Identify functions & properties of essential fatty acids
- Discuss cholesterol & types of lipoproteins
- Enumerate indications & contraindications of weight reduction

➤ Lecture 5:

- Vitamins
- Determine vitamins general characteristics
- Classify vitamins
- Determine essential facts about vitamins A,E,K & B complex .
- Outline clinical presentation of vitamin A deficiency & toxicity .
- Identify directions of action of vitamin D, clinical features of vitamin D deficiency.

- Discuss clinical presentation of vitamins B1,B2, nicotinic acid , folic acid , B12 , & vitamin C deficiency

➤ **Lecture 6:**

- Minerals
 - Determine inorganic elements number & purposes.
 - Classify inorganic elements.
 - Determine essential facts about the macro-elements (Na, K).
 - Determine essential facts about the microelements (iodine, magnesium & iron).
 - Identify clinical features & preventive measures of iodine deficiency.
 - Discuss mechanism of iron balance, types & preventive measures of iron deficiency anemia.

➤ **Lecture 7:**

- Energy requirements
 - Determine the meaning of energy balance.
 - Enumerate causes of under nutrition & conditions need nutritional modification.
 - Outline the main determinants of total energy requirement.
 - Illustrate factors affecting & method of estimation of basal metabolic rate.
 - Discuss factors condition the response to inadequate nutrient intake.
 - Determine undesirable practices that affect nutritional health of hospitalized patients.
 - Mention lines of nutritional status assessment.

➤ **Lecture 8:**

- Diet therapy
 - Outline the aims of diet therapy
 - Determine principles of diet therapy
 - Mention types of modifications in food pattern
 - Discuss planning of diet therapy & dietary assessment
 - Enumerate the determinants of qualitative assessment
 - Identify food regimen characteristics
 - Describe different types of diet consistency modifications
 - Specify dietary considerations in diabetes & GIT diseases
 - To a level accepted to the accreditation standard of the College

➤ **Lecture 9:**

- - Diet therapy and MCH care
 - 1- Determine special problem in diet therapy
 - 2- Outline determining factors for maternal nutritional requirements.
 - 3- Discuss nutritional requirements during pregnancy and lactation.
 - 4- Enumerate reasons for increased protein requirements during pregnancy and lactation.

➤ **Lecture 10:**

- Eating related disorders
 - Identify anorexia nervosa & bulimia as the most common eating disorders.
 - Describe population at risk for such disorders.
 - Identify the prevalence of such disorders among different population groups.

- Mention the main diagnostic criteria of such disorders.
- Outline the main differences between both disorders.
- Enumerate common causes & classes of malnutrition health problems.
- **Lecture 11:**
 - Overweight and obesity
 - Explain difference between overweight & obesity.
 - Define the ideal body weight.
 - Classify body fats
 - Determine epidemiological facts about obesity.
 - Enumerate causes of obesity
 - Illustrate methods of obesity classification
 - Demonstrate methods of obesity assessment
 - Mention medical complications of obesity
 - Discuss possible measures for weight reduction
- **Lecture 12:**
 - Water
 - Determine percentage of body weight represented by water
 - Demonstrate functions of water
 - Discuss water balance
 - Outline daily recommended allowances of water
 - Identify the percentage of water in some common foods
- **Lecture 13:**
 - International classification of diseases
 - To understand what ICD-10 is, and what it used for
 - To become familiar with the new features of ICD-10, including differences in the code structure.
 - To understand benefits of the transition to ICD-10.
- **Lecture 14 & 15**
 - **Assessment of nutritional status in the community and clinical practice**
 - Clinical assessment
 - Anthropometric measurements
 - Biochemical measurements
 - Dietary assessments
 - Functional tests

Module: Medical Statistics

- **Lecture 1: Introduction to Medical Statistics**
 - Defining Statistical Terms.
 - Types of Statistics.
 - Classifying the Variables According to Their Scale of Measurement.
 - Variable & Constant.
 - Symbols.
- **Lecture 2: Summarization and Presentation of Data**
 - Measures of Central Tendency For Row Data
 - End Points.
 - Mean.

- Median.
- Mode.
- Mid-Range.
- Measures of Variability for Row Data
- Actual Range.
- Variance.
- Standard Deviation.
- Standard Error.
- Coefficient of Variation.
- **Lecture 3:** Summarization and Presentation of Data (For Grouped Data)
 - Measures of Central Tendency For Grouped Data
 - General roles for forming a frequency distribution table.
 - Mean.
 - Median.
 - Percentile.
 - Mode.
- **Lecture 4:** Measures of Variability for Grouped Data
 - Variance.
 - Standard Deviation.
 - Standard Error.
 - Coefficient of Variation.
- **Lecture 5:** Shapes of Data Presentation and its Properties.
 - Histogram.
 - Frequency Polygon.
 - Frequency Curve.
 - Bar Chart.
 - Pie Diagram.
 - Cumulative Frequency Polygon.
 - Cumulative Frequency Curve.
 - Scatter Diagram.
- **Lecture 6:** Probability & Normal distribution
 - Define Probability Terms.
 - Elementary Properties of Probability.
 - Define the Normal Distribution.
 - Describe the Normal Distribution and its Properties.
- **Lecture 7:** Normal Range & Standard Normal Distribution
 - Other Shapes of Distribution.
 - Normal Range and its Properties.
 - Standard Normal Distribution and its Conditions.
- **Lecture 8:** Statistical Inference
 - Identify the Meaning of Statistical Inference.
 - Determine Types of Error (α Error & β Error).
 - Statistical Hypothesis.
 - Determine P - Value.
- **Lecture 9:** Z - Test For [Large Sample(s)]
 - Pre-Request in Performing Z-Test.
 - Z- Test Concerning One Mean .

- Z- Test Concerning Two Means .
- Z- Test Concerning One Proportion .
- Z- Test Concerning Two Proportions .
- **Lecture 10:** Confidence Interval and limit For Large Sample(s)
 - Pre-Request in Performing Confidence Interval.
 - Confidence Interval For One Mean .
 - Confidence Interval For Two Means
 - Confidence Interval For One Proportion
 - Confidence Interval For Two Proportions
- **Lecture 11:** Student's T - Test [For Small Sample(s)]
 - Pre-Request in Performing Student's T-Test
 - T- Test Concerning One Mean
 - T- Test Concerning Two Means (Paired Case)
 - T- Test Concerning Two Means (Unpaired Case).
- **Lecture 12:** Confidence Interval and limit For Small Sample(s)
 - Pre-Request in Performing Confidence Interval.
 - Confidence Interval For One Mean
 - Confidence Interval for Two Means (Paired Case).
 - Confidence Interval for Two Means (Unpaired Case) (Equal Variances).
 - Confidence Interval For Two Means (Unpaired Case) (Unequal Variances)
- **Lecture 13:** χ^2 - Test (Chi-Square Test)
 - Types of χ^2 – Test.
 - Pre-Request in performing χ^2 - Test.
 - Use of χ^2 – Test in Different Conditions.
 - χ^2 - Test for Independency.
 - (2 x 2) Contingency Tables and its Calculation.
 - More than (2 x 2) Contingency Tables and its Calculation.
 - Continuity Correction for Quick Formula.
 - Un-Continuity correction for Quick Formula.
- **Lecture 15:** Community Diagnosis
 - Measure the Main Morbidity Rates.
 - Calculation and Interpretation the Differences between Rates, Ratios & Proportions.
 - Estimation and Assessing the Importance of Incidence Rates, Including Attack Rate.
 - Estimation and Assessing the Importance of Prevalence Rates (Point and Period Prevalence).
- **Lecture 15:** Community Diagnosis
 - Measure the Main Mortality Rates
 - Measure the Main Fertility Rates.

Practical course

Course description:

- Lecture (1): Descriptive statistics
- Lecture (2): Summarizing numerical data
- Lecture (3): measures of central tendency
 - Measures of variation in ungrouped data
- Lecture (4): Measures of central tendency
 - Measures of variation in grouped data
- Lecture (5): Normal distribution
- Lecture (6): Normal range
- Lecture (7): Z- test
- Lecture (8): Z- test
- Lecture (9): T – test
- Lecture (10): T- test
- Lecture (11): Chi- square
- Lecture (12): Chi- square
- Lecture (13): Random sample
- Lecture (14): Tools of community diagnosis
- Lecture (15): Tools of community diagnosis

Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Department of Medicine	
Name of Academic Program	MBCbB	
Academic Year/level	2022-2023 / 3 rd year	
Title of the course	Internal Medicine	
Code	MCMd306	
Total Course Hours	Practical hours=60	Total=120
	Theoretical hours=60	
Date of specification approval	12/11/2022	

General Aims of Course

The course aims to provide students of the third stage with basic knowledge of the common presentation of internal diseases and basic clinical skills.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Know the common symptoms of internal diseases. 2. Know the common parasitic diseases in our community. 3. Know the common abnormalities of electrolytes and acid-base balance 4. Basic information in immunological and nutritional diseases
Intellectual Skills	<ol style="list-style-type: none"> 1. Take proper history 2. Perform basic physical examination
Professional Skills	<ol style="list-style-type: none"> 1. Make a good doctor-patient relationship 2. Interview patients
General and Transferable Skills	<ol style="list-style-type: none"> 1. Take proper history 2. Perform basic physical examination. 3. Build a good doctor-patient relationship. 4. Interview patients
Attitude outcomes	Recognize ethical problems and how to deal with them.

Course structure			
Topic	No. Of lectures	No. Of clinical sessions	Lecturer
Manifestation of internal medicine diseases.	20	20	Dr Khlid Al keroo Dr. Jassem Mohamed Dr Arwa Al sarraf Dr.. Fakhir yousif Dr. Omer AbdAlmnam Dr. AbdAllah Zuhair
Electrolyte and acid based imbalances.	7	10	Dr. Wael thanoon
Immunology	6	10	Dr. Ali Abdulrahman
Nutritional medicine	8	10	Dr. Arwa Al Sarraf
Infectious diseases	19	10	Dr. Nassar Galib Dr. Salam Fareed

Teaching and learning methods	
1. Theoretical lectures	Teaching halls
2. Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
3. Seminars and presentations	Presentation in hospitals

Assessment methods	
1. Formative assessments	<ul style="list-style-type: none"> • Clinical • Quiz
2. Summative assessments	<ul style="list-style-type: none"> • Clinical 20 • Theoretical 80
3. Pass mark	<ul style="list-style-type: none"> • 50%

Resources and requirements	
Essential text books	<ul style="list-style-type: none"> • Davidsons Principle and practice of Medicine • Macleod's clinical examination
Other resources	Up to date and Medscape website

الرابط	التدريسي
https://drive.google.com/drive/folders/1-t10t2bOq_L0Cinc8wjqAhMWocOqh04?usp=share_link	ا.د. خالد نافع
https://drive.google.com/drive/folders/1-yXf18s5ICPCGvjorpq9Ea370HIDbrLT?usp=share_link	أ.م.د. جاسم محمد
https://drive.google.com/drive/folders/12RTMXcxph2BsRyw0nZFGHKaBuVhvHC9?usp=share_link	ا.م.د. اروى الصراف
https://drive.google.com/drive/folders/101FT384f0qruKi7Wtj0FUSVLqrlrW9rn?usp=share_link	د. وائل ذنون
https://drive.google.com/drive/folders/102iZCoTjld9GEJj3paom0mTICTW914?usp=share_link	د. نصار
https://drive.google.com/drive/folders/109z4pNT6lwwwhf8FQCKI3Vb0mHiJ9gUq?usp=share_link	أ.م.د. محمد حارث
https://drive.google.com/drive/folders/10CfLU_iR9vfsox-sRMzRgjJva4PG1PRP?usp=share_link	ا.د. فاخر يوسف
https://drive.google.com/drive/folders/10IJTfnMVhaDZNSNWhiSlrwbosBaqET_H?usp=share_link	د. عمر
https://drive.google.com/drive/folders/106dW_x3mqKi9C4TOD4fLK-AZKHGS_Ty8?usp=share_link	د. عبدالله زهير
https://drive.google.com/drive/folders/1-z0NFeBdjruJcPyasHpyENgAGLrgWnb0?usp=share_link	د. سلام
https://drive.google.com/drive/folders/105py1cwwYmVI-gp-krXWZdk3u-pl0VaK?usp=share_link	أ.م.د. رامي عادل

Theoretical lectures

Module: Introduction to Clinical Medicine

- **Lecture 1,2** :History taking
- **Lecture 3,4**: Manifestations of cardiac disease
- **Lecture 5**: pain Chest
- **Lecture 6**: diseases respiratory of Manifestations
- **Lecture 7,8**: Manifestations of gastrointestinal diseases
- **Lecture 9**: Jaundice
- **Lecture 10**: Fever
- **Lecture 11**: Manifestation of renal disease
- **Lecture12**: ascites and Oedema
- **Lecture13,14**: Manifestation of blood disorders
- **Lecture15**: Manifestations of endocrine diseases
- **Lecture16,17**: Manifestations of neurological diseases
- **Lecture 18,19**: Manifestations of musculoskeletal diseases
- **Lecture 20**: evidence based medicine

Module: Electrolytes and Acid-Base Disorders

- **Lecture1,2**: Disorders of water and sodium balance
- **Lecture 3**: Hypokalaemia
- **Lecture 4**: Hyperkalaemi
- **Lecture5**: Disorders of magnesium and phosphate balance
- **Lecture6**: Metabolic and respiratory acidosis
- **Lecture 7**: Metabolic and respiratory alkalosis

Module: Immunology

- **Lecture 1**: Functional anatomy and physiology of the immune system
- **Lecture 2**: Autoimmunity
- **Lecture 3**: Immune deficiency
- **Lecture 4**: Allergy
- **Lecture 5,6**: immunology Transplantation

Module: nutritional diseases

- **Lecture 1**: nutritional factors and disease
- **Lecture 2,3**: Obesity
- **Lecture 4**: Undernutrition
- **Lecture 5**: hospital nutrition
- **Lecture 6,7**: vitamin deficiency disease
- **Lecture 8**: mineral deficiency disease

Module: infectious diseases

- **Lecture 1,2**: Principles of infectious diseases

- **Lecture 3:** diagnosis of infectious diseases
- **Lecture 4,5:** Malaria
- **Lecture 6:** giardiasis and Amoebiasis
- **Lecture 7:** Toxoplasmosis
- **Lecture 8:** Visceral leishmaniasis
- **Lecture 9:** helminthic infection (nematodes)
- **Lecture 10:** helminthic infection (trematodes)
- **Lecture 11:** helminthic infection(cestodes)
- **Lecture 12:** infectious mononucleosis
- **Lecture 13:** viral hemorrhagic fever
- **Lecture 14:** Rabies
- **Lecture 15:** shigellosis and Cholera
- **Lecture 16:** Diphtheria
- **Lecture 17:** anthrax and Plague
- **Lecture 18:** Rickettsial infections
- **Lecture 19:** spirochaetal infections

Practical hours

- Introduction and general advices
- History taking
 - Patient profile, chief complaint, history of present illness,
 - past history, drug history, family history, social history
 - Review of systems, cardiovascular, respiratory, GIT, GUT
- General examination
 - General look
 - Anemia, jaundice cyanosis, polycythemia, tremor, nail abnormalities, edema
 - Vital signs
- Abdominal examination
 - Inspection of abdomen
 - Palpation of abdomen
 - Examination of ascites
 - Auscultation of abdomen
- Cardiovascular examination
 - Inspection of precordium
 - Palpation of precordium
 - Cardiac auscultation
- Respiratory examination
 - Inspection of chest
 - Palpation of chest
 - Percussion of chest
 - Auscultation of chest

Surgery

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	University of Mosul / Mosul College of Medicine	
Department offering the course	Surgery	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023 /3 rd year	
Title of the course	Surgery	
Code	MCSu307	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= nil	Total= 30 hours
	Theoretical hours= 30 hours	
Date of specification approval	1 / 10 / 2021	

General Aims of Course

The course describes the basic knowledge of Surgery and it's departments to the medical students in order to build the clinical knowledge and clinical skills in the next years in diagnosis and treatment of the different surgical diseases including the emergent conditions, so optimize the medical services to the society.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Identify the basic knowledge of Surgery. 2. Identify the basic knowledge of departments of Surgery. 3. Identify the basic Skills of the clinical examination.
Intellectual Skills	<ol style="list-style-type: none"> 1. Realize the best method of taking the Medical history. 2. Realize the best method of the clinical examination.
Professional Skills	1.Nil
General and Transferable Skills	1.Recognize the basic knowledge of Surgery and it's departments and how will corporate with clinical skills
Attitude outcomes	<ol style="list-style-type: none"> 1.Recognize any ethical problems in relation to the topics and act accordingly. 2.Recognize the importance of respect of the patient's dignity and privacy.

Lecturer	No. of lectures	
Mohanad Adnan Bakr	4	
Samir Ibrahim Al -Safaar	1	
Muddather Abdulaziz Mohammed	4	
Mohammed Inaam	4	

Dina Abdulghani	4	
Sahar Habeeb	2	
Zaid Shanshal	4	
Zaid Tarq	2	
Mohammed Atallah	1	
Ali Hasan	1	
Omer Saad	1	
Obai Abdulaziz	2	

Teaching and learning methods	
Theoretical lectures	
1. Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
2. Seminars and presentations	The students are divided into small groups to do seminars

Assessment methods	
7. Formative assessments	
8. Summative assessments	Final examination (100 mark)/ MCQ system
9. Pass mark	50%

Resources and requirements	
Essential text books	1.Baily and Love's Textbook / Short Practice of Surgery
Recommended text books	1.Brows Textbook of Clinical examination
Other resources	Nil

Theoretical lectures

- **Lecture 1: Nutrition, fluid and electrolytes.**
 - body fluid compartments
 - Physiology: osmolality, osmolarity & osmolality
 - Water homeostasis: depletion & intoxication
 - Electrolytes imbalance:
 - Hypo & hypernatremia
 - Hypo & hyperkalemia
 - Calcium imbalance
 - Acid –base disturbances
 - Nutritional requirements-artificial nutritional support
- **Lecture 2.3: surgical infections**
 - acute non-specific(general principles ,pathogenesis bacteriology, diagnosis
 - ,complications & principles of treatment)
 - examples of acute surgical infections:
 - post-op. wound infection(classification, features& treatment)
 - cellulites
 - erysipelas
 - boils
 - carbuncles
 - hydradenitis suppurativa
 - acute abscesses
 - acute lymphangitis & adenitis
 - bacteremia & septicemia
 - acute specific surgical infections:
 - tetanus
 - gas gangrene
 - necrotizing fasciitis
 - chronic specific infections:
 - TB, syphilis actinomycosis
- **lecture 4: Sterilization, disinfection and hospital infection**
 - Hospital acquired infections
 - Viral infections of surgical importance(h.i.v & hepatitis))
 - Antibiotics in surgery(choice &prophylaxis)
 - Universal sterile precautions
 - Antiseptics, sterilizations, disinfection & theatre staff ,introduction to surgery
- **Lecture 5: surgical ethics and patient safety**
 - Surgical history & clinical examinations
 - Legal consent for surgical interventions(case sheet, op.notes & discharge notes)
 - Imaging in surgery
 - Diagnostic techniques
- **Lecture 6: Metabolic response to trauma**
 - Catabolic phase response to trauma & sepsis
 - Accelerated hypermetabolism
 - Neuro-endocrine response

- Stress hormones
- Negative nitrogen balance
- Disordered fat metabolism
- Disordered Cho metabolism
- Disordered vitamin metabolism
- Minerals & electrolytes imbalance
- Complications& consequences
- **Lecture 7: Venous disorders**
 - Surgical anatomy & physiology of lower limbs veins
 - Investigations of venous disease
 - Varicose veins of lower limbs
 - Venous leg ulcers
 - DVT & pulmonary embolism
- **Lecture 8: Diseases of Lymphatic system**
 - Anatomy& physiology
 - Inflammatory disorders:
 - Acute lymphangitis
 - Acute lymphadenitis
 - Lymphedema (primary & secondary) management
 - lymphangiomas
- **lecture 9: Peripheral arterial diseases**
 - Introduction, anatomy
 - Acute limb ischemia(occlusion or stenosis)
 - Embolism(causes, sites &pathology)
 - Thrombosis, (causes, sites &pathology)
 - Clinical consequences of acute limb ischemia
 - Investigations & treatment(general, surgical embolectomy& thrombolytic therapy)
 - Chronic limb ischemia(atherosclerosis features, pathology, investigations as ECG, Doppler & duplex, arteriography)
 - Burger's disease
 - Vasospastic disorders
 - Ulceration & gangrene
 - Ulcers
 - Gangrene: Types, varieties, features
 - Amputations (indications, complications)
- **Lecture 10: Tissue repair and scars**
 - Types of wounds(closed &open)
 - Factors affecting
 - Management(closure ,excision)
 - Chronic wounds & scars
 - Sutures types
- **Lecture 11: Principles of wound management**
- **Lecture 12: Surgical skills**
 - Suturing
 - Hemostasis in surgery Types examples
- **Lecture 13: Introduction to trauma**
 - Components
 - Stages
 - classification

- Epidemiology
- Mechanism of injuries
- Causes of trauma mortality
- Organized trauma care
- Primary survey & resuscitation
- Secondary survey
- Tertiary survey
- **Lecture 14: Disaster surgery**
 - Common features of major disasters
 - Factors influencing rescue and relief efforts
 - Sequence of the relief effort in major disasters
 - Essentials of casualty evacuation
 - Principles of damage control surgery
 - Common surgical problems in disasters
 - Disaster planning.
- **Lecture 15,16,17: Shock**
 - introduction ,definition &classification
 - Hypovolemic shock
 - Pathophysiology, clinical features& treatment
 - Cardiogenic: etiology,
 - Pathophysiology, clinical features & treatment
 - Anaphylactic: etiology,
 - pathophysiology, clinical features & treatment
 - Septic: etiology, pathophysiology ,clinical features & treatment
 - Multiple organ dysfunction & SIRS
- **Lecture18,19: Hemorrhage**
 - Classification of hemorrhage
 - Pathophysiological response to hemorrhage
 - Clinical features
- **Lecture20,21: Blood transfusion**
 - Bl. Groups & cross matching
 - The universal donor
 - Collection & storage of blood
 - Types & indications
 - Blood products
 - Massive blood transfusion
 - Precautions
 - Complications of & management
 - Alternatives to homologous bt
- **Lecture22,23: Surgical oncology**
 - Introductions & definition
 - Benign tumors (characters, examples as lipoma, neurofibroma
 - Malignant tumors
 - Etiology of cancer(transformation benign to malignant)
 - Staging & grading
 - Spread of
 - Diagnosis & screening programs
 - Tumor markers
 - Treatment/ Prognosis
- **Lecture24,25: Burn**
 - Burns(causes, types,

- Management& complications
- **Lecture26: Skin and subcutaneous tissues**
 - Skin tumors
 - BCC- etiology& types& treatment
 - SCC
 - Melanomas
- **Lecture27,28: Care in operating room**
- **Lecture29,30: Pre and postoperative care**
 - Preoperative care:
 - The preoperative evaluations.
 - Preoperative history.
 - Preoperative physical examination.
 - Preoperative laboratory evaluation.
 - Physical status classification: ASA.
 - Preoperative instructions.
 - Consent for operation and anesthesia.
 - The anesthetic plan.
 - Premedication (preoperative drug and treatment.
 - Indications for premedication.
 - Postoperative care:
 - The aim.
 - Standards of post anesthesia care.
 - Immediate postoperative care.
 - Discharge from PACU.
 - Classification of postoperative operative complications.
 - Immediate postoperative complications.
 - System specific postoperative complication.
 - General postoperative complications.

منهاج المرحلة الرابعة

**FOURTH YEAR
CURRICULUM**

توزيع الوحدات والساعات للمرحلة الرابعة

ت	المواد الدراسية	عدد الساعات النظرية	عدد الساعات العملية والسريرية	عدد الوحدات النظرية	عدد الوحدات العملية والسريرية	مجموع عدد الوحدات
١	الطب العدلي	٦٠	٦٠	٤	٢	٦
٢	العلوم السلوكية	١٥		١		١
٣	طب المجتمع	١٠٥	١٢٠	٧	٤	١١
٤	التوليد	٦٠	٩٠	٤	٣	٧
٥	الطب الباطني	١٣٥	٩٠	٩	٣	١٢
٦	الجراحة	٩٠	٦٠	٦	٢	٨
٧	طب الاطفال	١٥		١		١
	المجموع	٤٨٠	٤٢٠	٣٢	١٤	٤٦

FOURTH YEAR UNITS AND HOURS DISTRIBUTION

	Scholastic subjects	Theoretical hours	Practical hours	Theoretical units	Practical units	Total units
1	Forensic medicine	60	60	4	2	6
2	Behavioral sciences	15		1		1
3	Community medicine	105	120	7	4	11
4	Obstetrics	60	90	4	3	7
5	Medicine	135	90	9	3	12
6	Surgery	90	60	6	2	8
7	Pediatrics	15		1		1
	Total	480	420	32	14	46

Forensic medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/college	CMUM	
Department offering the course	Department of Pathology	
Name of Academic Program	M.B.Ch.B.	
Academic Year/level	2022-2023/4 th year	
Title of the course	Forensic medicine	
Code	MCPa401	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours = 60 (forensic medicine only)	Total=120
	Theoretical hours = 60 (45 forensic medicine and 15 toxicology)	
Date of specification approval	11/11/2022	

General Aims of Course

Developing the student's knowledge, skills, and behavior with regard to identifying the forms of clinical signs of various types of wounds and how to write a forensic medical report for them, as well as diagnosing death cases and its association with violence or crime. In addition to knowing the forensic medical importance of most natural and unnatural accidents such as electrocution, suffocation, and sexual abuse. Besides the aforementioned points, there is an additional toxicological dimension where the effects of various chemicals and toxic materials is explained and illustrated from both clinical and medicolegal aspects.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Identify the sections of forensic medicine and the forensic medical systems prevalent in the world, as well as the forensic medical system in Iraq.2. Determining the methods of identification by hair, fibers, bones, shreds, and the whole body.3 . Diagnosing death, identifying the presumptive and confirming signs of death, and the necessary tests to confirm it, with post mortem changes.٤. Identify the types of wounds and their specifications, as well as firearm wounds and their features.5. Identify the damage to the head and other areas of the body.6. Organizing the forensic medical report.7. Learn to estimate ages.8. Classify thermal and electrical injuries and identify discuss medico-legal aspects of these injuries.9. Knowing the causes of sudden death.10. Identify the different types of sexual offences & indicate medicolegal importance of virginity.11. Classify different types of asphyxia and identify the medicolegal aspects of different types of violent asphyxia.12. Define different types of child abuse and discuss the medicolegal aspects of physical child abuse.١٣. Knowing the different methods of dissection.14. Indicate the medicolegal importance of disputed paternity and blood grouping.15. Learn about road, train and plane accidents.16. Acknowledge the basic concepts of toxicology17. Learn the effect and addictive potential of opiates and marijuana18. Identify other stimulant drugs and their effects19. Classify chemicals according to their toxic potential20. Organize different treatment methods of poisoning21. Knowing the dangers of addictive drugs and toxic chemicals on the society
Intellectual Skills	<p>By the end of the course the student will be able to:</p> <ul style="list-style-type: none">• Determine causes of death of different injuries and toxins.• Determine postmortem interval in different criminal incidents.• Analyze case scenario of forensic medicine cases.

	<ul style="list-style-type: none"> • Appraise cases of malpractice and ethical aspects of the medical practice. • Integrate results of history, physical and laboratory investigations into a meaningful diagnostic formulation. • Construct an appropriate management plan of acute or chronic intoxicated patient. • Assess mental status for intoxicated patients. • Construct an overall understanding of poisoning • Integrate toxicological disciplines with medicolegal issues • Analyze the possible outcomes of poisoning
Professional Skills	<p>C1 Examine collection of bones to identify its sex, age and race.</p> <p>C2 Estimate age by X ray examination.</p> <p>C3 Identify characters of different types of wounds.</p> <p>C4 Demonstrate characters different types of head injuries.</p> <p>C5 Recognize different parts of firearm weapons.</p> <p>C6 Demonstrate different types of firearm injuries.</p> <p>C7 Predict the causative instruments, survival period and causes of death of different types of injuries.</p> <p>C8 Demonstrate different toxic capsules, seeds and roots and explain their medicolegal aspects.</p> <p>C9 Predict the intrauterine fetal ages.</p> <p>C10 Assess uteri of illegal abortion and interpret the cause of death and survival periods after abortion.</p> <p>C11 Construct a proper primary wound report.</p> <p>C12 Elicit findings of medico-legal importance through demonstration of forensic case photograph.</p> <p>C13 Demonstrate a thin layer chromatography plate and calculate rate of flow for the unknown substance.</p>
General and Transferable Skills	<p>1- Communicate ideas and arguments effectively.</p> <p>2- Work effectively within a team.</p>
Attitude outcomes	<p>Honor and respect seniors and other colleagues involved in his teaching and subsequently in his future practice.</p>

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Introduction to forensic medicine	1	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Identification	2	2	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Death	3	2	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Injuries	5	4	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Head and body damages	3	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Forensic medical reports	1	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Estimation of age	2	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Thermal injuries	3	2	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Electrical injuries	1	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Sudden death	2	2	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Sexual offences	2	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri

Suffocation	5	4	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Forensic pediatrics and child abuse	3		Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Dissection methods	1	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Addiction	1	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Blood and body fluid changes	3	3	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
The context of forensic work in Iraq	1		Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Paternity testing	1	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Road, train and plane accidents	3	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Surgical mortality and general anesthesia	1		Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Reaching the perpetrator through evidence of modern forensic evidence	1	1	Dr. Karam Turath Tawfeeq/ M.rs. Likaa Khalil, M.rs. Wafaa Sabri
Introduction to Toxicology	1		Omar M. Shindala

Management of a Poisoned Patient	1		Omar M. Shindala
Toxicology of Opiates	1		Omar M. Shindala
Toxicology of Marijuana	1		Omar M. Shindala
Other drugs of abuse Cocaine, Amphetamine, LSD, Khat, and Benzodiazepines	1		Omar M. Shindala
Toxicology of heavy metals: Arsenic, Lead, and Mercury	1		Omar M. Shindala
Toxicology of Cyanide	1		Omar M. Shindala
Toxicology of Carbon Monoxide	1		Omar M. Shindala
Toxicology of Aspirin	1		Dr. Ibrahim Faisal
Toxicology of Paracetamol/ Acetaminophen	1		Dr. Shamil Othman
Organophosphate Poisoning	1		Dr. Shamil Othman
Toxicology of Tricyclic- Antidepressants (TCA)	1		Dr. Shamil Othman
Toxicology of Alcohols, Ethanol/ Methanol/Carbon Tetrachloride	1		Dr. Shatha Hani
Toxicology of Kerosene and other Hydrocarbons	1		Dr. Shatha Hani
Toxicology of Caustic agents/ Bleach and other irritant chemicals	1		Dr. Nada Alrawi

Teaching and learning methods	
Theoretical lectures	** Lectures take place 2 times per week for each group & a total period 4 hours weekly for 2 groups. The lecture halls is Al-Pharabi & Al-Ghazali hall.
Practical labs or clinical sessions	Group teaching take place once weekly of a period 2 hours for each 100 student group teaching. The group teaching is take place in the same theoretical halls (2 hours for Power point slides) of pictures slides in different forensic conditions.

Assessment methods	
Formative assessments	Ask questions at the end of each lecture in the form of pictures and allow students to think and answer them.
Summative assessments	<ul style="list-style-type: none"> • Mid year Theory Exam 30% • Mid year Practical Exam 10% • Final Theory Exam 50% • Final Practical Exam 10 %
Pass mark	50%

Resources and requirements	
Essential text books	الوجيز في الطب العدلي: وصفي محمد علي
Recommended text books	
Other resources	<ol style="list-style-type: none"> 1. Joseph Prahlow: Atlas of forensic pathology & Forensic Pathology 2. KNIGHT'S FORENSIC PATHOLOGY : Bernard knight 3. COLOR ATLAS OF FORENSIC MEDICINE AND PATHOLOGY 4. Casarett & Doull's Toxicology: The Basic Science of Poisons..

Theoretical lectures in forensic medicine

الموضوع: مقدمة عن الطب العدلي introduction in forensic medicine

- محاضرة ١ :
- تعريف الطب العدلي
- اقسام الطب العدلي
- الأنظمة الطبية العدلية
- الحالات الطبية العدلية التي يستقبلها الطبيب العدلي المختص والطبيب العام.

الموضوع: الاستعراف identification

- محاضرة ١ : الاستعراف عن المجهول بواسطة الشعر والالياف
- محاضرة ٢ :
- استعراف الجسم الكامل
- استعراف العظام
- استعراف الأثلاء

الموضوع: الموت Death

- محاضرة ١ :
- تعريف الموت
- انواع الموت
- علامات الموت الظنية
- التعرف الى الموت الظاهري
- الفحوصات والاختبارات التأكيدية على حصول الموت.
- محاضرة ٢ :
- علامات الموت التأكيدية: تلوونات الموت الأندارية .
- علامات الموت التأكيدية: تعادل درجة حرارة باطن الجثة مع حرارة المحيط.
- محاضرة ٣ :
- علامات الموت التأكيدية: الصملى الموتى.
- علامات الموت التأكيدية: التفسخ.

الموضوع: الجروح Wounds

- محاضرة ١ :
- تعريف الجرح.
- تصنيف الجروح.
- دراسة الجروح الحادة والوخزية وجروح الآلات ذات الصفات الخاصة.
- محاضرة ٢ :
- الرضوض (دراسة صفات الجروح الرضية والكدمات و السحجات واهميتها الطبية العدلية)
- محاضرة ٣ :
- التعرف الى الجروح الناتجة عن الاسلحة النارية.
- مواصفات الاسلحة النارية.
- مواصفات مدخل ومخرج المقذوفات النارية.
- محاضرة ٤ :
- تقدير مسافة الأطلاق الناري
- تحديد مسار الأطلاق الناري
- تحديد عيارية السلاح الناري
- أضرار المتفجرات

- **محاضرة ٥**
- أسباب الموت في الجروح
- الأهمية الطبية العدلية من فحص الجروح المختلفة

- **محاضرة ٦**
- أضرار فروة الرأس
- أضرار الجمجمة

- **محاضرة ٧**
- اضرار السحايا
- اضرار الدماغ

- **محاضرة ٨**
- اضرار الوجه
- اضرار الرقبة
- اضرار الصدر
- اضرار البطن
- اضرار الاطراف

الموضوع: التقارير الطبية العدلية Medico legal reports

- **محاضرة ١**
- التقرير الأولي .
- التقرير الدوري .
- التقرير النهائي .
- التقرير التشريحي .

الموضوع: تقدير الاعمار Estimated age

- **محاضرة ١**
- الحالات التي تستوجب تقدير العمر
- سن البلوغ القانوني
- القواعد العامة في تقدير العمر

- **محاضرة ٢**
- طرق تقدير العمر المختلفة

الموضوع: اساليب التشريح Methods of autopsy

- **محاضرة ١**
- الفحص الظاهري الخارجي
- الفحص التشريحي الداخلي
- انواع الطرق المستخدمة عند اجراء التشريح

الموضوع: (الغرق) Drowning

- **محاضرة ١**
- انواع الغرق
- علامات الغرق
- الغرق الجاف

الموضوع: تغيرات الدم والسوائل الاخرى بعد الوفاة Postmortem changes

- **محاضرة ١**
- التغيرات في الدم
- التغيرات في السائل المخي الشوكي
- التغيرات في السائل الزجاجي للعين

الموضوع: (البقع الدموية) Blood spots

➤ **محاضرة ٢**

- كيفية فحص بقع الدم بالطرق المختلفة

الموضوع: اضرار الحرارة والبرد Physical changes

➤ **محاضرة ١**

- اضرار درجات الحرارة العالية
- الاضرار السريرية للحرارة

➤ **محاضرة ٢ Burns**

- تصنيف الحروق
- اسباب الموت في الحروق المختلفة
- العوامل المؤثرة على خطورة الحروق في الجسم

➤ **محاضرة ٣**

- عضه الصقيع frost bite
- قدم الخندق
- اضرار عامة للبرد

الموضوع: اضرار الصعق الكهربائي والجوي Electrical shock

➤ **محاضرة ١**

- اضرار الكهرباء
- اضرار الصعق الكهربائي في جسم الانسان
- اسباب الوفاة في الصعق الكهربائي
- الصعق الجوي

الموضوع: الاختناق والخنق والشنق Asphyxia

➤ **محاضرة ١**

- انواع الاختناق
- مراحل الاختناق
- العلامات العامة للاختناق

➤ **محاضرة ٢**

- علامات كتم النفس
- علامات الغصص
- علامات واسباب الوفاة في الخنق اليدوي
- علامات واسباب الوفاة في الخنق الرباطي

➤ **محاضرة ٣**

- الشنق وانواعه
- علامات الشنق
- اسباب الموت في الشنق

الموضوع: (الموت المفاجئ) Sudden death

➤ **محاضرة ١**

- الاسباب الناتجة عن امراض جهاز الدوران
- الاسباب الناتجة عن امراض الجهاز التنفسي
- الاسباب الناتجة عن امراض الجهاز العصبي المركزي

➤ **محاضرة ٢**

- الاسباب الناتجة عن امراض الجهاز الهضمي
- الاسباب الناتجة عن امراض الجهاز البولي
- الاهمية الطبية العدلية في حالات موت الفجأة.

الموضوع: طب الاطفال العدلي والاساءة للأطفال Abuse in children

➤ **محاضرة ١**

- متلازمة الطفل المعذب
- قتل الطفل الوليد

➤ **محاضرة ٢**

- اضرار الولادة
- متلازمة الكرب التنفسي عند الطفل الوليد

➤ **محاضرة ٣**

- موت الرضع الفجائية

الموضوع: سياق عمل الطب العدلي في العراق Forensic medicine in Iraq

➤ **محاضرة ١**

- النظام الطبي العدلي في العراق
- انواع الوفيات المرسلة للطب العدلي
- نظرة على قوانين الطب العدلي في العراق
- صلاحيات التشريح من عدمه
- الاوراق الرسمية العدلية

الموضوع: التعديات الجنسية Sexual offence

➤ **محاضرة ١**

- اقتضاض البكارة
- الحمل

➤ **محاضرة ٢**

- الامراض الانتقالية التناسلية
- الشذوذ الجنسي

الموضوع: فحوصات الطب العدلي المتقدمة Medico legal investigations

➤ **محاضرة ١**

- الاهمية الطبية العدلية لفحوصات البنية
- فحص فصائل الدم
- فحص العوامل البايوكيميائية
- التطابق النسيجي
- بصمة الحامض النووي

➤ **محاضرة ٢**

- الوصول للجاني عن طريق الاثبات بالادلة الجنائية الحديثة

الموضوع: حوادث وسائل النقل Road traffic accidents

➤ **محاضرة ١**

- حوادث الدهس
- حوادث الاصطدام
- حوادث الانقلاب

➤ **محاضرة ٢**

- حوادث القطارات
- حوادث الطائرات

الموضوع: وفيات العمليات الجراحية والتبئج العام

Death in surgical operation and anesthesia

➤ **محاضرة ١**

- اسباب الموت
- الاجراءات التي يجب اخذها اثناء الفحص التشريحي

Toxicology lectures

- **Lecture 1: Introduction to Toxicology**
 - Define toxicology
 - overview about the main branches of toxicology
 - the general scope of toxicology
- **Lecture 2: Management of a Poisoned Patient**
 - The general guidelines of management
 - The main steps of management
 - Choices of management lines
- **Lecture 3: Toxicology of Opiates**
 - What is opium and its content
 - Opiate addiction
 - Management lines
- **Lecture 4: Toxicology of Marijuana**
 - What is marijuana
 - Its addictive potential
 - Short and long term effects
- **Lecture 5: other drugs of abuse Cocaine, Amphetamine, LSD, Khat, and Benzodiazepines**
 - The addictive potential of these agents
 - The best management line
 - Methods of detection
- **Lecture 6: Toxicology of heavy metals: Arsenic, Lead, and Mercury**
 - The toxic effect of these heavy metals
 - Their detection methods
 - Specific antidotes
- **Lecture 7: Toxicology of Cyanide**
 - The cyanide toxic effects
 - The antidote
 - The management plan in different scenarios
- **Lecture 8: Toxicology of Carbon Monoxide**
 - The effect on the victim
 - The danger on exposed subject
 - The preventive and management strategy
- **Lecture 9: Toxicology of Aspirin**
 - The toxic effect
 - The management lines
 - The specific methods to enhance its excretion

- **Lecture 10: Toxicology of Paracetamol/ Acetaminophen**
 - The toxic effect of this drug
 - The specific antidotes
 - To determine best management plan
- **Lecture 11: Organophosphate Poisoning**
 - The toxic effect of these chemicals
 - The severity and its specific anti dote
 - The management line
- **Lecture 12: Toxicology of Tricyclic-Antidepressants (TCA)**
 - The toxic potential
 - The severity of poisoning
 - The management line
- **Lecture 13: Toxicology of Alcohols, Ethanol/ Methanol/Carbon Tetrachloride**
 - The toxic potential of these agents
 - The specific antidotes
 - The management lines
- **Lecture 14: Toxicology of Kerosene and other Hydrocarbons**
 - The toxic potential of these agents
 - The management plan
 - The effect of these agent on the environment and household setting
- **Lecture 15: Toxicology of Caustic agents/ Bleach and other irritant chemicals**
 - The dangers of these chemical agents
 - The various scenarios of human exposure
 - The management plan

Practical Hours

الاسبوع	العملي	المخرجات التعليمية
١	الشعر	تعريف الشعر وطبقاته (البشرة، القشرة، اللب) وانواع الشعر اعتمادا على طبقة اللب وكيفية تحضير سلايدات الشعر ومطابقتها مع شعر الضحية او المتهم وتمييزها عن شعر الحيوان.
٢	الالياف	كيفية تحضير سلايدات الالياف ومعرفة انواع الالياف عن طريق معرفة صفة كل ليف ومطابقتها مع ملابس الضحية او المتهم.
٣	البقع الدموية	اجراء الاختبارات التمهيدية (البنزدين، الاميدوبايرين، الفينولفتالين المختزل) للتحري عن البقع الدموية في جرائم القتل .
٤	البقع الدموية	اجراء الاختبارات التأكيدية للبقع الدموية (الاختبارات الكيميائية المجهرية - تكاياما، تايشمان - والاختبارات المجهرية للتحري عن كريات الدم الحمر في نقيع البقع الدموية)
٥	البقع المنوية	اجراء الاختبارات التمهيدية (فلورنس ، باربيرو) على البقع المشتبه بكونها مني في الجرائم الجنسية و اجراء الاختبارات التأكيدية (اختبار خميرة الفوسفاتيز الحامضية والتحري عن الحيوانات المنوية)
٦	العلامات الظنية للموت	تعريف الموت ومعرفة اهم العلامات والاعراض الظنية للموت (شحوبه اللون، رخاوة عضلية عامة، انعدام الاحساسات والالام)
٧	العلامات التأكيدية للموت	معرفة اهم العلامات التأكيدية للموت (برودة الجسم، الصملى الرمي، الزرقة الرميه، التفسخ)
٨	الجروح الرضية	تعريف الجروح والتعرف على انواع الجروح وتعريف الجروح الرضية والات المسببة لها ومميزاتها لمقارنتها مع بقية انواع الجروح والاهمية الطبية العدلية للجروح .
٩	الجروح القطعية	تعريف الجروح القطعية والات المسببة لها (الات قاطعة واخزة ، راضة قاطعة) واهم مميزاتها والاهمية الطبية العدلية لها .
١٠	الكدمات والسحجات	تعريف الكدمات والسحجات ودراسة انواعها (كدمات رضية - علاجية) وانواع السحجات(الكشطية , الختمية) ومميزات كل نوع والاهمية الطبية العدلية لكلاهما .
١١	جروح الاسلحة النارية	دراسة صفات الجروح الناتجة عن الاسلحة النارية ومخلفاتها (الغازات ، الحروق، الطوق السحجي، الوشم البارودي) والاهمية الطبية العدلية لها .

التعرف على الكسور في عظام الجمجمة شكلها ونوعها (انخسافية ، خطية ، شرخية) والآلات المسببة لها.	كسور الجمجمة	١٢
دراسة انواع التقارير الطبية العدلية لفحص الاحياء (التقرير الطبي العدلي الاولي ، الدوري، النهائي) والاموات (استمارة التشريح ، شهادة الوفاة)	التقارير الطبية	١٣
معرفة الحالات التي تستوجب تقدير العمر، سن البلوغ القانوني، القواعد العامة في تقدير العمر و طرق تقدير العمر المختلفة	تقدير الاعمار	١٤
مراجعة مختبرات الفصل الاول .	مراجعة مختبرات الفصل الاول .	١٥
التعرف على المراحل التي يمر بها المختنق غرقا والعلامات الاحتمالية للغرق (التغضن) والعلامات التأكيدية (الزبد الرغوي).	الغرق	١٦
اعراض ضربة الشمس والبرد واسبابها.	ضربة الشمس / ضربة البرد	١٧
دراسة اسباب الحروق (حروق جافة، حروق السوائل الساخنة، حروق المواد الكيميائية، حروق الاشعة السينية) ودرجات الحروق واسباب الموت في الحروق .	الحروق	١٨
التعرف على كيفية حدوث الصعق الجوي/الكهربائي واهم الاعراض والمظاهر التشخيصية للحالتين واسباب الموت .	الصعق الجوي / الصعق الكهربائي	١٩
تعريف الاختناق والاعراض العامة للاختناق والمدة الزمنية الملازمة للاختناق والمظاهر التشريحية للاختناق.	الاختناق	٢٠
تعريف كل حالة والاعراض العامة لكل حالة ودراسة المظاهر التشخيصية الخارجية والداخلية لكل حالة.	كتم النفس والخنق	٢١
: تعريف كل حالة ومعرفة انواعها (شنق تام، وغير تام) والمظاهر التشخيصية لكل حالة .	الشنق والانتحار	٢٢
تعلم الفحص الظاهري الخارجي ،الفحص التشريحي الداخلي وانواع الطرق المستخدمة عند اجراء التشريح	اساليب التشريح (د. كرم):	٢٣
- الاسباب الناتجة عن امراض جهاز الدوران - الاسباب الناتجة عن امراض الجهاز التنفسي - الاسباب الناتجة عن امراض الجهاز العصبي المركزي - الاسباب الناتجة عن امراض الجهاز الهضمي - الاسباب الناتجة عن امراض الجهاز البولي	الموت المفاجئ (د. كرم):	٢٤

الاهمية الطبية العدلية في حالات موت الفجأة	-		
الحالات التي تستوجب فتح القبر والاجراءات في فتح القبر للتحري عن السموم والحالات التي لا يستفاد منها في فتح القبر.		فتح القبر	٢٥
افتضاض البكارة الحمل الامراض الانتقالية التناسلية الشذوذ الجنسي	- - - -	التعديت الجنسيه (د. كرم):	٢٦
الاهمية الطبية العدلية لفحوصات البنية فحص فصائل الدم فحص العوامل البايوكيميائية التطابق النسيجي بصمة الحامض النووي	- - - - -	الفحوصات المختبرية ١ (د. كرم):	٢٧
الوصول للجاني عن طريق الاثبات بالادلة الجنائية الحديثة		الفحوصات المختبرية ٢	٢٨
دراسة الاضرار التي تسببها حوادث الطرق من كدمات وسحجات وانواع الجروح والكسور واسباب الموت فيها		حوادث الطرق.	٢٩
مراجعة مختبرات الفصل الثاني .		مراجعة مختبرات الفصل الثاني .	٣٠

Behavioral Sciences

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Department of Medicine	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 4 th year	
Title of the course	Behavioral Sciences	
Code	MCMd401	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
	Theoretical hours=15	
Date of specification approval	12/11/2022	

General Aims of Course

The course aims to teach psychology to students of the fourth stage in the Faculty of Medicine in the theoretical aspects, where the student is familiar with the science of psychology and its classifications.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	1. Understand the subject of psychology 2. Knows the types of psychological problems
Intellectual Skills	1. Recognize psychological problems and its benefit in the field of clinical work
Professional Skills	
General and Transferable Skills	Participate in continuous medical education programs.
Attitude outcomes	Recognize ethical problem and know how to deal with them.

Topic	No. Of lectures	Lecturer
Introduction to Psychology	1	د صفية أديب
Neuroscience and Behavior	1	د صفية أديب
Sensation and Perception	1	د صفية أديب
States of Consciousness	1	د صفية أديب
Learning	1	د صفية أديب
Memory	2	د صفية أديب
Cognition and Language	1	د صفية أديب
Intelligence	1	د صفية أديب

Motivation and Emotion	1	د صفة أديب
Sexuality and Gender	1	د صفة أديب
Development	1	د صفة أديب
Personality	1	د صفة أديب
Health Psychology: Stress, Coping, and Well-Being	1	د صفة أديب
Social Psychology	1	د صفة أديب

Teaching and learning methods	
1. Theoretical lectures	Teaching halls
2. Practical labs or clinical sessions	
3. Seminars and presentations	

Assessment methods	
1. Formative assessments	1. Quiz
2. Summative assessments	1. Theoretical 100%
3. Pass mark	50%

Resources and requirements	
Essential text books	1. Understanding Psychology 2. ATKINSON & HILGARD'S INTRODUCTION TO PSYCHOLOGY
Recommended text books	
Other resources	Up to date in psychology

Theoretical lectures

- **Lecture 1:** Introduction to Psychology
- **Lecture 2:** Neuroscience and Behavior
- **Lecture 3:** Sensation and Perception
- **Lecture 4:** States of Consciousness
- **Lecture 5:** Learning
- **Lecture 6,7:** Memory
- **Lecture 8:** Cognition and Language
- **Lecture 9:** Intelligence
- **Lecture 10:** Motivation and Emotion
- **Lecture 11:** Sexuality and Gender
- **Lecture 12:** Development
- **Lecture 13:** Personality
- **Lecture 14:** Health Psychology: Stress, Coping, and Well-Being
- **Lecture 15:** Social Psychology

Community Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he/she has made maximum use of the available learning opportunities.

Educational Institution/college	CMUM	
Department offering the course	Family and Community Medicine	
Name of Academic Program	MBCbB	
Academic Year/level	2022-2023 / 4 th year	
Title of the course	Community Medicine	
Code	MCCo403	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours=120	Total=225
	Theoretical hours=105	
Date of specification approval	12/11/2022	

General Aim of Course

This course aims to provide students with adequate knowledge, skills, and attitude related to community, preventive medicine and public health science that include; communicable diseases, non communicable diseases, screening, evaluation, monitoring of health problems in the community, in addition to effective doctor- patient communication skills.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1: Define the community medicine, health, prevention, communicable disease and non-communicable disease, and topic related to social sciences , occupational medicine2: Define epidemiology3: Describe primary applications of epidemiology in public health practice.4: List the main communicable diseases5: Recognize the con communicable diseases6: Identify the main role of primary health care and its levels7 :Discuss woman and child health problems8: Understand the medical administration9: Identify school health services and its preventive aspects.10: Explain the environmental health11: Describe the medical entomology12: Define social health in public medicine.13: Study occupational health and related diseases
Intellectual Skills	<ol style="list-style-type: none">1: Qualify primary health measures2: Diagram the aspects that community medicine deal with3: Classify the methods of prevention and control4: Predict the methods of community assessment.5: Solve problems related to health of the community6: Estimate risk for health problems7: Navigate each disease with its causation and methods of prevention and control
Professional Skills	<ol style="list-style-type: none">1: Apply the epidemiological knowledge to community problems2: Solve a problem related to a scenario regarding screening for disease.3: Design research study related to one of community problems4: Practice the role of doctors in communication with the patients5: Criticize the prevention and evaluation program
General and Transferable Skills	<ol style="list-style-type: none">1- Communicate ideas and arguments effectively.2- Work effectively within a team.
Attitude outcomes	<ol style="list-style-type: none">1- Appraise the skills of communication and community medicine in dealing with the health of the community.2- Disseminate knowledge to the community to increase level of awareness to health practice and health problems among population3- Honor and respect seniors and other colleagues involved in his teaching and subsequently in his future practice.

Course structure			
Topic	No. Of lectures	No. Of labs	Lecturer
Communicable diseases	35	14	أ.م.د. همام غانم زبير أ.م.د. نجلاء إبراهيم م.د. نهى حاجم
Epidemiology	14	14	أ.م.د. بسام عبد المبدئ أ.م.د. همام غانم إبراهيم
Non communicable disease	٨	8	م.د. نهى حاجم
Medical Sociology	١٠	4	أ.م.د. نادية حازم
Maternal and child health	9	4	أ.م.د. أميمة عبد الرزاق إبراهيم
Primary health care	4	4	أ.م.د. أميمة عبد الرزاق إبراهيم
Environmental health	8	4	أ.م.د. وليد غانم
Occupational health	٥	4	م.م. صلاح العثو
Medical administration	٥	4	أ.م.د. وليد غانم
Medical entomology	2		أ.م.د. وليد غانم
School and dental health	2		أ.م.د. وليد غانم
Priorities in health problems	3		أ.م.د. نجلاء ابراهيم

Teaching and learning methods	
1. Theoretical lectures	Lectures Small group discussion
2. Practical labs or clinical sessions	The students are divided into small groups each of 10 – 15 students (according to the students number in that year). Group teaching take place twice per week for 2 hours, once for epidemiological exercises and the second for communication skills and research. - Both groups practice at the clinical setting at primary health centers to demonstrate the theoretical knowledge at the practical site
3. Seminars and presentations	Each student in groups should present their project of research in seminars Each student should participate with member of his/her team in presentation of the research that has performed in the first and in the second half of the year.

Assessment methods	
1. Formative assessments	<ul style="list-style-type: none"> • Quizzies • Homework. • Team based learning assessment • Problem solving
2. Summative assessments	<ul style="list-style-type: none"> • Written assessment (essay, MCQs and problem solving questions) • OSCE assessment • Discussion and seminars
3. Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Park's Textbook of preventive and social medicine edited by K. Park 2. Control of Communicable diseases Manual Edited by David L. Heymann, MD
Recommended text books	<ol style="list-style-type: none"> 1 Gordis L, <i>Gordis Epidemiology</i>. 6th Edition, 2018. 2. Practical notes for students on epidemiological practices 3. Practical notes on communication skills (handbook)
Other resources	

Theoretical lectures

Module: Communicable diseases

- **Lecture 1: Introduction to infectious diseases (terminology)**
 - Define communicable diseases
 - Identify the importance of studying communicable diseases epidemiology
 - Define terminology regarding communicable diseases
- **Lecture 2: Prevention and control of infectious diseases**
 - Understand dynamics of disease transmission (chain of infection):
 - Human reservoir or source
 - Modes of transmission
 - Susceptible host
 - Identify main steps in disease prevention and control
- **Lecture. 3 Monkey pox**
 - Define the disease
 - Determine main important characteristics of the diseases
 - Understand its epidemiology
 - Describe main control and preventive measures
 -
- **Lecture 4: Nosocomial infection -**
 - Define nosocomial infections.
 - Point out the general causes and risk factors of nosocomial infections.
 - Demonstrate the main clinical types of nosocomial infections.
 - List the risk factors for each type of nosocomial infections.
 - Define the control strategies of nosocomial infections.
 - List the main preventive measures of nosocomial infections.
- **Lecture 5: Food born disease- Staphylococcus Aureus**
 - Demonstrate the main clinical characteristics of foodborne staphylococcus.
 - Point out the occurrence of disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 6: Food born disease -Salmonellosis**
 - Demonstrate the main clinical characteristics of foodborne salmonellosis.
 - Point out the occurrence of disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 7: Botulism**
 - Demonstrate the main clinical characteristics of foodborne botulism.
 - Point out the occurrence of disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.

- Describe the control measures.
- **Lecture 8: Malaria**
 - Demonstrate the main clinical characteristics of Malaria.
 - Point out the occurrence of the disease.
 - List the causative agents, modes of transmission, incubation periods, and periods of communicability for Malaria.
 - List the main preventive measures for Malaria.
 - Describe the control measures for Malaria.
- **Lecture 9: Bilharzia**
 - Demonstrate the main clinical characteristics of Bilharzia.
 - Point out the occurrence of the disease.
 - List the causative agents, modes of transmission, incubation periods, and periods of communicability for Bilharzia.
 - List the main preventive measures for Bilharzia.
 - Describe the control measures for Bilharzia.
- **Lecture 10: Poliomyelitis**
 - Demonstrate the main clinical characteristics of poliomyelitis.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability of poliomyelitis.
 - List the main preventive measures of poliomyelitis.
 - Describe the control measures of poliomyelitis.
 - Define the WHO strategies of polio eradication.
- **Lecture 11: Rabies**
 - Define the main clinical characteristics of Rabies.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability of Rabies.
 - List the main preventive measures of Rabies.
 - Describe the control measures of Rabies.
- **Lecture 12: Streptococcal diseases (1 lecture)**
 - Define the main clinical types of streptococcal diseases.
 - Point out the occurrence of these diseases.
 - List the causative agent, mode of transmission, incubation period, and the period of communicability of streptococcal diseases.
 - List the main preventive measures of streptococcal disease.
 - Describe the control measures of streptococcal diseases.
- **Lecture 13: Tetanus (1 lecture)**
 - Define the main clinical characteristics of Tetanus.
 - Point out the occurrence of this disease.
 - List the causative agents, modes of transmission, incubation periods, and periods of communicability for Tetanus.
 - List the main preventive measures of Tetanus.
 - Describe the control measures of Tetanus.
- **Lecture 14; Anthrax (1 lecture)**
 - Define the main clinical characteristics of Anthrax.
 - Point out the occurrence of this disease.
 - List the causative agents, modes of transmission, incubation periods, and periods of communicability for Anthrax.
 - List the main preventive measures of Anthrax.
 - Describe the control measures of Anthrax.

- **Lecture 15: Chickenpox (1 lecture)**
 - Demonstrate the main clinical characteristics of chickenpox.
 - Point out the occurrence of this disease.
 - List the causative agents, modes of transmission, incubation periods, and periods of communicability of Chickenpox.
 - List the main preventive measures of Chickenpox.
 - Describe the control measures of Chickenpox.
- **Lecture 16: Smallpox (1 lecture)**
 - Demonstrate the main clinical characteristics of Smallpox.
 - Point out the occurrence of this disease.
 - List the causative agents, modes of transmission, incubation periods, and periods of communicability of Smallpox.
- **Lecture 17: Mumps (1 lecture)**
 - Demonstrate the main clinical characteristics of Mumps.
 - Point out the occurrence of this disease.
 - List the causative agents, modes of transmission, incubation periods, and periods of communicability of Mumps.
 - List the main preventive measures of Mumps.
 - Describe the control measures of Mumps.
- **Lecture 18: COVID-19 (1 lecture)**
 - Define the main clinical characteristics of COVID 19.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability of COVID 19.
 - List the main preventive measures of COVID 19.
 - Describe the control measures of COVID 19.
- **Lecture 19: Typhoid fever (1 lecture)**
 - To properly diagnosed typhoid fevers.
 - To differentiate between convalescent and chronic carrier state.
 - To dealing with chronic carrier (food handlers).
 - To delineate preventive measures of feco-oral diseases in general.
 - To know types and indications of typhoid vaccine.
- **Lecture 20: Brucellosis**
 - Define the main clinical characteristics.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 21: Toxoplasmosis**
 - To have idea about congenital toxoplasma.
 - To know the mode of transmission of disease.
 - To outline the preventive and control measures.
- **Lecture 22: Hepatitis A, B, C, D and E**
 - To know types of viral hepatitis.
 - To understand the mode of transmission of each type.
 - To have ideas about occurrence and chronicity of each type.
 - To focus on preventive measures of each type.
- **Lecture 23: Tuberculosis & Leprosy**
 - To understand the mode of transmission of each type.
 - To have ideas about occurrence and chronicity of each type.

- To focus on preventive measures of each type.
- **Lecture 24: Cholera**
 - To have idea about the history of cholera.
 - To know facts about the occurrence of the disease in Iraq.
 - To determine the susceptible individuals.
 - To know how to deal with cholera epidemics.
- **Lecture 25: STD: syndromic management, HIV infection, gonorrhoea, chlamydial infection.**
 - Define STDs
 - Determine the extent of the problem
 - List important epidemiological factors for diseases
 - Assess main steps in prevention and control of such diseases.
- **Lecture 26: Flu, avian flu, pandemic flu**
 - Define the main clinical characteristics.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 27: Meningitis**
 - Define the main clinical characteristics.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 28: Amoebic and bacillary dysentery**
 - Define the main clinical characteristics.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 29, 30: Arthropod –born infections: plague, relapsing fevers, typhus fevers, Arthropod –born viral infections**
 - Define the main clinical characteristics.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 31: Infectious agents as pre-cancerous condition**
 - Define the main clinical characteristics.
 - Point out the occurrence of the disease.
 - List the causative agent, mode of transmission, incubation period, and period of communicability.
 - List the main preventive measures.
 - Describe the control measures.
- **Lecture 32: Measles**
 - Define Measles, and its main epidemiology
 - Determine main control measures

- Understand ways of prevention
- **Lecture 33: Rubella**
 - Know how to diagnose rubella,
 - prevent and control rubella
 - Specify the indication and contraindications of MMR vaccine.
- **Lecture 34: Whooping cough**
 - Define pertussis
 - Understand the epidemiology of the disease
 - Enumerate the main steps of prevention and control of the disease.
- **Lecture 35: Diphtheria**
 - Define diphtheria
 - Understand epidemiology of the disease
 - Know how to control and prevent the disease.

Module: Epidemiology

- **Lecture 36: Introduction to epidemiology:**
 - Define epidemiology.
 - Itemize the historical evolution of epidemiology.
 - State the elements of a case definition and state the effect of changing the value of any of the elements.
 - List and describe primary applications of epidemiology in public health practice.
 - List the three components of the epidemiologic triad.
 - List and describe the different stages of natural history of disease.
- **Lecture 37,38: Measurements in epidemiology (rates, ratios, proportion):**
 - (Morbidity and mortality rates):
 - Calculate and interpret the differences of the main tools of measurement:
 - rates, ratios& proportions.
 - Estimate and assess the importance of :
 - a -Incidence rates, including attack rate.
 - b Prevalence rates (point and period).
 - c- Measure the main disease morbidity and mortality rates.
 - **Lecture 39, 40,41** : Epidemiological studies (descriptive, analytic observational studies
 - Identify the main types of epidemiologic studies, and the differences between them according to their purposes and aims.
- **Lecture 42,43,44: Bias and confounding - Association and causation:**
 - Demonstrate the association between a cause (or a risk factor) and outcome.
 - Define the types of factors in causation :
 - Determine the criteria of causal association.
- **Lecture 45,46,47: Epidemiological interventional studies and evidence based medicine:**
 - To identify the design of the Randomized Controlled Clinical Trial RCCT, and their advantages and disadvantages.
 - To be able to
 - Draw a diagram of main design of RCCT.
 - Classify the experimental group and the control group.

- Demonstrate the effect of volunteer, randomization, compliance and non-compliance, placebo in the RCCT.

➤ **Lecture 48: Clinical epidemiology (validity and reliability of diagnostic testing):**

- Define Clinical epidemiology and its importance in individual patient care.
- Demonstrate the role of Validity & Reliability in the clinical diagnosis.
- Elicit the main components of validity of the diagnostic indicators.
- Determine the "Gold Standard" (Reference, Definitive) Test.
- Construct 2x2 table for evaluating the validity of diagnostic indicators.
- Estimate the sensitivity, specificity, (+)ve and (-)ve predictive values and (+)ve and (-)ve likelihood ratios and accuracy rate of the diagnostic indicators using the 2x2 table.
- Detect the relation between (+)ve and (-)ve predictive values and disease prevalence.

➤ **Lecture 49,50: Investigation of an epidemic:**

- Define an epidemic of disease (i.e. disease outbreak).
- Determine its main types (i.e. Point (common) source and Propagated (serial) outbreaks
- Reveal how are outbreaks detected.
- Enumerate the Steps in an outbreak investigation.

Module: Non- communicable diseases

➤ **Lecture 51: epidemiology of non communicable diseases**

- Identify burden of the problem
- High light most common diseases
- Explain main risk factors of NCDs
- Determine best way of prevention and control

➤ **Lecture 52: Hypertension & obesity**

- Define obesity and hypertension
- Asses common risk factors
- Illustrate ways of prevention

➤ **Lecture 53,54: cardiovascular diseases**

- Identify burden of CVDs
- Define CVDs
- Determine the possible risk factors
- Assess possible ways for prevention and control

➤ **Lecture 55: Diabetes mellitus**

- Enumerate the risk factors for Diabetes mellitus (DM)
- Diagnose DM based on blood sugar values
- List the preventive measures in accordance with the levels of prevention
- Enumerate the components of self-management

➤ **Lecture 56: Chronic obstructive pulmonary diseases**

- Define COPD,
- Verify risk factors

- Identify possible strategies for prevention and control of COPD,
- **Lecture 57: Cancer**
- Define cancer
- Verify risk factors
- Identify possible strategies for prevention and control cancer
- Know recent advances in molecular epidemiology
- **Lecture 58: Accident**
- Define Accident
- Verify risk factors
- Identify possible strategies for prevention and control of accident
- **Lecture 59: geriatric medicine**
- Define common problems
- Identify ways of prevention of these problems
- Clarify lifestyle modification and problem managme

Module: PHC

- **Lecture 60 Introduction to primary health care**
- Define the primary health care.
- Enumerate the principles of PHC.
- Determine the specific objectives and benefits of PHC.
- Evaluate cases applied to primary health care approach
- **61 Concept of prevention and principles of PHC**
- Define health
- Determine the level of health care
- Explain the characteristics of health care.
- Classify prevention levels.
- Apply prevention levels to one of community problems.
- **Lecture 62 Primary Health Care Challenges, Approach And Strategy**
- Define PHC strategies.
- Determine the difference of primary health care approach and medical care approach.
- Determine the meaning of comprehensive approach of PHC.
- **Lecture 63 Population Pyramid And Sustainable Development Goals**
- To diagram the different types of population pyramid.
- To evaluate the dependency ratio in different communities.
- To appraise the millennium and sustainable development goals

Module: Maternal and child health (MCH)

- **Lecture 64: Integrated Maternal, Neonatal and Child Health(IMNCH)**
- Identify the need for IMNCH services.
- Describe the health profile indices.
- Classify major causes of maternal death.
- **Lecture 65: Essential Elements (phases) of IMNCH Services in PHC Center**
- Determine components maternal care
- Classify measures of care to mothers.
- Apply antenatal card to case of maternal problem.

- **Lecture 66 : Risk assessment of pregnancy & Screening**
 - To identify the meaning of high risk pregnancy
 - To Describe risk screening measures.
 - To evaluate actions taken to deal with a woman in each category in both systems.
- **Lecture 67: Nutrition during pregnancy**
 - Describe nutritional requirements in pregnancy.
 - Appraise nutrition program during pregnancy.
 - Suggest important topics that should be discussed during health education sessions during antenatal care.
- **Lecture 68: Natal care, Delivery care, Care of the newborn**
 - Identify the importance of natal period
 - Identify most common causes of mortality during this period.
 - Evaluate the obstetric care.
 - Apply Apgar score to one case of natal problem.
- **Lecture 69: Breast Feeding**
 - Describe various steps that determine correct positioning in BF. 6.
 - Enumerate disadvantages of Bottle Feeding
 - Enumerate benefits of BF.
 - List contra indications to BF.
 - Assess management steps in case of mastitis.
- **Lecture 70: Weaning and family planning**
 - Define weaning.
 - Assess case management of acute infection presented to PHC.
 - Define the contraception.
 - Apply best method of Family planning to one case of the community problem.
- **Lecture 71: Integrated management of childhood illness (IMCI)and case management**
 - Enumerate most common causes of under fives death in developing countries.
 - Draw charts show summary of IMCI for children 2months-5 years and 1 week to 2 months.
- **Lecture72: Young child clinic**
 - Realize the importance of young child clinic in health promotion and prevention of childhood diseases.
 - List components of essential services provided by this clinic.
 - Draw under nutrition-disease cycle .
 - Assess growth of under five child growth.
- **Lecture 73: Vaccination**
 - Outline the national immunization schedule in Iraq.
 - Make a table shows basic data on vaccines used.
 - Mention the common contraindications and complications of the vaccine used.
 - Assess the cold chain and vaccine management.
 - To describe the COVID19 vaccination types and its common side effect.

Module: Sociology

- **Lecture 74: social science**
 - Definition of social sciences.

- Differentiation between; socialism, capitalism and socialization.
- Definition and identification types of families
- Identifying; norms, deviance and social control.
- Recognizing; authority, culture, race & ethnicity.
- Spotting; standard of living, social defense, social problems.
- **Lecture 75: Marking systems of society.**

- Describing community and its characteristics.
- Setting apart between classification of social differentiation.
- Identifying occupational social classification. Recognizing factors of social class differences.
- **Lecture 76: Describing life styles and their relations to health.**
- Recognizing sick role and health seeking behavior
- Identifying health, disease, illness and sickness.
- Detecting normality, abnormality from cultural point of view.
- **Lecture 77: Understanding Illness and consulting a doctor.**
- Classifying types of medical belief system.

- **Lecture 78: illness and sick role**
- Ascertaining factors affecting reaction to illness.
- Knowing the characteristic of sick role.
- **Lecture 79: doctor role**
- Recognizing healing role of doctors, Preferable Attitudes for Doctors and conflicts in doctor's life.
- Identifying socio- cultural factors in health and disease.
- **Lecture 80: stress**
- Definition of stress, the reason behind stress, types of stressors and pathological effects of the stress
- Categorizing factors influencing the stress response.
- Ordering the scientific social etiology in health and diseases.
- Identification of social pathology and their prevention and control.
- **Lecture 81: Listing behavioral problems in school aged children.**
- Recognizing Juvenile Delinquency.
- Definition of Battered Baby Syndrome, child abuse, street children, child labor and child marriage.
- Identification of drug addiction and its management.
- Defining handicapped, labeling and stigma.

- **Lecture 82: Identification of doctor- patient relationship and modern medicine.**

- Spotting effect of communication on clinical effectiveness, information exchange and patient satisfaction.
- Recognizing factor affecting the balance of power between doctor and patient.
- **Lecture 83: modern medicine**
- Understanding the criticism on modern medicine.
- Defying the characteristics of doctors in modern medicine and problem in modern medicine.

- **Lecture 84: smoking**
 - Advising about tobacco and health.
 - Recognizing the facts about smoking.
 - Classifying the types of tobacco smoking.
 - Listing the causes of smoking.
 - Understanding effects of nicotine and consequences of smoking.
 - Management and prevention of tobacco smoking.

Module: Occupational health

- **Lecture 85: Introduction to occupational health (1 lecture)**
 - Definitions
 - Aim of occupational health
 - Man and physical, chemical and biological agents
 - Occupational hazards
 - Occupational diseases
 - Prevention of occupational diseases
- **Lecture 86: Occupational skin diseases (1 lecture)**
 - Classification of agents causing occupational skin diseases
 - Control and prevention of occupation skin diseases
- **Lecture 87: Occupational Lung Diseases (1 lecture)**
 - Occupational asthma
 - Pneumoconiosis
 - Benign pneumoconiosis
 - Fibrotic pneumoconiosis
 - Control and prevention of occupation lung diseases
- **Lecture 88: Occupational cancer (1 lecture)**
 - Characteristics of occupational cancer
 - Lung cancer
 - Skin cancer
 - Urinary bladder cancer
 - Leukemia
 - Prevention and control of occupational cancer
- **Lecture 89: Lead poisoning (1 lecture)**
 - Definition
 - Types of lead poisoning
 - Lead uses and sources
 - Mode of absorption of lead
 - Distribution of lead in the body
 - Lead excretion
 - Lead metabolism and nutrition
 - Body storage of lead

Module: Administration

- **Lecture 90: Medical administration (2Lecture)**
 - Define health administration .
 - Identify steps of health administration.
 - Enumerate essential factors of medical administration.
 - Categorize purposes of administration .
 - Describe relative factors of administration .
 - Outline elements of administration.

- Arrange plan criteria.
- Determine types and stages of health administration planning.
- **Lecture 91: Medical administration (Lecture -2)**
- Understand meaning & necessary activities of organization.
- Identify important organizational considerations .
- Describe organization structure & organization chart.
- Categorize types of organization.
- Determine the meaning of motivation.
- Outline stages of human needs & its hierarchy .
- **Lecture 92: Medical administration**
- Understand meaning of health program evaluation.
- Identify the difference between effectiveness & efficiency of a program .
- Describe levels of health program evaluation.
- Categorize criteria of scientific hospital administration .
- **Lecture 93: Quality of care A process for making strategic choices in health systems**
- Why a focus on quality now Why a focus on health systems and decision-makers Improving quality and whole-system reform Policy-making and evidence
- **Lecture 94: Medical Administration**
- Understand Management Definitions.
- Identify Key Functions of Management.
- Discuss the meaning of managers .
- Categorize Types of Managers.
- Describe Management skills .
- Outline Levels of Management.
- Determine Healthcare Definition.
- Specify characteristics & requirements of health care administration.
- Characteristics & Challenges of Health Care.
- Arrange elements & environmental forces affecting health management system .

Module :Environmental health

- **Lecture 95:Environmental Health Lecture**
- Define the terms environment, sanitation, environmental sanitation & environmental health.
- Identify main components of environment.
- Enumerate ecological factors .
- Categorize the scope of environmental health.
- Describe specific problems facing environmental health.
- Outline types of environment.
- Arrange the addressing health problems.
- **Lecture 96: Environmental Lecture**
- Describe hydrologic cycle , uses & requirements of water .
- Identify sources of drinking water .
- Determine advantages & disadvantages of each water source .
- Discuss water pollution types , indicators & water related diseases .
- Specify water purification plant purposes , methods & steps .
- Identify sources & treatment measures of bad odor & hardness .

- Arrange laboratory examinations of water .
- **Lecture 97: Environmental Lecture – 3-**
- Determine functions of air .
- Identify sources of air impurity .
- Discuss the self cleansing mechanisms of outdoor air .
- Describe characteristics of occupied room air & factors affecting comfort feeling of individuals.
- Specify meteorological factors affecting atmospheric pollution levels .
- Determine air pollution (definition , sources effect , disinfection methods and preventive & control measures) .
- **Lecture 98:Environmental pollution**
- Describe the requirements of good lighting .
- Discuss suggestions for improving daylight illumination .
- **Lecture 99 :Environmental pollution**
- Define the terms noise and noise pollution .
- Determine important properties for noise .
- Specify basic instruments used in noise studies .
- Identify effects of noise exposure .
- Arrange control measures for noise .
- **Lecture 100: ENVIRONMENT**
- Classify sources of radiation .
- Identify types of radiation .
- Enumerate biological effects of radiation & radiation protection .
- Determine elements of meteorological environment .
- Specify effects of atmospheric pressure on health .
- Discuss effect & preventive measures of air temperature .
- Clarify climate related terms & parameters .
- Module: Medical entomology
- **Lecture : 101 Medical entomology**
- Define relevant terms used in medical entomology .
- Identify arthropods of medical importance & its distinctive characters .
- Enumerate arthropod-borne diseases .
- Determine methods of transmission of arthropod-borne diseases .
- Specify principles of arthropod control .
- **Lecture 102: Medical entomology**
- Describe groups of mosquitoes related to disease transmission .
- Discuss habits of mosquitoes .
- Classify mosquito-borne diseases .
- Determine mosquito control measures .
- Specify house flies habits & ways of disease transmission .
- Arrange fly control measures .
- Functions of management

Module: School and dental health

- **Lecture 103: School health and dental health**
- Define school health services
- Identify main elements
- Specify activities of school health services in Iraq .

- Identify common dental health problems among children .
- Determine essential elements for dental carries development .
- Discuss epidemiology of dental carries in developed & developing countries .
- Describe preventive measures for dental carries .

Module: Priorities in health problems

➤ **Lecture 104:ARI**

- Define ARI in children.
- Point out the occurrence of the disease and who is at risk to develop the disease.
- Define the methods of patient's assessment.
- Identify who should be referred to hospital according to the clinical evaluation.
- List the management according to age.

➤ **Lecture 105: Diarrhea**

- Define diarrheal disease in children.
- Point out the occurrence of the disease.
- Define the methods of assessment for dehydration.
- List the degrees of dehydration and their plans of correction.
- List the main contributing factors to diarrhea and their preventive measures.

Practical hours

➤ **Definition of epidemiology.**

- Informing the students that all findings must be related to a defined population.
- Recognizing that epidemiological studies oriented to groups rather than individuals.
- Notifying the students that conclusions are based on comparisons.

➤ **Reviewing measurements of diseases**

- Measures of morbidity
- Measures of mortality.
- Measures of fertility

➤ **Revising prevalence of tuberculosis.**

- Estimating the overall prevalence rate of TB in Mosul governorate, the prevalence rate of TB among males and among females and the proportion of males and females among TB cases.
- Measuring the male to female ratio of the total TB cases; For Pulmonary type and for the extra Pulmonary type.
- Describing the socio-demographic characteristics of the sample of TB patients.

➤ **Learning the demographic characteristics.**

- Reviewing the population age structure of the world population.
- Analyzing the differences between in the death rate in Western Europe higher and North Africa.
- Calculating the population growth rate.

- Identifying the population doubling time and its calculation.
 - Making a suitable percentage of the age – specific and gender– specific population number in for Iraqi population.
 - Estimating the age– specific and total male to female ratio for Iraqi population.
 - Describing the population structure of Iraq.
- **Reviewing the antenatal care.**
- Defining the high risk group pregnant women.
 - Spotting type of study design was used.
 - Calculating the overall point prevalence of pregnancy among the village women.
- **Calculating the coverage rate of antenatal care services in PHC.**
- Answering two problems related to coverage rate of antenatal care services per month.
- **Answering a group of questions about case series study design related to a real study about rickets:**
- Define rickets.
 - What type of study design was used in this investigation?
 - Is this study design used for descriptive or analytic purposes?
 - List the main advantages and disadvantages of this study design.
 - Can the investigator conclude that rickets is a common or uncommon disease affecting the infants in this age? Does this study alone give the complete picture of the disease? If not how can these be done?
 - What do we mean by ecological study and ecological fallacy?
 - What are the differences between hospital based and community based studies?
- **Reviewing the case control study design and answering the following questions which related to a given scenario:**
- What type of study design was used?
 - Construct a diagram to represent this study design.
 - What are the criteria of selecting the 2nd group (the controls)?
 - Construct 2×2 tables for the results of this study.
 - Can the temporal association between the risk factor and the disease is determined in this type of study design? Explain briefly.
 - What are the advantages of this study design?
 - What are the disadvantages of this study design?
 - How can the risk be estimated between the risk factors and the disease? Estimate the risk of the feeding pattern and UTI among the cases in this study.
- **Revising a scenario about the cohort study design and answering the following questions:**
- Mention the main advantages of such a study design.
 - Construct a diagram to represent this study design.
 - Present the results in a 2×2 table.
 - Can the incidence rate be estimated? If yes, estimate it among the exposed women, among none exposed and the total women.
 - How can the risk of developing disease among people exposed to risk factor determined? Estimate this risk using a suitable measure for this study design.

- How much excess of the disease could be attributed to the risk factor exposure?
- How much of the disease could be prevented if the exposure stopped.
- From public health point of view, what are the differences between relative risk and attributable risk measurement?
- **Analysing a scenario about interventional study design and answering the following questions:**
 - Is this study useful for the general aim? Mention the advantages of this study.
 - Are there important disadvantages in this study design? Mention them.
 - Calculate the refusal rate in this study and how it effect on generalization of the results.
 - What do you call the invitation to this study and obtaining accepting to participate?
 - How can you compare between the results of the two groups?
 - What is meant by "Number Needed for Treatment NNT"? Can you estimated in this study?
 - Estimate the % improvement rate in the mean serum SGOT enzyme (effectiveness of the therapy).
 - Is this study suitable for blinding technique? Which types of blinding do you know?
 - Define placebo. Mention its benefits and detriment.
- **When we decide to stop the experimental studies earlier than the originally planned?**
 - Revising screening of diseases and responding the following questions:
 - What is meant by screening? Is this process of practical importance?
 - What are the criteria of screening in general?
 - In the above example, on what basis screening done?
 - Set up a fourfold table with the appropriate numbers in each cell of the table.
 - Calculate the following values:
 - The percentage of false positives.
 - b- The percentage of false negatives.
 - c- The positive predictive value (PPV).
 - d- The negative predictive value (NPV).
 - If the prevalence of undetected diabetes in the same population became 3% what happen to PPV and NPV?
- **Evaluating screening in four communities and answering the following questions:**
 - Calculate the prevalence of rheumatoid arthritis in each community.
 - Calculate the sensitivity and the specificity of the test for each community. The sensitivity and specificity change as the prevalence changes in the four communities
 - Calculate the PPV & NPV for each community. Graph the PPV & NPV against the prevalence for the communities. As the prevalence increases, what happens to the PPV & NPV?
 - Estimate the positive and negative likely-hood ratios (LR+ & LR-) for each community. Comment on the results.

- **Training students to solve a problem related to a scenario regarding screening program of T.B. disease the students have to answer the questions:**
 - Construct 2×2 table for the results.
 - Estimate the sensitivity, specificity, and the PPV of the sputum smear. Would you recommend its general use?
 - What was the prevalence of TB in the screened individuals?
 - If you know that the sensitivity and the specificity of CXR were 45% and 65% respectively. Which test you prefer for screening of TB, sputum smear or CXR? Explain.
- **Understanding the investigation of an epidemic**
 - Define disease outbreak.
 - Listing the essential steps that be taken to investigate an outbreak.
 - Estimating the general attack rate of this illness.
 - Does recording the main clinical features among the ill persons give more clues as the etiology?
 - What is the incubation period? How it used when investigating an epidemic?
 - What is the importance of investigating the non-cases in epidemic investigation?
- **Solving a theoretical scenario about food poisoning outbreak. The required tasks include:**
 - Summarize the data according to eating and not eating the food items.
 - Set up a 2×2 table of illness and exposure for each food item.
 - Found the type of measure that can detect the risk of illness for each food Estimate this risk.
 - Comment on the result indicates
 - Which food or foods should sent to the laboratory for analysis?
 - Mention the necessary measures to avoid such epidemics.

Module: Communication Skills and Health Education and research

- **Introduction to the medical communication skills and research implementation**
 - To identify the importance of teaching communication skills.
 - To determine the main domains need them for out-competence
 - To define communication and communication skills.
 - Introduction to research.
- **Importance of effective medical Communication Skills**
 - To determine the different aspect of benefits from effective communication.
 - To identify the assumption and evidence base for teaching communication skills for medical students.
- **The Global Deficiencies in Medical Communication**
 - To determine the Reasons for the Deficiencies in the Medical Communication
 - To identify the specific Strategies for Teaching Communication Skills
- **How to communicate with the patient**
 - To define the core communication skills.
 - To differentiate the advanced communication skills.
- **Core communication skills and aim of research and how to choose study design:**

- To determine the Doctor-Patient Interpersonal Skills
- To practice how to Initiate the Session with the patient,
- To practice how to build the Relationship.
- To practice how to provide the structure to the consultation.
- To practice how to close the Session.
- **Information gathering skills and developing data collecting tool**
- To practice how to be able for Initial Exploration of Patient's Problems (disease & illness).
- To practice how to be able for taking the Disease Framework from the patient (doctor perspective).
- To practice how to be able for Further Exploration of the Illness framework (patient perspective).
- To practice how to be able for taking Essential Background Information.
- **Information Giving Skills and start performing the research**
- To practice how to be able for Providing the correct amount and type of information.
- To practice how to be able for Planning shared decision-making.
- **Advanced (Specific) Communication Skills and follow up of research**
- To practice the Skills for Motivating Patient Adherence to Treatment Plans.
- **Protocol for Breaking Bad News**
- To practice certain important points that should be used in breaking bad news to the patients
- **Dealing With the Angry Patient**
- To practice the specific skills that needed for dealing with angry patient.
- **The Very Short Contact**
- To practice what to do in very short contact situation.
- **Disclosing Medical Errors and Side Effect of Treatment and follow up for research**
- To practice important points that should be do in dealing with disclosure of medical error.
- **Special Medical Situation**
- To practice how to deal with special groups of population.
- To practice how to deal with specific group of disorders.
- **Special personality problems and special medical situation**
- To practice how to deal with Special personality problems
- To practice how to deal with Special clinical situations
- To determine When Can the Physician Truly Decide to Refer the Patient to the "Psychologist
- **The sick rule and research evaluation**
- To define the sick rule.
- To recognize the importance of application of sick rule to the patients.

Obstetrics

Course Description

This course includes the scientific, practical and cognitive construction of obstetrics for students of the fourth stage in the college of Medicine and it includes introducing students to the basic skills that allow them to study and analyze study cases in order to provide health care and raise the efficiency of students scientifically and practically by providing students with the academic medical information necessary for the care of pregnant women and the foundations of the birth process and the diagnosis of pathological conditions and complications that may accompany pregnancy and childbirth. With an emphasis on developing the student's ability to develop clinical skills and explain ethical principles in dealing with pathological conditions and communication skills with the patient.

Educational Institution/ college	CMUM	
Department offering the course	Gynecology and Obstetrics	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023/4 th year	
Title of the course	Obstetrics	
Code	MCOg404	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours=90 hours	Total=150 hours
	Theoretical hours=60 hours	
Date of specification approval	1/9/2022	

General Aims of the Course:

Building knowledge, ability and skill to accommodate the scientific foundations in the subjects of obstetric and understand the terms of the scientific and practical material.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. identify the physiological and anatomical changes that occur in the female reproductive system and the rest of the body systems during pregnancy and childbirth.2. explain the steps of primary health care of pregnant woman.3. describe the foundations of childbirth.4. define and illustrate the basics of diseases and complications that affect women during pregnancy, childbirth and puerperium.
Intellectual Skills	<ol style="list-style-type: none">1. obtain the history of the pathological condition correctly from the patient and link it to the clinical data of the clinical examination and the results of laboratory or imaging tests to reach the correct diagnosis of the pathological condition and its treatment.2. utilization of the results of laboratory or imaging tests used in diagnosis.
Professional Skills	<ol style="list-style-type: none">1. conduct the primary health care to pregnant women.2. distinguish the childbirth and plan for its management.3. diagnose and treat complications and diseases that affect women during pregnancy, childbirth and puerperium, especially common and emergency, in addition to conducting the necessary clinical examination.4. communicate effectively with the patients .

General and Transferable Skills	<p>1. develop his or her ability to deal with the patient after graduation.</p> <p>2. research scientific sources related to the subjects of obstetrics and scientifically approved websites to update his or her scientific knowledge.</p>		
Course structure			
Topic	No. Of lectures		Lecturer
Female reproductive anatomy and physiology.	2		Dr. Zahraa Noah Dr. Aseel Basim
Conception	13		Dr. Zahraa Noah Dr. Asmaa AL sanjry Dr. Ruaa A.Hamed
Normal labor	4		Dr. Hiba A. Suhaeel
Puerperium and its disorder.	2		Dr. Hiba A. Suhaeel
Fetal malposition and malpresentation.	3		Dr. Saja Al-Jawady
Bleeding in late pregnancy.	3		Dr. Widad M. Abass
Medical and surgical disorder in pregnancy.	11		Dr. Aseel B. Younus Dr. Widad M. Abass
Obstetric complications.	7		Dr. Amina Zakareia
Abnormal labor.	3		Dr. Amina Zakareia

Post-partum haemorrhage and obstetric injuries.	3		Dr. Zahraa Noah
Coagulation disorder in pregnancy.	1		Dr. Zahraa Noah
Common obstetric operative procedures:	2		Dr. Zahraa Noah
Prenatal infection and diagnosis.	2		Dr. Ruaa A.Hamed
Miscellaneous subjects in obstetrics.	4		Dr. Saja Al-Jawady Dr. Baraa Lukman Dr. Hadeel Anwer

Teaching and learning methods	
Theoretical lectures	60 lectures
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students .
Seminars and presentations	None

Assessment methods	
Formative assessments	1. mini clinical exam(Mini cx) 2. case based discussion (CBD) 3. direct observational procedures(DOP)

Summative assessments	<ol style="list-style-type: none"> 1. Essay 2. MCQ 3. OSCE
Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Obstetric by ten teachers.
Recommended text books	<ol style="list-style-type: none"> 1. Dewhursts textbook of obstetrics and gynaecology. 2. Essential textbook of obstetrics and gynaecology.
Other resources	<ol style="list-style-type: none"> 1. Lectures given by lecturers in the 4th year. 2. workshops, journals and websites

Theoretical lectures

Module: Female reproductive anatomy and physiology

➤ **Lecture 1: Description of female genital organs anatomy.**

- External genital organs: development, blood supply, nerve supply and lymphatics.
- Internal genital organs: development, blood supply, nerve supply and lymphatics.
- Muscles and fascia in relation to the pelvic organ and their functions.

➤ **Lecture 2,3: Review of physiology of female reproductive function.**

- Female reproductive organs.
- Menstrual cycle.
- Hormones controlling the menstrual cycle.(hypothalamus, pituitary, ovary).
- Phases of the menstrual cycle(follicular phase, ovulation and luteal phase).
- Endometrial cycle (proliferative phase, secretory phase, menstruation).

Module : Conception

➤ **Lecture 1: Fertilization, implantation and embryogenesis.**

- Zygote.
- Blastocyst, blastocyst implantation.
- Early period of embryogenesis.

➤ **Lecture 2: Placenta, fetal membranes and amniotic fluid.**

- Normal placenta (Early development, anatomy, structure and placental circulation).
- Placental abnormalities.
- Fetal membranes (chorion and amnion).
- Amniotic fluid: production and circulation, composition and functions.
- The umbilical cord: Development, and structures.

➤ **Lecture 3: Fetus and fetal circulation.**

- Fetal development periods, fetal age and its calculation.

- Normal fetal growth and factors affecting it.
- Physiology of fetal nutrition.
- Fetal blood.
- Fetal urinary system, skin, gastrointestinal tract and meconium.
- Respiratory, surfactant and cardiovascular system developments.
- Fetal endocrinology.
- Fetal circulation and changes at birth.

➤ **Lecture 4: Systemic review of pregnancy changes.**

- Changes of genital tract.
- Cutaneous changes.
- Weight and water metabolism.
- Metabolic and endocrine changes.
- Blood and cardiovascular changes.
- Other systemic changes (respiratory, urinary, alimentary (liver and gallbladder), nervous system, and locomotors system).

➤ **Lecture 5: Clinical signs and diagnosis of pregnancy.**

- Symptoms and signs of pregnancy during each trimester.
- Immunological test for diagnosis of pregnancy and its other uses.
- Ultrasound diagnosis of pregnancy.
- Differential diagnosis of pregnancy.

➤ **Lecture 6: Preconceptional and antenatal care:**

- Definition and aims.
- Booking visit, history, examination and investigation.
- Subsequent antenatal care visit activities and antenatal appointment schedule.
- Preparing for delivery.

➤ **Lecture 7: Effect of drugs during pregnancy and lactation.**

- Definition of teratogen.
- Factors determine the effect of the drugs on the fetus.
- The critical period during pregnancy.
- FDA classification system and examples of the effect of maternal drugs exposure on fetus during pregnancy.

- Approach to drug therapy during pregnancy and examples of treatment plan during pregnancy.

- Effect of drugs exposure in male partner.

➤ **Lecture 8: Morning sickness and hyperemesis gravidarum.**

- Definitions, incidence and etiology.

- Clinical presentation, assessment of severity.

- Differential diagnosis of nausea and vomiting during pregnancy.

- Investigation.

- Treatment strategies and advice on patient methods of eating.

- Further strategies for reluctant hyperemesis gravidarum.

➤ **Lecture 9: Early pregnancy bleeding.**

- Types of miscarriage.

- Definition and incidence of miscarriage.

- Etiology and types of miscarriage.

- Diagnosis and treatment.

➤ **Lecture 10: Recurrent miscarriage.**

- Recurrent miscarriage: definition, causes, management.

- Causes of second trimester miscarriage.

- Cervical incompetence: definition, causes, diagnosis, management.

- Methods for termination of first and second trimester pregnancy.

➤ **Lecture 11: Ectopic pregnancy**

- Definition.

- Sites of ectopic.

- Clinical presentations.

- Investigations.

- Treatment: expectant, medical and surgical.

- Atypical sites of ectopic pregnancy.

➤ **Lecture 12: Gestational trophoblastic diseases (Hydatiform mole)**

- Definition and main categories.

- Incidence.

- Etiology.

- Clinical features, investigation, diagnosis.

➤ **Lecture 13: Hydatiform mole (part 2)**

- Treatment.

- Complications.

- Prognosis.

Module: Normal labor

➤ **Lecture 1: Review of anatomy of maternal pelvis and fetal skull**

- Maternal bony pelvis and soft tissues structure.

- Maternal pelvic plain.

- Maternal pelvic diameters.

- Fetal skull anatomy, diameters, and their changes during labor.

➤ **Lecture 2: Normal labor mechanisms**

- Mechanism of normal labor.

- Obstetric examination.

➤ **Lecture 3, 4: Management of normal labor**

- Stages of normal labor(1st, 2nd and 3rdg **pregnancy and labor.**

- Antenatal assessment of fetal wellbeing.

- Fetal monitoring during labor

Module: Puerperium and its disorder

➤ **Lecture 1: puerperium and its management**

- Definition.

- Changes during puerperium.

- Management.

- Postnatal examination.

➤ **Lecture 2: Pathological conditions during puerperium**

- Puerperal pyrexia, definition and causes.

- Puerperal sepsis: predisposing factors, clinical features, diagnosis and treatment, prevention of puerperal sepsis.
- Breast disorder during puerperium
- Secondary post-partum haemorrhage
- Post-partum blues and depression

Module: Fetal malposition and malpresentation

➤ **Lecture 1: Occipitoposterior and deep transverse arrest of the head.**

- Introduction to malposition and malpresentation including definitions, types, and causes.
- Occipitoposterior causes diagnosis and management in labor.
- Deep transverse arrest of the head.
- Fetal malpresentation: Face presentation and brow presentation.

➤ **Lecture 2: Breech presentation**

- Definition.
- Types.
- Causes.
- Diagnosis of breech in pregnancy and labor.
- Mode of delivery (External cephalic version, assisted breech delivery, caesarean section).
- Complication of breech delivery.

➤ **Lecture 3: Transverse lie and cord accident**

- Transverse lie Causes, diagnosis in labor and in pregnancy, complication and management during labor and delivery.
- Cord accident (Causes, diagnosis, Complication (fetal and maternal) and management during labor).

Module : Bleeding in late pregnancy

➤ **Lecture 1: Antepartum hemorrhage**

- Antepartum haemorrhage (Definition, causes and complication).

- Placenta previa (classification, risk factors, clinical features and complication).

➤ **Lecture 2: Placental abruption**

- Placental abruption (Risk factors, types, clinical features and complications).

- Other causes of bleeding during pregnancy and labor: Vasa previa, Rupture uterus.

- Investigation in antepartum haemorrhage.

- Management of antepartum haemorrhage.

Module: Medical and surgical disorders in pregnancy

➤ **Lecture 1: Diabetes, gestational and pre- gestational diabetes.**

- Introduction, and classification of diabetes during pregnancy.

- Gestational diabetes, definition, risk factors and pathophysiology.

- Screening and diagnosis.

- Maternal and fetal effects of diabetes during pregnancy.

- Management of diabetes during pregnancy.

- Fetal surveillance and timing of delivery.

- Management during labor and postpartum period.

- Pre-gestational diabetes:

- Pre-pregnancy counseling.

- Maternal and fetal complications.

- Management during pregnancy: blood glucose control, assessment for retinopathy and nephropathy and fetal surveillance.

- Management during labor.

- Postpartum considerations.

➤ **Lecture 2: Thyroid and pituitary disorder during pregnancy**

- Hypothyroidism.

- Hyperthyroidism.

- Pituitary disease during pregnancy.

➤ **Lecture 3: Hypertension with pregnancy**

- Classification, diagnosis and grades of severity.

- Gestational hypertension.

➤ **Lecture 4: Pre-eclampsia**

- Pre-eclampsia definition, risk factors, pathophysiology and investigations.

- Indicators for severity, complications and HELLP syndrome.

- Management of pre-eclampsia:

➤ **Lecture 5: Eclampsia and chronic hypertension**

- Definition of eclampsia, risk factors.

- Prevention and management of Eclampsia.

- Chronic hypertension: management in pregnancy.

➤ **Lecture 6: Management of heart disease during pregnancy**

- Introduction, types and level of risk for maternal mortality.

- Pre-pregnancy counseling, contraindications for pregnancy and fetal risks.

- Management: antenatal, intrapartum and postnatal.

- Management of heart failure, ischemic heart disease, mitral and aortic stenosis and pulmonary hypertension.

➤ **Lecture 7: Management of common hematological problems during pregnancy**

- Anemia during pregnancy:

- Haemoglobinopathies:

• Sickle cell anemia.

• Thalassemia.

-Thrombocytopenia.

➤ **Lecture 8: Autoimmune disease and antiphospholipid syndrome.**

- Introduction.

- Systemic lupus erythematosus, clinical features, complication during pregnancy and their features.

- Antiphospholipid antibody syndrome, diagnostic criteria and effects on pregnancy and its management.

- Rheumatoid arthritis diagnostic criteria, effects on pregnancy and management.

➤ **Lecture 9: Other medical disorder during pregnancy.**

- Epilepsy.

- Asthma.

- Obstetric cholestasis.
- Specific dermatosis of pregnancy.
- Prurigo of pregnancy.
- Polymorphic eruption of pregnancy.
- Pemphigoid gestationis.

➤ **Lecture 10 : Renal function assessment and urinary tract disease**

- Pregnancy induced urinary tract changes.
- Assessment of renal function during pregnancy.
- Urinary tract infection.
- Brief outline of other condition that affect urinary tract and their significance during pregnancy.

➤ **Lecture11 : Surgical consideration during pregnancy**

- Maternal evaluation for surgical problems.
- Effect of surgery and anesthesia on pregnancy outcome.
- Acute abdominal pain, differential diagnosis.
- Management and obstetric outcome.

Module: Obstetric complication.

➤ **Lecture 1: Fetal death and amniotic fluid abnormalities**

- Intrauterine fetal death:
 - Causes of intrauterine fetal death.
 - Pathological anatomy.
 - Management: diagnosis, induction of labor, intrapartum management, management of coagulopathy.
 - Investigation for the fetus, mother, placenta.
 - Complication of intrauterine fetal death.
- Amniotic fluid disorder:
 - Oligohydramnios.
 - Polyhydramnios.
 - Abnormal amniotic fluid color.

➤ **Lecture 2: Intrauterine growth restriction**

- Incidence, Etiology, Phases of fetal growth.
- Classification of intrauterine growth restriction.
- Pathophysiology.
- Diagnosis and treatment.
- Complication and prognosis.

➤ **Lecture 3: ABO blood group and Rh-related disorder**

- ABO system, ABO iso-immunization, Rhesus blood group system.
- Rhesus iso-immunization.
- Etiology, pathophysiology and effect on fetus and mother.
- Screening and diagnosis.
- Management of Rh-negative women: sensitized and non-sensitized.
- Management of affected fetus and hydrops fetalis.

➤ **Lecture 4: Premature rupture of membranes and chorioamnionitis**

- Definition, incidence and etiology.
- Risk factors and complications.
- Diagnosis, management and prognosis.
- Chorioamnionitis and its complications.

➤ **Lecture 5: Preterm labor prevention and management**

- Definition, incidence, etiology and risk factors
- Screening, predictions of preterm labor and prevention
- Diagnosis and management
- Complication of preterm labor

➤ **Lecture 6: Post term pregnancy and post- maturity**

- Definition.
- Etiology.
- Physiological changes associated with post term pregnancy.
- Symptoms of post maturity.
- Management, complication.
- Prevention.

➤ **Lecture 7: Multiple pregnancy**

- Classification, etiology, prevalence and risk factors.
- Complication of twin delivery: ante-partum, intra-partum, post-partum complication and complication unique to the type.
- Diagnosis and differential diagnosis.
- Management.

Modules: Abnormal labor

➤ **Lecture 1: Indication of labor induction and its methods:**

- Indications for induction of labor.
- Learning the methods for induction of labor.
- Types of oxytocic drugs used for induction of labor.

➤ **Lecture 2: Poor progress of labor and cephalopelvic disproportion.**

- Poor progress of labor: risk factors, diagnosis and treatment.
- Cephalopelvic disproportion: diagnosis and management.

➤ **Lecture 3: Obstructed labor and shoulder dystocia.**

- Obstructed labor: causes, diagnosis, prevention and management.
- Shoulder dystocia: mechanism, risk factors, prevention and management.

Module: Post-partum haemorrhage and obstetric injuries

➤ **Lecture 1: Postpartum haemorrhage**

- Definition.
- Types:

Primary postpartum haemorrhage: causes, risk factors, diagnosis, investigation, treatment and prevention.

Secondary postpartum haemorrhage: definition, etiology, assessment, investigation and treatment.

➤ **Lecture 2: Obstetric shock, and major obstetric haemorrhage**

- Obstetric shock: definition, causes and types of shock, investigations, and specific treatment.

- Major obstetric haemorrhage: definition, causes of obstetrical haemorrhage, management and consequences of massive obstetric haemorrhage.

➤ **Lecture 3: Obstetric injuries**

- Causes.
- Clinical presentations.
- Management.

Module: Coagulation disorders in pregnancy

➤ **Lecture 1:**

- Venous thromboembolism.
- Amniotic fluid embolism.
- Disseminated intravascular coagulopathy.

Module: Common obstetric operative procedures

➤ **Lecture 1: Episiotomy and operative delivery**

- Episiotomy: indications, types, technique, complications.
- Operative vaginal delivery: indication, classification and safety criteria.
- Forceps and vacuum.
- Complications.

➤ **Lecture 2: Caesarean section:**

- Caesarean section definition, classification, indication.
- Procedure, preparations, type of incision and complication.
- Vaginal birth after caesarean section.

Module: Prenatal infection and diagnosis

➤ **Lecture 1: Prenatal infection.**

- Review of prenatal infections.
- Examples about important prenatal infections and their features.

➤ **Lecture 2: Prenatal diagnosis.**

- Definition and introduction to prenatal diagnosis
- Classification
- Important points about amniocentesis, chorionic villous sampling, and cordocentesis.
- Important points about screening and diagnosis of Down syndrome

Module: Miscellaneous subjects in obstetrics

➤ **Lecture 1: Newborn.**

- Definitions.
- Resuscitation of the newborn.
- Apgar score.
- Warning signs in well baby nursery.
- Common problems in the neonate, hypoglycemia, hypothermia.
- Perinatal asphyxia.

➤ **Lecture 2: Obstetric analgesia and anesthesia**

- Ideal pain relief in labor
- Labor pain in the first stage and second stage of labor
- Pain control:
 - Analgesia (non pharmacological and pharmacological)
 - Anesthesia (General anesthesia, Regional anesthesia, Regional block)

➤ **Lecture 3: Obstetric statistics.**

- Explanation of important statistical term related to obstetrics field

➤ **Lecture 4: Ultrasound examination in obstetrics.**

- Ultrasound features of pregnancy and important obstetrics complications.

Practical hours

- Obstetric history.
- Obstetric examination.
- Cases presentations and discussions.
- Tutorials.

Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Department of Medicine	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 4 th year	
Title of the course	Internal Medicine	
Code	MCMd405	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours=70	Total=205
	Theoretical hours=135	
Date of specification approval	12/11/2022	

General Aims of Course

The course aims to provide the students with the necessary knowledge regarding the common internal diseases and to gain basic clinical skills required for their diagnosis.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Understand common internal diseases. 2. Know the clinical and laboratory methods of diagnosing diseases. 3. Outline the treatment of common diseases
Intellectual Skills	<ol style="list-style-type: none"> 1. Interpret physical signs 2. Analyze clinical data
Professional Skills	<ol style="list-style-type: none"> 1. Take history properly 2. Perform perfect physical examination
General and Transferable Skills	<ol style="list-style-type: none"> 1. Diagnose common internal diseases 2. Perform life support measures
Attitude outcomes	<ol style="list-style-type: none"> 1. Recognize ethical problems and the way to deal with them

Course structure			
Topic	No. Of lectures	No. Of clinical hours	Lecturer
Cardiology	29	20	Dr. Jassem Mohamed Dr Thia Abd AlKadeer Dr. Arwa Mohmmod DR. Mohamed Abd hadi
Respiratory medicine	28	10	Dr. Rami Adel Dr. Alya Al Zobair
Endocrinology	21	10	Dr. Wael Thanoon Dr Mohamed Gazi
Gastroenterology and Hepatology	29	10	Dr. Abdullah Zuhair Dr. Mohamed Jassem
Nephrology	14	10	Dr. Mohamed Gazi Dr. Nassar Galib Dr. Salam Fareed
Infectious diseases	14	10	Dr Mohamed Harith Dr. Ahmed Mohamed

Teaching and learning methods	
Theoretical lectures	Teaching halls
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	Presentation in hospitals

Assessment methods	
Formative assessments	<ul style="list-style-type: none"> • Clinical • Quiz
Summative assessments	<ul style="list-style-type: none"> • Clinical 20 • Theoretical 80
Pass mark	50%

Resources and requirements	
Essential text books	<ul style="list-style-type: none"> • Davidsons Principle and practice of Medicine • Macleod's clinical examination
Recommended text books	<ul style="list-style-type: none"> • Hutchison's clinical examination • Harrison's
Other resources	Up to date and Medscape website

الرابط	التدريسي
https://drive.google.com/drive/folders/12SVHQaWw_aU3yQiD_g-BlbipGA7297UgB?usp=share_link	أ.م.د. جاسم محمد
https://drive.google.com/drive/folders/12RTMXcxph2BsRyw0nZFGHkaBuVhvHC9_?usp=share_link	أ.م.د. اروى محمود
https://drive.google.com/drive/folders/12YhtdwBgypdSAOxF9v09SkfWLOWfVPcV?usp=share_link	أ.م.د. رامي عادل
https://drive.google.com/drive/folders/12sm_5koJpe1U9R4PS2I_yEI-0tSM1Kbl?usp=share_link	د. وائل ذنون
https://drive.google.com/drive/folders/12sm7xUk8GJ2BP4rh1muFcei78knBCcuv?usp=share_link	د. محمد غازي
https://drive.google.com/drive/folders/12jLUiDUbnE-3SQMV-yX3Rkk0N9iYPF_8?usp=share_link	د. محمد جاسم
https://drive.google.com/drive/folders/12swM3L8Z7ZPQ1sEyHEwIJT8wqRWJRjXO?usp=share_link	ا.م.د. علياء عبدالعزيز
https://drive.google.com/drive/folders/115oR0cezlqQhPRSYxJvXGwtSwhOERTkf?usp=share_link	د. عبدالله زهير
https://drive.google.com/drive/folders/12X7eZhYfCJQSiA-QMxbY_sgLvKrueALO?usp=share_link	أ.م.د. ضياء الحمداني

Theoretical lectures

Module: cardiology

- **Lecture 1:** investigations of cardiovascular diseases
- **Lecture 2, 3:** electrocardiography (ECG)
- **Lecture 4- 6:** Cardiac arrhythmias
- **Lecture 7, 8:** heart failure
- **Lecture 9:** shock (acute circulatory failure)
- **Lecture 10- 12:** Hypertension
- **Lecture 13,14:** Coronary artery diseases
- **Lecture 15:** Rheumatic fever
- **Lecture 16-18:** Valvular heart disease
- **Lecture 19, 20:** Infective endocarditis
- **Lecture 21- 23:** Congenital heart disease
- **Lecture 24, 25:** Diseases of the myocardium
- **Lecture 26, 27:** Diseases of the pericardium
- **Lecture 28:** Diseases of the aorta
- **Lecture 29:** Peripheral vascular disease

Module: Endocrinology

- **Lecture 1-4:** Diabetes mellitus
- **Lecture 5, 6:** Acute complications of diabetes mellitus
- **Lecture 7,8:** Chronic complications of diabetes mellitus
- **Lecture 9-11:** Diseases of the thyroid gland
- **Lecture 12,13:** Diseases of the pituitary gland
- **Lecture 14,15:** Diseases of the adrenal gland
- **Lecture 16:** Osteoporosis
- **Lecture 17:** lipid Disorders
- **Lecture 18,19:** Hypogonadism in Male
- **Lecture 20, 21:** Diseases of the parathyroid gland

Module: Gastroenterology and Hepatology

- **Lecture 1, 2:** Investigations of gastrointestinal diseases
- **Lecture 3, 4:** esophagus the of Diseases
- **Lecture 5:** Acute and chronic gastritis
- **Lecture 6,7:** Tumours of the oesophagus and stomach
- **Lecture 8, 9:** Peptic ulcer disease
- **Lecture 10, 11:** Malabsorption syndrome
- **Lecture 12, 13:** Other diseases of the small intestine
- **Lecture 14:** Irritable bowel syndrome
- **Lecture 15, 16:** Inflammatory bowel disease
- **Lecture 17,18:** Tumours of the colon and rectum
- **Lecture 19, 20:** Investigations of hepatobiliary disease
- **Lecture 21, 22:** Acute liver disease
- **Lecture 23-25:** Chronic liver disease and portal hypertension

- **Lecture 26:** upper gastrointestinal bleeding
- **Lecture 27-29:** Diseases of the pancreas

Module: Respiratory medicine

- **Lecture 1:** Investigations of respiratory diseases
- **Lecture 2, 3:** Asthma
- **Lecture 4, 5:** COPD
- **Lecture 6, 7:** fibrosis cystic and Bronchiectasis
- **Lecture 8:** URTI, pertussis and influenza
- **Lecture 9, 10:** Community acquired pneumonia
- **Lecture 11, 12:** Hospital-acquired pneumonia and lung abscess
- **Lecture 13-15:** Tuberculosis
- **Lecture 16, 17:** Lung cancer
- **Lecture 18, 19:** Pulmonary
- **Lecture 20, 21:** Pleural effusion and empyema
- **Lecture 22 :** Pneumothorax
- **Lecture 23, 24:** Interstitial lung disease (IPF and sarcoidosis)
- **Lecture 25, 26:** Respiratory failure
- **Lecture 27, 28:** OSA and ARDS

Module: Nephrology

- **Lecture 1:** Investigations of renal disease
- **Lecture 2, 3:** Acute kidney injury
- **Lecture 4, 5:** Chronic kidney disease
- **Lecture 6 :** Renal replacement therapy
- **Lecture 7-9 :** Glomerulonephritis
- **Lecture 10:** Renal vascular diseases
- **Lecture 11:** Interstitial nephritis
- **Lecture 12:** Renal cystic disease
- **Lecture 13, 14:** Infection of the kidneys and urinary tract

Module: Infectious diseases

- **Lecture 1:** Streptococcal infections
- **Lecture 2:** Staphylococcal infections
- **Lecture 3:** Typhoid and paratyphoid fever
- **Lecture 4:** Brucellosis
- **Lecture 5:** Sepsis
- **Lecture 6, 7:** Acute infective diarrhea
- **Lecture 8:** Tetanus
- **Lecture 9, 10:** Covid -19
- **Lecture 11-13:** HIV infections and AIDS
- **Lecture 14:** Monkey pox

Practical hours

- Review of history taking
- Review of general examination
- Review of systemic examination
 - Cardiovascular system
 - Respiratory system
 - Abdomen examination
- Neurological history
- Neurological examination
- Long cases discussion in all systems

Surgery

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/college	University of Mosul / Mosul College of Medicine	
Department offering the course	Surgery	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023 / 4 th year	
Title of the course	Surgery	
Code	MCSu406	
Links	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 60	Total= 150 hours
	Theoretical hours= 90 hours	
Date of specification approval	1 / 10 / 2021	

General Aims of Course

The course describes the basic knowledge of Surgery and its departments to the medical students in order to build the clinical knowledge and clinical skills in the next years in diagnosis and treatment of the different surgical diseases including the emergent conditions, so optimize the medical services to the society.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Identify the advanced knowledge of Surgery. 2. Identify the advanced knowledge of departments of Surgery. 3. Identify the advanced Skills of the clinical examination.
Intellectual Skills	<ol style="list-style-type: none"> 1. Realize the best method of taking the Medical history. 2. Realize the best method of the clinical examination.
Professional Skills	Clinical examination of abdomen
General and Transferable Skills	<ol style="list-style-type: none"> 1. Recognize the basic knowledge of Surgery and it's departments and how will cooperate with clinical skills
Attitude outcomes	<ol style="list-style-type: none"> 1. Recognize any ethical problems in relation to the topics and act accordingly. 2. Recognize the importance of respect of the patient's dignity and privacy.

Lecturer	No. of lecture / year	Hours of Clinical Session / Course
Samir Ibrahim Al – Safaar	6	3
Nashwan Mahgobb	4	3
Karm Kamal	10	3
Firas Mahmmmod	10	3
Khalf Rashid	10	3
Abdulsalam Thanon	4	2
Zaid Shanshal	8	5

Oidy Hanii	4	2
Mohammed Atallah	8	5
Ali Hasan	6	5
Omer Saad	8	5
Zaid Saadaldeen	4	2
Numan Hadii	4	2
Ashraf Ibrahim	4	2
Mohanad Adndn Bakr		5
Sahar Habeeb		2
Muthana Abdulrazaq		2
Zaid Tarq		2
Mohammed Ayad		2
Basam Khalid		2

Teaching and learning methods	
Theoretical lectures	
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	The students are divided into small groups to do seminars

Assessment methods	
Formative assessments	<ul style="list-style-type: none"> • 20 % Clinical examination • 20% Written examination(Essay & MCQ systems)
Summative assessments	<ul style="list-style-type: none"> • 60% Written examination (Essay & MCQ systems)
Pass mark	50%

Resources and requirements	
Essential text books	Baily and Love's Textbook / Short Practice of Surgery
Recommended text books	Brows Textbook of Clinical examination
Other resources	Nil

Theoretical lectures

Module: general surgery

- **Lecture 1, 2:** Salivary glands
 - Surgical anatomy, physiology
 - Developmental disorders
 - Non-neoplastic diseases Calculi and Infections
 - Autoimmune & degenerative diseases
 - Neoplasms: pathology Diagnosis, & treatment
 - Parotidectomy complications
- **Lecture 3,4 :** Neck surgery
 - Cervical lymph nodes anatomy
 - Cervical lymphadenopathy: cause, approach
 - Acute cervical lymphadenopathy
 - Chronic non-specific cervical lymphadenopathy
 - Chronic specific cervical lymphadenopathy (tb -lymphadenitis)
 - Malignant cervical lymphadenopathy
 - Neck dissection
 - Neck lumps
 - Thyroglossal cysts
 - Cystic hygromas
 - Branchial cysts and fistula
 - Carotid body tumors
 - Neck trauma
- **Lecture 5,6:** Surgery of the tongue
 - Anatomy
 - Carcinoma of tongue: etiology ,pre-cancerous conditions, pathological types, presentations ,complications & management
- **Lecture 7-10:** thyroid gland
 - Anatomy & physiology of thyroid
 - Euthyroid
 - Investigations of thyroid disorders
 - Hypothyroidism
 - Goiter classification
 - Toxic goiter
 - Treatments: medical treatment & surgery with complications
 - Thyroiditis
 - Solitary thyroid nodule: differential diagnosis & management
 - Thyroid neoplasms
- **Lecture 11,12:** Parathyroid gland
 - Anatomy & physiology of calcium metabolism
 - Hyperparathyroidism (types: primary, secondary, tertiary)
 - Management
 - Hypoparathyroidism (causes, diagnosis, management)
- **Lecture 13,14:** Hand infections & diabetic foot
 - Types & classification (paronychia, felon, apical, pulp, flexor tendon sheath infection, ,web, palmar, tenosynovitis,)
 - Features & general principles of treatment
- **Lecture 15-17:** esophagus

- Background (anatomy & physiology)
- Congenital abnormalities
- Foreign bodies in the oesophagus
- Perforation
- Mallory—weiss syndrome
- Corrosive injury
- Gastro-oesophageal reflux disease
- Paraoesophageal (rolling) hiatus hernia
- Neoplasms of the oesophagus
- Motility disorders and diverticula
- Other non-neoplastic conditions
- **Lecture 18-20: liver**
- Anatomy & physiology
- Investigations
- Traumas
- Infections of liver:
- Pyogenic abscess, Amebic abscess, Hydatid cysts
- Tumours of liver Benign and Malignant
- **Lecture 21,22: biliary surgery**
- Anatomy & physiology
- Congenital anomalies & variations
- Gall stones
- cholecystitis
- Post cholecystectomy syndromes
- Obstructive jaundice
- **Lecture 23,24: spleen**
- Anatomy & physiology
- Congenital abnormalities
- Rupture of spleen
- Splenomegaly
- Splenectomy
- **Lecture 25-27: pancreas**
- Anatomy & physiology
- Congenital anomalies
- Injuries
- Acute pancreatitis
- Chronic pancreatitis
- Tumors
- **Lecture 28-30: stomach & duodenum**
- Surgical anatomy & physiology
- Investigations
- Acute gastric dilatation
- Peptic ulcer diseases
- Gastric neoplasms
- **Lecture 31, 32: Upper GIT bleeding**
- **Lecture 33,34: Portal hypertension**
- **Lecture 35,36: diseases of abdominal wall**
- **Lecture 37,38: hernias**
- General principles
- Strangulated hernias

- Anatomy of inguinal canal & spermatic cord
- Inguinal hernia(direct & indirect)
- Femoral
- Epigastric
- Paraumbilical
- incisional
- **Lecture 39, 40:** Peritoneum, omentum & mesentery
 - Peritonitis
 - Generalized
 - Localized: intraperitoneal abscesses ,iliac abscess, pelvic abscess &,subphrenic abscess
 - Special forms: t.b peritonitis
 - mesenteric neoplasms or cysts
 - acute nonspecific ileocecal mesenteric lymphadenitis
- **Lecture 41-44:** small bowel
 - Anatomy & physiology
 - Investigations
 - Preoperative bowel preparations
 - Intestinal stomas
 - Intestinal trauma
 - Intestinal fistulas
 - Meckels diverticulum
- **Lecture 45, 46:** Intestinal obstruction
 - Aetiology, pathology, Diagnosis
 - Acute mechanical obstruction
 - Adhesive
 - Strangulated hernia
 - Volvulus
 - Paralytic ileus
- **Lecture 47, 48:** Vermiform appendix
 - Anatomy
 - Acute appendicitis Etiology,pathology Diagnosis,differential diagnosis ,treatment& complications(appendix mass &abscess)
 - Recurrent acute appendicitis
 - Appendectomy indications,post op. care& complications
 - Appendix Tumors
- **Lecture 49, 50:** colon and rectum
 - Vascular anomalies angiodysplasia
 - Diverticular disease of colon
 - Inflammatory bowel diseases
 - Tb & typhoid fever
 - Intestinal ischemia
 - Colorectal tumours
 - Rectum anatomy
 - Rectal prolapse
 - Proctitis
 - Solitary rectal ulcer syndrome
 - Rectal cancer
- **Lecture 51-53:** anal canal
 - Anatomy & physiology

- Pruritus ani
- Pilonidal sinus
- Anal fissure
- Hemorrhoids
- Anorectal abscess
- Anal fistulae
- Nonmalignant strictures
- Malignant Anal tumours
- **Lecture 54-56: the breast**
- Surgical anatomy, blood supply & lymphatic drainage
- Physiology
- Congenital anomalies
- Trauma, hematoma & fat necrosis
- Inflammations: Acute mastitis & breast abscesses
- Ductectasia & mamillary fistulae
- And- fibrocystic disease
- Cysts of breast acinar & interacinar
- Nipple disorders
- Breast tumours
- **Lecture 57, 58: Surgical endocrinology**
- Pituitary
- Thymus
- Adrenal glands
- **Lecture 59, 60: Principales of bariatric surgery**

Module: urology

- **Lecture 1:** Introduction symptomatology and investigations
- Symptoms of urinary tract diseases.
- Signs of urinary tract diseases.
- Investigations.
- **Lecture 2,3:** Congenital anomalies of the upper urinary tract
- Unilateral Renal Agenesis.
- Supernumerary Kidney.
- Simple Renal Ectopia.
- Horseshoe Kidney.
- Cystic disease of the kidneys.
- Congenital Anomalies of Renal pelvis & Ureter.
- Ureteroceles.
- Ureteropelvic Junction Obstruction (stenosis).
- **Lecture 4-6:** Surgical infections of the urinary tract
- Non specific acute infection.
- Acute pyelonephritis.
- Pyonephrosis.
- Renal Abscess or Renal Carbuncle.
- Renal Abscess or Renal Carbuncle.
- Xanthogranulomatous Pyelonephritis.
- Prostatitis

- Specific infections of the urinary tract
Renal Tuberculosis- Bilharziasis
- **Lecture 7-9: Urinary stone diseases**
 - Renal stones
 - Ureteric stones.
 - Vesical stones.
 - Urethral stones.
- **Lecture 10-12: upper urinary tract injuries**
 - Renal injuries
 - Ureteric injuries.
- **Lecture 13-15: Renal tumors**
 - Benign renal tumors:
 - Angiomyolipoma (Renal Hamartoma).
 - Renal Adenoma.
 - Renal Oncocytoma
 - Malignant renal tumors:
 - 1ry renal tumors
 - Adenocarcinoma of the Kidney
 - Transitional cell carcinoma
 - Wilm's tumour
 - 2ry tumors
- **Lecture 16, 17: Hydronephrosis**
 - Causes of unilateral ureteric obstruction.
 - Causes of bilateral hydronephrosis.
 - Ureteric dilatation in pregnancy.
- **Lecture 18,19: Vesicoureteral reflux**
 - Introduction – Epidemiology – Types – Causes – Presentation – Investigations – treatment – Complications.
- **Lecture 20,: Bladder and urethral injuries**
 - Bladder injuries
 - Urethral injuries
 - Other types of genital trauma.
- **Lecture 21: Bladder tumors**
 - Transitional cell carcinomas
 - Squamous cell carcinoma
 - Adenocarcinoma
- **Lecture 22: Benign Prostatic Hyperplasia**
 - Anatomy – etiology – epidemiology – pathology - presentation – investigations – treatment – complications.
- **Lecture 23: Prostatic Carcinoma**
 - Etiology – epidemiology – pathology - presentation – investigations – treatment.
- **Lecture 24: Neurogenic bladder**
 - Anatomy – physiology – Classification – presentation – investigations – treatment – complications.
- **Lecture 25: Congenital Anomalies of lower urinary system**
 - Hypospadias
 - Epispadias.
 - Bladder Extrophy (Ectopia Vesicae).

- Posterior urethral valve.
- Urethral stricture.
- Phimosis.
- Paraphimosis.
- **Lecture 26: Scrotal Pathologies**
 - Anatomy
 - Incompletely descended testis (cryptorchidism, undescended testis).
 - Ectopic testes.
 - Injuries to the testes.
 - Absent testes.
 - Torsion of the testis.
 - Varicocele.
 - Hydrocele.
 - Epididymal cysts.
 - Spermatocele
 - Epididymo-orchitis
 - Tumours of the testes.
 - Idiopathic scrotal gangrene- necrotizing fasciitis
- **Lecture 27: Surgical aspect of male infertility**
 - Male reproductive physiology – Epidemiology – causes –evaluation – investigations – treatment - Assisted reproductive technologies.
- **Lecture 28: Urinary Diversion**
 - Indications: Temporary or Permanent.
 - Methods of urinary diversion.
 - Complication of Urinary Diversion
- **Lecture 29,30: Renal transplantation**
 - Renal Failure – causes – clinical features.
 - Renal transplantation – patient evaluation.
 - Types of donors for renal transplantation.
 - Contraindications for renal donation.
 - Extracorporeal renal preservation.
 - Investigations & HLA tissue matching.
 - Types of rejection.
 - Complications of renal transplantation.

Practical hours

General Surgery

- Routine surgical work
 - Student-staff-patient relation
 - Introduction to formal long case history taking
 - Introduction to focused History taking :
- **Focused history**
- Neurosurgical history (Patients with head injury)
 - Patients with abdominal pain (acute abd., appendicitis)
 - Patients with surgical jaundice
 - Patients with lumps.-ulcers.
 - Patients with post-operative fever
 - Patients with abd. Distension
 - Patients with peri anal pain ,bleeding ,lumps
 - Patients with leg pain-ischemic limb
 - Patients with goiter, neck lump
 - Patients with dysphagia
 - Patients with breast mass-nipple discharge
 - Patients with upper and lower GIT bleeding
 - Patients with groin lump
 - Patients with swollen leg
 - Urological history (loin pain /renal ureteric colic, hematuria, retention of urine)
 - Orthopedic history
- **Communication skills**
- **Informed consent in surgical patients**
- **Basic Skills of physical examination**
- Pulse examination
 - Blood pressure examination
 - Signs of anemia
 - Signs of dehydration
 - Signs of cyanosis
 - Signs of jaundice
 - Level of consciousness
 - Post-operative confusion, fever
 - Lumps
 - Cervical lymph nodes
 - Thyroid examination
 - Cystic hygroma

- Examination of other neck masses (parotid ,submandibular)
- Carotid artery pulsations and carotid body tumor
- Position of trachea
 - Skills of physical examination of head & neck
- Chest deformity description
- Chest expansion
- Signs of pneumothorax
- Signs of pleural effusion
- Heart sounds and position of apex beat
- Breast examination
 - Physical examination of the chest
- Inspection for hernia orifices and cough impulse
- Surgical incisions
- Inspection of diversion of the recti
- Stomas and colostomies
- Palpate for hepatomegaly and how to measure liver span
- Palpate for splenomegaly
- Palpate for kidneys
- How to differentiate between spleen left /kidney masses
- Examine for ascites
- Palpate for abdominal aorta
- Signs of hernia
- Inguinal masses
- Examination of genitalia
 - Physical examination of abdomen and genitalia
- Ulcers
- Describe shape and deformity
- Signs of chronic ischemia
- Peripheral pulsations
- Examination for foot ulcers
- Examination for superficial and deep sensations
- Examination for muscle power muscle tone ,and reflexes

- Examination for amputations
- Signs of DVT
- Signs of varicose veins
 - Physical examination of lower limbs
- Types of skin incisions
- Describe colostomy (stoma)
- Describe drains
- Physical examination for post operation patient
- General and local abdominal examination
- Evaluation of acute abdomen
- Evaluation of head injury
- Examination of kidneys, scrotal exam haematocele, testicular masses, epidermal cyst, urological conditions
- Orthopedic examination of limbs

Pediatrics

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

General Aims of Course

This course introduces students to the science of pediatrics and focuses on normal child development and growth.

Educational Institution/ college	CMUM	
Department offering the course	PEDIATRICS	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023 / 4 th YEAR	
Title of the course	PEDIATRICS	
Code	MCPe407	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 0	Total=15
	Theoretical hours= 15	
Date of specification approval	1/9/2022	

Topic	No. Of lectures	Lecturer
Normal child growth and development, and behavioural disorders	4	Dr. Farah Samir Yahya
Genetics and inborn error of metabolism	4	Dr. Noor Buraq
Child nutrition, rickets and failure to thrive	4	Dr. Nawar Yahya
Basic and advanced life support Allergy and anaphylaxis	2	Dr. Noor Sameer
Pediatric history and examination	1	Dr. Noor Sameer

Teaching and learning methods	
Theoretical lectures	

Assessment methods	
Formative assessments	1. Google classroom quiz upon each system completion
Summative assessments	1. Theoretical Mid-year exam (40%) 2. Theoretical end-of-year exam (60%)
Pass mark	50%

Resources and requirements	
Essential text books	Nelson essentials of pediatrics (eighth edition) 2018
Recommended text books	1. Illustrated textbook of Paediatrics (sixth edition) 2022 2. Nelson textbook of pediatrics (21th edition)
Other resources	NICE guidelines, ROME IV Criteria, Ispad guidelines 2022

Theoretical lectures

- **Lecture 1-4:** Normal child growth and development, and behavioral disorders
- **Lecture 5-8:** Genetics and inborn error of metabolism
- **Lecture 9-12:** Child nutrition, rickets and failure to thrive
- **Lecture 13:** Basic and advanced life support
- **Lecture 14:** Allergy and anaphylaxis
- **Lecture 15:** Pediatric history and examination

منهاج المرحلة الخامسة

**FIFTH YEAR
CURRICULUM**

توزيع الوحدات والساعات للمرحلة الخامسة						
ت	المواد الدراسية	عدد الساعات النظرية	عدد الساعات السريرية	عدد الوحدات النظرية	عدد الوحدات السريرية	مجموع عدد الوحدات
١	الطب الباطني	٧٥	٣٠	٥	١	٦
٢	الامراض النفسية	٤٥	٣٠	٣	١	٤
٣	الامراض الجلدية	٣٠	٣٠	٢	١	٣
٤	الجراحة	٩٠	٦٠	٦	٢	٨
٥	طب وجراحة العيون	٣٠	٣٠	٢	١	٣
٦	طب وجراحة الاذن و الانف و الحنجرة	٣٠	٣٠	٢	١	٣
٧	طب الاطفال	٦٠	٦٠	٤	٢	٦
٨	النسائية	٦٠	٦٠	٤	٢	٦
٩	الاشعة	٣٠	٣٠	٢	١	٣
١٠	طب الاسرة	١٥	٣٠	١	١	٢
	المجموع	٤٦٥	٣٩٠	٣١	١٣	٤٤

FIFTH YEAR UNITS AND HOURS DISTRIBUTION						
	Scholastic subjects	Theoretical hours	Clinical hours	Theoretical units	Clinical units	Total units
1	Medicine	75	30	5	1	6
2	Psychiatry	45	30	3	1	4
3	Dermatology	30	30	2	1	3
4	Surgery	90	60	6	2	8
5	Ophthalmology	30	30	2	1	3
6	ENT	30	30	2	1	3
7	Pediatrics	60	60	4	2	6
8	Gynecology	60	60	4	2	6
9	Radiology	30	30	2	1	3
10	Family medicine	15	30	1	1	2
	Total	465	390	31	13	44

Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Department of Medicine	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 5 th year	
Title of the course	Internal Medicine	
Code	MCMd501	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 30	Total=105
	Theoretical hours=75	
Date of specification approval	12/11/2022	

General Aims of Course

The course aims to train students of the fifth stage how to diagnose and treat internal Medicine diseases clinically in the fields of (Hematology, Rheumatology and Neurology).

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Aware of internal diseases. 2. Know about diseases of blood, nervous system and musculoskeletal system. 3. Know the clinical and lab methods of diagnosing diseases that involve these systems.
Intellectual Skills	<ol style="list-style-type: none"> 1. Analyze physical signs. 2. Interpret clinical data.
Professional Skills	<ol style="list-style-type: none"> 1. Take history correctly 2. Do thorough neurological exam 3. Examine specific joints appropriately 4. Approach patients with blood disorders
General and Transferable Skills	<ol style="list-style-type: none"> 1. Identify common neurological, hematological and rheumatologic disease. 2. Select the appropriate investigations to deal with these diseases.
Attitude outcomes	Recognize ethical problem and know how to deal with them.

Course structure			
Topic	No. Of lectures	No. Of clinical sessions	Lecturer
Haematology	16	8	Dr Khlid Al keroo Dr. Alya Al Zobair Dr. Ahmed Mohamed
Neurology	27	12	Dr. Yahya Qaseem Dr Omer Abd Al moneam
Rheumatology	13	6	Dr. Fakher Yousif Dr. Ali Abd Rahman Dr Zahraa Amer Dr. Sara Hamed
Medical Rehabilitation	5	2	Dr Zahraa Amer
Clinical pharmacology	14	0	Dr. Rami Adel Dr Khlid Al keroo Dr. Alya Al Zobair

Teaching and learning methods	
Theoretical lectures	Teaching halls
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	Presentation in hospitals

Assessment methods	
Formative assessments	1. Clinical 2. Quiz
Summative assessments	1. Clinical 20 2. Theoretical 80
Pass mark	50%

Resources and requirements	
Essential text books	1. 1. Davidsons Principle and practice of Medicine 2. Macleod's clinical examination
Recommended text books	1. Hoffbrand essential of Clinical haematology.
Other resources	Up to date and Medscape website

الرابط	التدريسي
https://drive.google.com/drive/folders/110rfkvjnbxr5es5_eBCyRb5C764XBKwa?usp=share_link	ا.د. خالد نافع
https://drive.google.com/drive/folders/10X2Gbg8iY6CdPhFY9Wr15EZ8arMvtgPi?usp=share_link	ا.د. فاخر يوسف
https://drive.google.com/drive/folders/11q0xUSyL015wazZPJg3jA8_Ibc66nFhA?usp=share_link	د. يحيى
https://drive.google.com/drive/folders/11DtT-y5J3v25_FMgZKg0FxmY15D9B-zm?usp=share_link	د. عمر
https://drive.google.com/drive/folders/11qvr6NMXDEjJAQd-fgEhKIqymeZO3b_1?usp=share_link	أ.م.د. علي عبدالرحمن
https://drive.google.com/drive/folders/10ixpYREsJQ118Ji mJxpzEJkSa8ZfbZ_i?usp=share_link	د. زهراء عامر
https://drive.google.com/drive/folders/124vEXhZ6qlcddB8QA2B5fEe0dzp3JCAW?usp=share_link	د. احمد محمد

Theoretical lectures

Module: Haematology

- **Lecture 1:** Introduction to haematology
- **Lecture 2:** Iron deficiency anaemia
- **Lecture 3-5:** Haemolytic anaemia
- **Lecture 6,7:** Acute leukaemia
- **Lecture 8:** Myelodysplastic syndrome
- **Lecture 9:** Chronic leukaemia
- **Lecture 10:** Megaloblastic anaemia
- **A Lecture 11:** Aplastic anaemia
- **Lecture 12.13:** Lymphoma
- **Lecture 14:** Multiple myeloma
- **Lecture 15:** Polcythaemia vera and myelofibrosis
- **Lecture 16.17:** Bleeding disorders

Module: Neurology

- **Lecture 1,2:** Introduction to neurology
- **Lecture 3,4:** Headache
- **Lecture 5-7:** Stroke
- **Lecture 8,9:** Space occupying lesion (SOL)
- **Lecture 10-12:** Epilepsy
- **Lecture 13-15:** CNS infections
- **Lecture 16,17:** Multiple sclerosis
- **Lecture 18,19:** Degenerative diseases
- **Lecture 20,21:** Parkinson's disease
- **Lecture 22,23:** Peripheral neuropathy
- **Lecture 24,25:** Spinal cord diseases
- **Lecture 26:** Coma
- **Lecture 27:** Vertigo
- **Lecture 28,29:** Muscle diseases and myasthenia graves

Module: Rheumatology

- **Lecture 1:** Introduction to rheumatology
- **Lecture 2,3:** Rheumatoid arthritis
- **Lecture 4,5:** Seronegative spondarthritis
- **Lecture 6:** Osteoarthritis
- **Lecture 7:** Systemic lupus erythematosus (SLE)
- **Lecture 8:** Systemic sclerosis
- **Lecture 9:** Mixed connective tissue disease and myositis
- **Lecture 10:** Systemic vasculitis
- **Lecture 11:** Behçet's syndrome and Sjogren's syndrome
- **Lecture 12:** Crystal induced arthritis

Module: Medical rehabilitation

- **Lecture 1:** Physical modalities
- **Lecture 2:** Therapeutic exercises
- **Lecture 3:** Orthoses and prostheses
- **Lecture 4:** Adaptation for activities and daily living
- **Lecture 5:** Gait aids and gait patterns

Module: Clinical pharmacology (therapeutics)

- **Lecture 1,2:** Cytotoxic drugs
- **Lecture 3,4:** Principles of antibiotic therapy
- **Lecture 5:** Antihyperlipidaemic drugs
- **Lecture 6, 7:** Antiplatelet, anticoagulant and thrombolytics
- **Lecture 8:** Drug poisoning
- **Lecture 9:** Antihypertensive drugs
- **Lecture 10:** Antirheumatic drugs
- **Lecture 11:** Drugs in respiratory diseases
- **Lecture 12:** Oxygen and ventilator therapy
- **Lecture 13:** Blood transfusion

Practical hours

Practical hours/ Haematology

Introduction and general advice

➤ History taking

- Patient profile, chief complaint, history of present illness,
- past history, drug history, family history, social history, dietary history.
- Review of systems, cardiovascular, respiratory, GIT, GUT

➤ General examination

- General look
- Anemia, jaundice, cyanosis, polycythemia, tremor, nail abnormalities, edema, purpura, bleeding, lymph node examination.
- Vital signs

➤ Abdominal examination

- Inspection of the abdomen
- Palpation of abdomen
- Examination of ascites
- Examination for Hepatomegaly, splenomegaly
- Auscultation of abdomen

➤ Cardiovascular examination

- Inspection of the precordium
- Palpation of the precordium
- Cardiac auscultation

➤ Respiratory examination

- Inspection of chest
- Palpation of chest
- Percussion of chest
- Auscultation of chest

Practical hours/ Rheumatology

Introduction and general advices

➤ History taking in rheumatology

- Patient profile, chief complaint, history of present illness

- Past history, drug history, family history, and social history
- Review of systems
- Musculoskeletal examination
 - Examination of shoulder
 - Examination of elbow
 - Examination of hand and wrist
 - Examination of hip
 - Examination of knee
 - Examination of ankle and foot
 - Examination of spine
- Rheumatologic case demonstration (rheumatoid arthritis, SLE, systemic sclerosis, vasculitis)

Psychiatry

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/college	CMUM	
Department offering the course	Department of Medicine	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 /5 th year	
Title of the course	Psychiatry	
Code	MCMd501	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 30	Total=75
	Theoretical hours=45	
Date of specification approval	12/11/2022	

General Aims of Course

The course aims to teach psychiatry to students of the fifth stage in the Faculty of Medicine in both the theoretical and practical aspects, where the student is familiar with the science of psychiatry and its classifications.

The course also aims at educating students about the complications of treatments and prognosis of the disease and enables them to diagnose and treat common and emergency cases in hospitals and outpatient clinics in proper manner.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Understand the subject of psychiatry2. Know the types of mental illness3. Know the clinical methods of diagnosing mental illness4. Know the drugs that are used in the treatment of mental illnesses and their complications5. Understand the mechanisms of mental illness and ways to prevent the development of the disease and its complications
Intellectual Skills	<ol style="list-style-type: none">1. Solve the mental problems in the field of clinical work2. Conduct clinical and laboratory examinations related to mental illness3. Use simple psychological devices in treating common diseases
Professional Skills	<ol style="list-style-type: none">1. Arrange scientific approach to patients with psychiatric illnesses.2. Manage psychiatric emergencies.
General and Transferable Skills	<ol style="list-style-type: none">1. Participate in continuous medical education program
Attitude outcomes	Recognize ethical problem and know how to deal with them.

Course structure			
Topic	No. Of lectures	No. Of clinical hours	Lecturer
Introduction, classification and etiology	2	30	د صفة أديب
Neurodevelopmental Disorders	2		د صفة أديب
Schizophrenia Spectrum and Other Psychotic Disorders	2		د صفة أديب
Bipolar and Related Disorders	2		د صفة أديب
Depressive Disorders	3		د صفة أديب
Anxiety Disorders	3		د صفة أديب
Obsessive-Compulsive and Related Disorders	3		د صفة أديب
Trauma- and Stressor-Related Disorders	2		د صفة أديب
Dissociative Disorders	1		د صفة أديب
Somatic Symptom and Related Disorders	1		د صفة أديب
Feeding and Eating Disorders	1		د صفة أديب
Elimination Disorders	1		د صفة أديب
Sleep-Wake Disorders	1		د صفة أديب
Sexual Dysfunctions	1		د صفة أديب
Gender Dysphoria	1		د صفة أديب
Disruptive, Impulse-Control, and Conduct Disorders	1		د صفة أديب
Substance-Related and Addictive Disorders	3		د صفة أديب
Neurocognitive Disorders	2		د صفة أديب
Personality Disorders	1		د صفة أديب
Paraphilic Disorders	1		د صفة أديب
Child psychiatry	1		د صفة أديب
Forensic psychiatry	1		د صفة أديب
Old age psychiatry	1		د صفة أديب
Suicide and deliberate self-harm	1		د صفة أديب
Women psychiatry	1		د صفة أديب
Global psychiatry	1		د صفة أديب
Psychological treatment	2	د صفة أديب	
Drugs and other physical treatment	3	د صفة أديب	

Teaching and learning methods	
Theoretical lectures	Teaching halls
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	Presentation in hospitals

Assessment methods	
Formative assessments	1. Clinical 2. Quiz
Summative assessments	1. Clinical 20 2. Theoretical 80
Pass mark	50%

Resources and requirements	
Essential text books	1. Shorter Oxford Textbook of Psychiatry seventh edition
Other resources	Up to date and Medscape website

الرابط	التدريسي
https://drive.google.com/drive/folders/12PGTXoSKZl_ndnEjGS7CaW0gmADnOOY9?usp=share_link	د. صفية

Theoretical lectures

- **Lecture 1,2:** Introduction
- **Lecture 3,4:** Aetiology of psychiatric disease
- **Lecture 5:** Anxiety disorder
- **Lecture 6:** Phobia and panic
- **Lecture 7:** Obsessive compulsive neurosis
- **Lecture 8:** Dissociation disorder
- **Lecture 9:** Somatoform disorder
- **Lecture 10-13:** Treatment in psychiatry
- **Lecture 14-16:** Mood disorder
- **Lecture 17-20:** Schizophrenia and related disorders
- **Lecture 21:** Sleep disorders
- **Lecture 22:** Eating disorders
- **Lecture 23:** Personality disorders
- **Lecture 24:** Deliberate self-harm
- **Lecture 25:** Factitious disorders and malingering
- **Lecture 26:** Liaison psychiatry
- **Lecture 27-28:** Women psychiatry
- **Lecture 29-30:** Child psychiatry
- **Lecture 31-32:** Mental retardation
- **Lecture 33:** Adolescent psychiatry
- **Lecture 34-37:** Cognitive disorder
- **Lecture 38:** Old age psychiatry
- **Lecture 39,40:** Substance abuse
- **Lecture 41,42:** Psycho-sexual disorder
- **Lecture 43,44:** Social treatment and prevention
- **Lecture 45:** Forensic psychiatry

Practical hours

- History taking in psychiatry involving risk assessment.
- Clinical examination in psychiatry (mental state exam in addition to physical and neurological examination).
- Mental State Examination, which include:
 - General appearance and behavior.
 - Examination of speech.
 - Examination of mood and affect.
 - Examination of thinking (thought process and content).
 - Examination of perception.
 - Cognitive function examination.
 - Examination of insight.

Dermatology

Course Description

This course description provides a brief summary of the most important characteristics of the course and lists the learning outcomes expected of the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Department of Medicine	
Name of Academic Program	MBChB	
Academic Year/Level	2022-2023 / 5 th year	
Title of the course	Dermatology and venereology	
Code	MCMd503	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours=30	Total=60
	Theoretical hours=30	
Date of specification approval	1/11/2022	

General Aims of Course

The course aims to teach dermatology and venereology to students of the fifth stage in the Faculty of Medicine in both its theoretical and practical aspects.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Understand the subject of dermatology and venereology.2. Know the types of skin and venereal diseases.3. Know the clinical and laboratory methods of diagnosing dermatology.4. Know the topical and systemic treatments that are used in the treatment of skin diseases and their complications.5. Understand the pathogenesis of skin diseases and ways to prevent the development of the disease and its complications.
Intellectual Skills	<ol style="list-style-type: none">1. Know how to reach a clinical diagnosis2. Know how to differentiate between similar skin diseases.3. Know how to use the best treatment according to the patient's condition4. Predict the prognosis of the disease
Professional Skills	<ol style="list-style-type: none">1. Discriminate dermatological emergencies.2. Conduct clinical and laboratory examinations related to skin diseases.3. Use simple skin devices in treating common diseases.
General and Transferable Skills	<ul style="list-style-type: none">- Prepare a doctor who can diagnose common skin diseases and treat them safely.- Graduate a doctor who can safely use simple dermatological tools.
Attitude outcomes	Recognize any ethical problems and medicolegal concerning of dermatological and sexually transmitted diseases, and the student should respect the privacy of the patient.

Course structure			
Topic	No. Of lectures	No. of clinical hours	Lecturer
Introduction	3	30	Qasim S. Al-Chalabi
Skin infection	6		Ahmed Manhal
inflammatory skin diseases	9		Anfal L. Al Harbawi
Hair and nail diseases	3		Roaa Maher
S.T.Ds	3		Qasim S. Al-Chalabi
Genetic and malignant skin conditions	3		Hala N. Al Salman
Pruritus	3		Hala N Al Saman

Teaching and learning methods	
Theoretical lectures	
Clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	

Assessment methods	
Formative assessments	- Discussion and oral tests.
Summative assessments	- Written exams - Conducting the clinical exam using the OSCE method.
Pass mark	50%

Resources and requirements	
Essential textbooks	1. Clinical Dermatology 4th Edition by Richard Weller (Author), John A. A. Hunter (Author), John Savin (Author),
Recommended textbooks	Fitzpatrick's Color Atlas And Synopsis Of Clinical Dermatology, 8th Ed 8th Edition by Klaus Wolff (Author), Richard Allen Johnson (Author), Arturo Saavedra (Author),
Other resources	Web and internet as source of information.

الرابط	التدريسي
https://drive.google.com/drive/folders/12GU-WDCwBO5WTxOXCdnzWJgyo2PxmFwe?usp=share_link	د. هالة نذير
https://drive.google.com/drive/folders/129tKBvSUmbmxDG2PX7AcRME5TkrWkaVt?usp=share_link	أ.م.د. قاسم سالم
https://drive.google.com/drive/folders/12E_-eqIyQiZ9oIK_djtgqHQjLsm4pwN?usp=share_link	د. انفال ليث
https://drive.google.com/drive/folders/12OKR2-IoFffADTR6w0Rs4ZLuxQ_4beR9?usp=share_link	د. رؤى ماهر
https://drive.google.com/drive/folders/12MjBW3FIgkcv67Wm_421dMd5JTaaApK?usp=share_link	د. احمد منهل

Theoretical lectures

- **Lecture 1:** Histology and physiology of the skin
- **Lecture 2:** Types of skin lesions
- **Lecture 3,4:** Bacterial infections and tuberculosis
- **Lecture 5-7:** Viral infections
- **Lecture 8,9:** Fungal infections
- **Lecture 10:** Parasitic infections
- **Lecture 11,12:** Dermatitis
- **Lecture 13,14:** Papulosquamous disease
- **Lecture 15:** Acne vulgaris
- **Lecture 16:** Bullous disease
- **Lecture 17,18:** Urticaria and drug eruption
- **Lecture 19,20:** Sexually transmitted diseases
- **Lecture 21:** Diseases due to physical agents
- **Lecture 22:** Hair disorders
- **Lecture 23:** Disorders of the nails
- **Lecture 24:** Pigmentary disorders
- **Lecture 25:** Pruritus
- **Lecture 26,27:** Collagen disease (including SLE)
- **Lecture 28:** Skin and systemic diseases
- **Lecture 29:** Malignant and premalignant conditions
- **Lecture 30:** Genodermatosis

Practical hours

Introduction and general advice

➤ History taking

*Patient profile

*History of present skin condition

- Duration
- Site at onset, details of spread
- Itch
- Burning
- Pain
- Wet, dry, blisters, pustules
- Exacerbating factors

*Relationship of rash to work and holidays

*Drugs used to treat present skin condition and clinical response

- Topical
- Systemic
- Physician prescribed
- Patient initiated

*General health at present

- Ask about fever, weight loss, and night sweats

*Past history of skin disorders

*Past general medical history

- Enquire specifically about asthma and hay fever (atopy)

*Drugs prescribed for other disorders (including those taken before onset of skin disorder)

*Any known drug allergies?

*Family history of skin disorders

- If positive, the disorder or the tendency to have it may be inherited. Sometimes, family members may be exposed to a common infectious agent or scabies or to an injurious chemical

*Family history of other medical disorders

*Social and occupational history

- Alcohol intake
- Smoking history
- Hobbies

- History of sun exposure:
- Outdoor work/hobbies
- Travel abroad
- Sunbed usage
- History of sunburn
- Recent foreign travel

➤ **General examination**

- A dermatological examination consists of a systematic examination of the entire skin in good lighting.
- It is important to examine the nails and scalp.
- Examination of the oral cavity, genital area, and other mucous membranes can also be indicated.
- Examination should be conducted in a well-lit room. Natural sunlight is the ideal illumination.
- A magnifying lens is of inestimable value in examining small lesions.
- It may be necessary to palpate the lesion for firmness and fluctuation; rubbing will elucidate the nature of scales, and scraping will reveal the nature of the lesion's base.
- The entire eruption must be seen to evaluate distribution and configuration. This is optimally done by having the patient completely undress and viewing from a distance to take in the whole eruption at once.
- Diagnostic details of lesions include: Distribution, evolution, involution, grouping, configuration, color, Texture/consistency, and Hyperesthesia/anesthesia.

➤ **Side-room and office tests:**

- Potassium hydroxide preparations for fungal infections,
- Wood's light,
- Bacterial swabs.
- Detection of a scabies mite
- Dermatoscope

Surgery

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	College of medicine /university of Mosul	
Department offering the course	Department of surgery	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 5 th year	
Title of the course	Surgery	
Code	MCSu504	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Theoretical hours=90	Total=150
	Practical hours=60	
Date of specification approval	12/11/2022	

General Aims of Course

This course includes medicine and surgery and its branches. It includes introducing students to basic surgical skills that allow them to study and analyze clinical cases. In order to provide humane health care for patients and raise the efficiency of students scientifically and practically by providing students with the academic medical information necessary to diagnose common or emergency surgical cases with a focus on the students' ability to develop clinical skills and explain the ethical principles in dealing with the patients.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	1-Recognize the basic theoretical and practical rules of surgery and its branches to reach a familiar formula for diagnosis and dealing with cases. 2-mention the appropriate method for taking the medical history of the clinical case, documenting it and presenting it well.
Intellectual Skills	1- Interpretation of the pathological symptoms of surgical cases. 2-Inference about complications of common surgical conditions or operations. 3-Describe the pathogenesis, clinical symptoms, complications, methods of diagnosis and the most successful treatment of surgical cases.
Professional Skills	1-Apply the basic rules in clinical examination and analysis of common surgical cases, taking into account the behaviors and peculiarities of patients.
General and Transferable Skills	Activate scientific information and reinforce it with clinical information.
Attitude outcomes	the student will be able to recognize any ethical problems in relation to the surgical cases and act accordingly, the student will acknowledge the importance of application of scientific information in dealing with practical surgical cases.

Course structure			
General surgery	90	60	Lecturer Muddather Abdulaziz Obii Abdulaziz . Basam Khalid . Yasir Mohammed . Dina Abdulghani . Ziad Tarq . Yaqthan Zuhir . Sahar Habeeb . Muthana Abdulrazaq . Mohammed Ayid . Abdulsalam Thanon . Numan Hadii . Zaid Saadaldeen . Odi Hani . Ashraf Ibrahim .

Teaching and learning methods	
1. Theoretical lectures	
2. Practical labs or clinical sessions	The students are divided into small groups and each of 25 students
3. Seminars and presentations	

Assessment methods	
1. Formative assessments	1. 20% clinical examination 2. 20% mid – year examination (Essay & MCQ systems)
2. Summative assessments	1. 60% Final examination (Essay & MCQ systems)
3. Pass mark	50%

Resources and requirements	
Essential text books	1. Baily and Love's Textbook 2. Browns Clinical Examination
Recommended text books	
Other resources	

Theoretical lectures

Module: Orthopedic Surgery Theoretical lectures

- **Lecture 1-5: Basic principles of orthopedic surgery**
 - Introduction of orthopedic
 - Introduction to fractures
- **Lecture 6-10: Upper limb trauma**
 - Fracture
 - Dislocations
 - Fracture dislocation
 - Phalangeal injuries and other hand injuries.
- **Lecture 11,12: Pelvic fractures**
 - Types, mechanisms, presentation, management and complications
- **Lectures 13-18: Lower limb trauma**
 - Dislocation
 - fracture
 - epiphyseal separation
 - ankle ligament and bone injuries
- **lecture 19-23: Upper limb orthopedic**
 - Shoulder orthopedics
 - Elbow orthopedics
 - Hand orthopedics
- **Lecture 24-29: Lower limb orthopedics**
 - Hip orthopedics
 - Knee orthopedics
 - Foot orthopedics
- **Lecture 30-34: Spine orthopedic**
 - Cervical spine orthopedic
 - Dorsolumbar spine orthopedic
- **Lecture 35: Spinal injuries and paraplegia**
- **Lecture 36-46: miscellaneous general orthopedic topics**
 - Bone
 - Metabolic bone diseases
 - Bone tumors
 - Lesions like tumor
 - Osteoarthritis and Rheumatoid arthritis
 - Avascular necrosis and Osteochondritis
 - Neuromuscular diseases and Peripheral nerves injuries

Module: pediatric surgery

- **Lecture 1: Introduction to the pediatric surgery**
- **Lecture 2: Neonatal intestinal obstruction lecture**
 - Definition
 - Types
 - Cardinal symptoms and signs
 - Causes

- Management
- **Lecture 3: Abdominal wall defect**
 - Definition
 - Embryology
 - Types: omphalocele
 - Gastrointestinal
 - Bladder extrophy
- **Lecture 4:**
 - Hirschsprungs disease
 - Anorectal malformation
- **Lecture 5:**
 - Respiratory distress TEF
 - Surgical causes of respiratory distress in neonates
 - Tracheo-esophageal fistula
 - Diaphragmatic hernia
- **Lecture 6: GIT bleeding in infancy and childhood**
 - Neonatal bleeding
 - Necrotising enterocolitis and volvulus neonatorum
 - Massive hemorrhage: duplication and Meckles diverticulum
 - Bleeding in stable patient
- **Lecture 7 & 8: pediatric tumors**
 - Lymphoma
 - Wilms tumor
 - Rhabdomyosarcoma
 - Neuroblastoma
 - Teratoma
- Module: cardiovascular and thoracic surgery**
- **Lecture 1: Introduction to thoracic surgery**
 - Embryology of the lungs
 - Anatomy of the respiratory tract
 - Physiology of breathing and coughing
 - Pulmonary function tests
 - Fitness for surgery
 - Bronchoscope including fiber-optic and rigid bronchoscope
 - Foreign body inhalation
- **Lecture 2: pleural diseases**
 - Definition and function of the pleura and pleural cavity
 - Pneumothorax, classification, presentation, diagnosis and treatment
 - Malignant pleural effusion, indications for surgical intervention, methods of treatment of recurrent pleural effusion
 - Empyema, causes, diagnosis and treatment
 - Chylothorax, causes, diagnosis and treatment
 - Pleural malignancies
- **Lecture 3: pulmonary diseases**
 - Pulmonary hydatid disease, causes, pathology, diagnosis and treatment

- Bronchiectasis, causes, diagnosis and indications for surgery
- Lung abscess, causes, diagnosis and indications for surgery
- Pulmonary tuberculosis, indications for surgery
- Pulmonary sequestration, causes, diagnosis, and treatment
- Chest wall tumors, presentation, diagnosis and treatment
- Thoracic outlet syndrome, causes and treatment
- Congenital deformities of the chest wall, pectus excavatum and carinatum
- The diaphragm; types of diaphragmatic hernias
- **Lecture 4: lung neoplasms**
 - Benign lung tumors, classification, diagnosis and treatment
 - Malignant lung tumors, classification, risk factors, presentation, diagnosis, staging, and treatment
 - Thoracotomy, single lung ventilation, complications of thoracic surgery and how to manage each
- **Lecture 5: chest trauma**
 - Types of trauma
 - Management of a patient with chest trauma
 - Causes of early death following chest trauma (the deadly dozen), presentation, diagnosis, and how to treat each one
- **Lecture 6: introduction to arterial diseases and chronic arterial occlusion**
 - Introduction to arterial disease
 - Atherosclerosis, causes, risk factors, presentation, diagnosis and treatment including medical and surgical approaches
 - Buerger's disease, presentation, diagnosis and management
 - Raynaud's disease and syndrome, presentation, diagnosis and treatment
- **Lecture 7: acute arterial occlusion**
 - Causes of acute arterial occlusion
 - Arterial embolization, types of embolus, presentation, diagnosis and treatment
 - Acute arterial thrombosis, causes, presentation, diagnosis and treatment
 - Mesenteric arterial occlusion (acute and chronic), diagnosis and treatment
 - Air embolism, causes and treatment
 - Therapeutic embolization, indications and types
- **Lecture 8: arterial trauma**
 - Types or patterns of arterial injury
 - Clinical presentation and examination of a patient with suspected arterial injury
 - Treatment of arterial injury
 - Complications of vascular trauma
 - Approach to a patient with suspected venous injury
- **Lecture 9: aneurysms**
 - Classification and types of aneurysms
 - Abdominal aortic aneurysm, causes, presentation, natural history, diagnosis, and treatment including both endovascular and surgical repair

- Ruptured abdominal aortic aneurysm, presentation, diagnosis and treatment
- Popliteal artery aneurysm, presentation, diagnosis and treatment
- Femoral artery aneurysm, types, presentation and treatment
- **Lecture 10: venous disorders**
 - Varicose veins, presentation, diagnosis and treatment
 - Deep vein incompetence, presentation, diagnosis and treatment
 - Venous ulcers, examination, diagnosis and treatment
 - Superficial thrombophlebitis, diagnosis and treatment
- **Lecture 11&12: cardiac surgery**
 - Definition of open and closed heart surgery
 - Definition and introduction to cardiopulmonary bypass procedures
 - Complications of cardiopulmonary bypass and open heart surgery
 - Ischemic heart disease, indications and contraindication for surgery
 - Valvular heart disease including aortic and mitral valve disease, indications for surgery, type of valve surgery, complications and prophylactic regimes for patients with prosthetic heart valves
 - Congenital heart disease classification

Module: plastic surgery

- **Lecture 1: Burns**
 - Definition
 - Classification
 - Physiologic response to burn injury
 - Indications of admission
 - Resuscitation and initial management
 - Calculation of total burn surface area
 - Monitoring in major burns
 - Electrical injuries
 - Acute-phase burn reconstruction
 - Topical antimicrobials for burn wounds
 - Complications
- **Lecture 2: Common congenital anomalies**
 - Cleft lip and palate
 - Congenital melanocytic nevi
 - Vascular Anomalies
- **Lecture 3: Principles of plastic surgery**
 - Skin anatomy: applied anatomy
 - Skin graft
 - Skin flaps
 - Z- plasty: definition and clinical application
 - Suture techniques and materials
- **Lecture 4&5: skin lesions**

- Benign lesions:
 - Epidermal nevus
 - Seborrheic keratosis
 - Cutaneous horn
 - Keratoacanthoma
 - Sebaceous nevus of Jadassohn
 - Pyogenic granuloma
 - Cysts (epidermoid cyst, dermoid cyst)
- Skin malignancies:
 - Basal cell carcinoma
 - Cutaneous
 - SCC melanoma

Module: Neurosurgery

- **Lecture 1: Neurosurgical Investigations:**
 - Cerebrospinal fluid investigations.
 - Radiological investigations.
 - Electrophysiological investigations.
- **Lecture 2: Cerebral oedema and increased intracranial pressure**
 - Pathophysiology.
 - Etiology.
 - Cerebral herniation
 - Clinical features.
 - Investigations.
 - Treatment.
 - Benign intracranial hypertension: etiology, clinical features, investigations, and treatment.
- **Lecture 3: Hydrocephalus and Spinal Dysraphism:**
 - Hydrocephalus:
 - Spinal dysraphism:
- **Lecture 4-6: Head injuries**
 - Introduction, Glasgow coma scale, intracranial pressure
 - Types of head injury, skull fractures, extra axial and intra axial hematoma, penetrating skull fracture
 - Management of head injury: reception, stabilization and management
- **Lecture 6: intracranial Tumours:**
 - Epidemiology.
 - Classification.
 - Etiology.
 - Clinical features.
 - Investigations.
 - Management.
 - Individual brain tumours.
- **Lecture 7: CNS infection:**

- Types.
- Signs and symptoms.
- Management.
- **Lecture 8: Degenerative diseases of spines:**
 - Pathology
 - Cervical degenerative disease.
 - Lumbar spinal degenerative disease.
 - Clinical features.
 - Investigations.
 - Treatment.
- **Lecture 9&10: Spinal trauma:**
 - Types.
 - Clinical features.
 - Patient reception and management

Module: Accident& emergency medicine lectures

- **Lecture 1-3: Initial management of multiply injured patient**
 - Definitions
 - Principles of advanced trauma life support ATLS
 - Planning and preparations
 - Triage
 - Primary survey
 - AMPLE history
 - Secondary survey
 - Definitive care and disposition
 - Damage control surgery application in ATLS

Module: anaesthesia & critical care

- **Lecture 1: General Anaesthesia**
 - Definitions.6
 - Spectrum of techniques available for anaesthesia.
 - Introduction.
 - General anaesthesia protocol.
 - Pharmacodynamics of GA.
 - Depth of anaesthesia.
 - Intravenous anaesthesia.
- **Lecture 2: General Anaesthesia**
 - Inhalational anaesthesia.
 - Drugs used for inhalational anaesthesia.
 - Neuromuscular blocking agent (Muscle relaxant).
 - Types of muscle relaxant.
 - Indication to use of muscle relaxant.

- Reversion of non-depolarizing muscle relaxant.
- **Lecture 3: Local Anaesthesia & Regional Anaesthesia**
 - Definitions
 - Indication for Local or Regional Anaesthesia
 - Contra indication to the use of local anaesthesia.
 - Local anaesthetics.
 - Mechanism of action of local ɳ drugs.
 - Local anaesthetic toxicity.
 - Types of Local Anaesthesia.
- **Lecture 4: Monitoring in Anaesthesia**
 - Instrumental monitoring.
 - Cardiovascular Monitoring.
 - Respiratory Gas Exchange Monitors.
 - Neurological System Monitors.
 - Temperature.
 - Urinary output.
- **Lecture 5: Postoperative Complications**
 - System-specific postoperative complications
 - Immediate respiratory complications
 - Early & Late Post-operative respiratory complications
 - Atelectasis/ aspiration pneumonia.
 - Immediate cardiovascular complications
 - Hypotension/ hypertension/ myocardial ischemia/ arrhythmia/ stroke.
 - General postoperative complications
 - Post-operative nausea & vomiting (PONV).
 - Post-operative pain.
 - Sleep apnoea.
 - Deep vein thrombosis (DVT) & pulmonary embolism (PE).
 - Mechanical injury.
 - Delay toxic effect.
- **Lecture 6: Cardiopulmonary Resuscitation.**
 - Goal
 - Chain of survival
 - Basic Life Support [BLS]
 - Advanced Cardiac Life Support [ACLS]

Practical hours

Module: Clinical Practical Orthopedic Surgery

- History taking in orthopedics
- Clinical examination in orthopedic
- Imaging and rule of twos in orthopedics
- Upper limb and lower limb examination
- Spine examination
- Fracture definition, how they occur, displacement, classification, healing stages
- Perkins law in predicting time to union and consolidation of fracture
- First aid in fracture management
- Methods of fracture holding and their application technique, complications, advantages and disadvantages of each of them (POP, functional brace, skin traction , skeletal traction ,internal &external fixation)

Module: Clinical practical pediatric surgery

History and physical signs of common pediatric problems

- Pediatric surgical emergencies.
 - Obstructed hernias
 - Intussusception
 - Foreign body inhalation
 - Acute appendicitis
 - Acute scrotum
- Tutorial on pediatric surgery
- Common pediatric surgical problems in neonates

Module: Clinical practical cardiovascular & thoracic surgery

- History taking from a patient with suspected arterial disease
- Examination of a patient with suspected limb ischemia
- Examination and differentiation of different types of ulcers
- History and examination of a patient with suspected respiratory disease
- Taking care of a patient with a chest tube

Module: Clinical practical plastic surgery

- Burns (degrees, diagnosis)
- Benign & malignant skin conditions
- Vascular anomalies(haemangiomas & malformations)
- Principles of skin grafts & skin flaps
- Suture techniques & abnormal scars
- Approach to wounds

Module: Clinical practical neurosurgery

- Neurological examination
- Glasgow coma score
- Clinical features & assessment of head injury patients

Module: Clinical training in accidents & emergency medicine

- Management of multiply injured patient .
 - Preparation and triage
 - Advanced trauma life support
 - Primary survey
 - AMPLE history
 - Secondary survey
 - Definitive care
- Fluids and electrolyte therapy
 - Principles
 - Practical application of fluid therapy
 - Electrolyte (potassium as example)
 - Hypo and hyperkalemia management .
- Shock and blood transfusion
 - Types of shock
 - Assessment of shocked patient
 - Initial management of shock
 - Principles and practice of blood transfusion
- Practical session on emergency medicine cases
- Practical session on trauma cases simulation in skill lab .

Module: Clinical training in anaesthesia & critical care

- Upper Airway Obstruction
 - Anatomy of upper airway.
 - Causes of upper airway obstructions.
 - Management of upper airway obstruction by BLS & ALS.
 - Instruments used to relief upper airway obstruction

Module: Clinical training in urology

- Session 1:
 - Introduction
 - History taking in urology
 - Physical examination in urology
 - Investigations (laboratory, imaging, and others)
- Session 2:
 - Urinary stone diseases: presentation, differential diagnosis, investigations, treatment options, complications

- Renal colic: management
- Session 3:
 - Uroradiology: imaging studies in urology (ultrasound-KUB-IVU-CT-scan)
- Session 4:
 - Urinary tract infections
 - Pyelonephritis
 - Pyonephrosis
 - Renal abscess
 - Cystitis
 - Urethritis
 - Specific infections of urinary tract (TB. Balharziasis)
- Session 5:
 - Upper urinary tract injuries(blunt and penetrating): management
 - Lower urinary tract injuries: bladder and urethral injuries management
- Session 6:
 - Hematuria: Definition, types, causes
 - Renal tumors: management: management: etiology presentation, differential diagnosis, investigations, staging, treatment options, complications
- Session 7:
 - Bladder tumors: management: etiology presentation, differential diagnosis, investigations, staging, treatment options, complications
- Session 8:
 - Scrotal pathologies
 - Painful: torsion of testis, epididymoorchitis, scrotal traumas, Forneirs gangrene
 - Painless scrotal pathologies: hydrocele, varicocele, epididymal cyst, spermatocele, testicular tumors, inguinal hernia
- Session 9:
 - Bladder outlet obstruction
 - benign prostatic hyperplasia
 - prostatic carcinoma
 - prostatitis
 - digital rectal examination
 - urethral stricture
- Session 10:
 - Foleys catheters: definition, types, indications, contraindications, complications

Ophthalmology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	University of Mosul /College of Medicine	
Department offering the course	Surgery	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023 / 5 th year	
Title of the course	Ophthalmology	
Code	MCSu505	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 30 hours	Total= 60 hours
	Theoretical hours= 30 hours	
Date of specification approval	1 / 10 / 2021	

General Aims of Course

This course includes ophthalmology and includes introducing students to the basic surgical skills that allow them to study and analyze clinical cases in order to provide human health care to patients and raise the efficiency of students scientifically.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	1 - Identify the basic theoretical and basic rules of the ophthalmic material to reach a familiar formula for diagnosis and dealing with case 2 – Identify the way in taking the medical history of the clinical condition and documenting and presenting it in a good way
Intellectual Skills	1. Realize the best method of taking the Medical history. 2. Realize the best method of the clinical examination.
Professional Skills	1. Applying the basic rules in the clinical examination and analysis of common surgical conditions taking into account the behaviors and specificities of patients 2- Perform the clinical examination using the ophthalmoscope and measure the intraocular pressure
General and Transferable Skills	1. Recognize the basic knowledge of Ophthalmology and how will corporate with clinical skills
Attitude outcomes	1. Recognize any ethical problems in relation to the topics and act accordingly. 2. Recognize the importance of respect of the patient's dignity and privacy.

Lecturer	No. of lectures	
1. Assistant professor Dr. Azzam Abdul-Kader Ahmed	25	
2. Lecturer Dr. Zubaida Saad Ahmed	5	

Teaching and learning methods	
Theoretical lectures	
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	The students are divided into small groups to do seminars

Assessment methods	
Formative assessments	20% Clinical examination 20% Mid – year Written Examination(MCQ system)
Summative assessments	60% Final Examination(MCQ system)
Pass mark	50%

Resources and requirements	
Essential text books	1.Baily and Love’s Textbook / Short Practice of Surgery
Recommended text books	1.Brows Textbook of Clinical examination
Other resources	Nil

Theoretical lecture

- **Lecture 1:** Introduction to ophthalmology
 - Gross ocular anatomy and physiology.
 - Tools used for ophthalmic examination.
 - Investigations in ophthalmology.
- **Lecture 2,3:** Eyelid
 - Anatomy of eyelid.
 - Congenital malformations.
 - Infectious and inflammatory conditions.
 - Eyelid ptosis.
 - Eyelid malposition: entropion and ectropion.
 - Eyelid malignancies.
 - Miscellaneous conditions.
- **Lecture 4:** Conjunctiva
 - Anatomy of conjunctiva.
 - Infectious and inflammatory conditions.
 - Conjunctival tumors.
 - Conjunctival degenerations.
 - Pigmented conjunctival lesions.
- **Lecture 5,6:** Cornea
 - Anatomy and physiology.
 - Bacterial keratitis: presentation.
 - Herpetic eye diseases.
 - Keratoconus
 - corneal injuries
- **Lecture 7:** Scleritis and episcleritis
 - Anatomy of sclera and episclera.
 - Episcleritis
 - Classification of scleritis
- **Lecture 8:** Orbit
 - Anatomy of orbit.
 - Proptosis and thyroid eye disease.
 - Orbital cellulitis.
 - Idiopathic orbital inflammation.
 - Tumors of the orbit.
 - Cystic orbital lesions.
- **Lecture 9:** Lacrimal system
 - Anatomy and physiology.
 - Structure and function of tear film.
 - Dry eye syndrome.
 - Epiphora: assessment and approach.
 - Nasolacrimal duct obstruction- and surgery.
- **Lecture 10,11:** Lens
 - Anatomy and physiology.
 - Cataract: presentation
 - Assessment lines
 - Management and complications.

- Congenital cataract: presentation and management.
- Congenital lens malformation
- Ectopia lentis.
- **Lecture 12,13: Glaucoma**
 - Anatomy and physiology.
 - Diagnostic criteria.
 - Congenital glaucoma.
 - Primary open angle glaucoma.
 - Acute angle closure glaucoma.
 - Secondary glaucoma (Presentations, Complications and management lines).
- **Lecture 14: Uveal tract**
 - Anatomy and nomenclature.
 - Congenital malformations of uveal tract.
 - Anterior uveitis.
 - Approach to patient with uveitis.
 - Treatment lines and complications.
- **Lecture 15,16: Retina**
 - Anatomy and physiology.
 - Retinitis pigmentosa.
 - Age-related macular degeneration
 - Retinal detachment
 - Diabetic retinopathy
 - Retinovascular occlusion.
 - Toxoplasmosis.
 - Retinoblastoma and leukocoria.
- **Lecture 17: Laser and vitreous**
 - Physical properties of laser.
 - Clinical uses of laser in ophthalmology.
 - Vitreous humour: anatomy and physiology.
 - Vitreous floaters.
 - Vitreous haemorrhage.
 - Indications of vitrectomy.
- **Lecture 18: Refractive errors**
 - The refractive elements of the human eye.
 - Myopia: presentation and treatment.
 - Hypermetropia: presentation and treatment.
 - Astigmatism: presentation and treatment.
 - Presbyopia: presentation and treatment.
 - Refractive surgery.
- **Lecture 19,20: Strabismus**
 - Anatomy and physiology of extraocular muscles.
 - Assessment of child with strabismus.
 - Types of strabismus (esotropia, exotropia and special Syndromes).
 - Special types of strabismus (Duan's and Brown syndrome).
- **Lecture 21: Red eye**
 - Differential diagnoses red eye
 - Approach to patient with red eye.
- **Lecture 22,23: Neuroophthalmology**
 - Anatomy of visual system.
 - Normal optic disc character

- Optic disc swelling
- Optic atrophy
- Pupillary light reactions.
- Myasthenia gravis.
- Horner syndrome.
- Internuclear ophthalmoplegia.
- Third (oculomotor) nerve palsy
- Fourth (trochlear) nerve palsy
- Sixth (abducens) nerve palsy
- **Lecture 24:** Systemic disease and the eye
 - Review of common medical conditions with ocular manifestations.
 - **Lecture 25:** Drugs in ophthalmology (1 hour)
 - Drugs causing keratopathy.
 - Drugs causing cataract.
 - Drugs causing uveitis.
 - Drugs causing optic neuropathy.
- **Lecture 26:** Ophthalmic emergencies
 - Blunt and penetration injuries.
 - Anterior segment manifestations of trauma.
 - Posterior segment manifestations of trauma.
 - Orbital blow out fracture: presentation and management.
- **Lecture 27:** Headache and facial pain
 - Anatomy of trigeminal nerve.
 - Primary headache syndrome
 - Secondary headache syndrome.
 - Differential diagnosis of Headache from ocular origin.
- **Lecture 28:** Pathology and intraocular tumours
 - Capillary and cavernous haemangiomas.
 - Optic nerve tumours.
 - Lacrimal gland tumours
 - Phacomatosis.
- **Lecture 29:** Recent topics in ophthalmology
 - Mobile eye clinics
 - Genetic counselling.
 - Common myths and misconception in ophthalmology.
- **Lecture 30:** Differential diagnosis of visual loss
 - Acute visual loss: causes and management.
 - Gradual loss of vision: causes and management.

Practical Hours:

The students are divided into small groups of 25 one and the course is for 2 weeks and is occurred in the Consultation Outpatient Clinics of the Teaching Hospitals and is also included seminars and clinical presentations and ended by a clinical examination

Each clinical session is for 3 hours

Subjects:

- 1. History Taking**
- 2. Clinical examination of eye**
- 3. Use of Slit – lamp device**

Ear, Nose and Throat

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Surgery	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022/ 2023, 5 th year	
Title of the course	Otolaryngology	
Code	MCSu506	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 30 hours	Total= 60 hours
	Theoretical hours= 30 hours	
Date of specification approval	5 / 10 / 2022	

General Aims of Course

The course describes the basic knowledge of otolaryngology to the medical students in order to build the clinical knowledge and clinical skills in the next years in diagnosis and treatment of the different surgical diseases including the emergent conditions, so optimize the medical services to the society.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Identify the basic anatomy and physiology of ear ,nose and throat.2. Recognize the general surgical features of related diseases.3. Explain the surgical management and possible complications of diseases.4. Describe the new techniques of diagnosis and treatment in otolaryngology.
Intellectual Skills	After completing this course, student should have the following skills: <ol style="list-style-type: none">1. Realize the best method of taking the Medical history.2. Realize the appropriate method of the clinical examination.3. Assess and interpret the results of audiological tests.
Professional Skills	After completing the course, student acquires the following skills: <ol style="list-style-type: none">1. Differentiate between different neck masses.2. Elicit ear wash and nasal endoscopy.
General and Transferable Skills	After completing the course, student can do the following: <ol style="list-style-type: none">1. Work effectively in a team in a variety of health care settings.2. Acquire problem-solving skills in groups for continuing professional development needs.3. Demonstrate critical thinking and decision making abilities in a variety of theoretical and practical situations.4. Recognize the basic knowledge of otolaryngology and it's departments and how will incorporate the clinical skills
Attitude outcomes	<ol style="list-style-type: none">1. Recognize any ethical problems in relation to the topics and act accordingly.2. Recognize the importance of respect of the patient's dignity and privacy.

Course structure		
Topic (lectures)	No. of lectures	Lecturer
Anatomy and physiology of the ear and facial nerve	1	Prof. Basil Mohammad Natheer
Hearing Tests and symptoms and signs of ear diseases	1	Prof. Basil Mohammad Natheer
Diseases of the external ear	1	Lecturer Sunmar Younus Hamed
Diseases of the middle ear: acute and chronic otitis media	2	Lecturer Sunmar Younus Hamed
Complications of otitis media	2	Lecturer Sunmar Younus Hamed
Deafness: sensorineural and conductive	1	Lecturer Baraa Mahir
Diseases of the vestibular system: Vertigo	1	Lecturer Baraa Mahir
Tinnitus, Acoustic neuroma	1	Lecturer Baraa Mahir
Audiological tests	2	Lecturer Baraa Mahir
Anatomy and physiology of the nose and paranasal sinuses	1	Prof Ali Abdulmuttalib
Traumatic conditions of the nose	1	Lecturer Mohammed Saad Azeez
Acute rhinosinusitis	1	Lecturer Mohammed Saad Azeez
Chronic rhinosinusitis	2	Lecturer Mohammed Saad Azeez
Allergic and non-allergic rhinitis	1	Lecturer Mohammed Saad Azeez
Anatomy and physiology of the larynx	2	Assisstant prof. Haitham Alnori
Acute and chronic laryngitis	2	Assisstant prof. Haitham Alnori
Carcinoma of the larynx and tracheostomy	2	Prof Ali Abdulmuttalib
Anatomy and physiology of the pharynx	1	Lecturer Ahmad Khalid
Conditions of the mouth	1	Lecturer Ahmad Khalid
Acute and chronic pharyngitis and parapharyngeal abscess	1	Lecturer Ahmad Khalid

Tonsillitis and adenoid	1	Prof Ali Abdulmuttalib
Tumors of the pharynx	2	Lecturer Ahmad Khalid
Topic (clinical session)	No. of clinical hours	Lecturer
Introduction to ENT	3	Prof Ali Abdulmuttalib
History taking in ENT	3	Assistant prof. Haitham Alnori
Clinical Examination in ENT	3	Lecturer Ahmad Khalid
Neck examination	3	Lecturer Ahmad Khalid
Nasal endoscopy and flexible laryngoscopy	3	Lecturer Sunmar Younus Hamed
Ear wash and ear Suction	3	Lecturer Sunmar Younus Hamed
Epistaxis and ENT emergency	3	Lecturer Baraa Mahir
Stridor	3	Lecturer Baraa Mahir
Audiogram	3	Lecturer Mohammad Saad
ENT instruments	3	Lecturer Mohammad Saad

Teaching and learning methods	
Theoretical lectures	Lectures using Data show, The students are divided into groups each of 100-150 students.
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	The students are divided into small groups to do seminars.

Assessment methods	
Formative assessments	<p>Draw a concept map in class to represent their understanding of a topic.</p> <p>Submit one or two sentences identifying the main point of a lecture.</p> <p>Turn in a research proposal for early feedback.</p> <p>Homework exercises as review for exams and class discussions.</p> <p>Reflections journals that are reviewed periodically during the semester</p>
Summative assessments	<ol style="list-style-type: none"> 1. Written exam of the midyear(20 marks) and the final exam (60 marks) consisting of multiple choice questions with reasoning as well as problem solving to assess the students' knowledge. The student will have to demonstrate the mastery of his knowledge and the understanding of the concepts. 2. Practical examination at the end of the course (20 marks) to assess practical and case studies and problem solving, consists of case scenario and OSCE.
Pass mark	50%

Resources and requirements	
Essential text books	1. Hall and Colman's diseases of the ear, nose and throat.
Recommended text books	1. Logan Tunner,s Diseases of the Nose Throat and Ear, Head and Neck Surgery.
Other resources	Websites: uptodate, Pubmed.

Theoretical lectures

Module: The Ear

- **Lecture 1:** Anatomy and Physiology of the ear.
 - Anatomy of the ear.
 - Physiology of hearing.
- **Lecture 2:** Symptoms and signs of ear diseases.
 - Otalgia, hearing loss, otorrhea, vertigo, tinnitus.
 - Features of conductive and sensorineural deafness.
- **Lecture 3:** Diseases of the external ear.
 - Wax, Foreign body, furuncle, otitis externa.
 - Otomycosis, bullus myringitis, Herpes zoster.
- **Lecture 4:** Diseases of the external ear.
 - Trauma of external ear, hematoma of the auricle.
 - Perichondritis
 - Malignant otitis externa, keratosis obturans,
- **Lecture 5:** Diseases of the middle ear.
 - Acute otitis media.
 - Otitis media with effusion.
 - Chronic suppurative otitis media.
- **Lecture 6:** Diseases of the middle ear.
 - Cholesteatoma.
 - Complications of otitis media.
- **Lecture 7:** Diseases of the middle ear.
 - Mastoiditis.
 - Petrositis.
 - Labyrinthitis.
- **Lecture 8:** Sensorineural hearing loss.
 - Sudden SNHL.
 - Ototoxic drugs.
 - Acoustic trauma.
 - Otosclerosis.
- **Lecture 9:** Vertigo.
 - Benign paroxysmal positional vertigo.
 - Meniere's disease.
 - Vestibular neuronitis.
- **Lecture 10:** Tinnitus and ear tumors/ facial palsy.
 - Vestibular schwannoma.
 - Bell's palsy.

Module: The Nose

- **Lecture 1:** Anatomy and Physiology of the nose.
 - Anatomy.
 - Physiology.
 - Blood and nerve supply.
- **Lecture 2:** Congenital and traumatic conditions of the nose.
 - Choanal atresia.
 - CSF leak.
 - Fracture nose.

- Septal hematoma and abscess.
- **Lecture 3:** Acute and chronic rhinosinusitis.
 - Acute rhinitis.
 - Chronic rhinosinusitis.
 - Atrophic rhinitis.
 - Rhinitis medicamentosa.
- **Lecture 4:** Complications of rhinosinusitis and Fungal rhinosinusitis.
 - Orbital and intracranial complications.
 - Allergic fungal sinusitis.
 - Invasive fungal sinusitis.
- **Lecture 5:** Allergic rhinitis and nasal polyposis.
 - Allergic rhinitis.
 - Non-allergic rhinitis.
 - Antro-choanal polyp.
 - Ethmoidal polyps.
- **Lecture 6:** Tumors of the nos.
 - Inverted papilloma.
 - Squamous cell carcinoma.
 - Adenocarcinoma.

Module: The Larynx

- **Lecture 1:** Anatomy and Physiology of the larynx.
 - Anatomy.
 - Physiology.
 - Muscles of the larynx.
- **Lecture 2:** Symptoms and signs of laryngeal diseases, and examination of the larynx.
 - Symptoms.
 - Normal larynx.
 - Endoscopy of the larynx.
- **Lecture 3:** Inflammation of the larynx.
 - Acute laryngitis.
 - Chronic laryngitis.
- **Lecture 4:** Benign vocal cord lesions.
 - Vocal cord polyp.
 - Singer nodule.
 - Hematoma of the cord.
- **Lecture 5:** Stridor and Cancer of the larynx.
 - Ca. larynx, aetiology, pathology, presentation, diagnosis and treatment.
- **Lecture 6:** Tracheostomy and vocal cord palsy.
 - Indications and complications of tracheostomy.
 - Adductor and abductor palsy.

Module: The Pharynx

- **Lecture 1:** Anatomy and Physiology of Pharynx.
 - Anatomy.
 - Physiology.
- **Lecture 2:** History, examination and investigations of pharyngeal diseases.
 - History.
 - Clinical assessment.

- Endoscopy of the pharynx.
- Ct and MRI of the neck.
- **Lecture 3:** Benign conditions of pharynx and oral cavity.
- Aphthous ulcer.
- Behcet syndrome.
- Ludwig angina.
- Acute necrotizing gingiva-stomatitis.
- **Lecture 4:** Diseases of palatine tonsils and adenoids.
- Acute pharyngitis.
- Chronic pharyngitis.
- Acute tonsillitis.
- Adenoid enlargement.
- **Lecture 5:** Complications of tonsillar infections.
- Peritonsillar abscess.
- Indications of tonsillectomy.
- Complications of tonsillectomy.
- **Lecture 6-8:** Tumors of the pharynx and deep neck space infections.
- Retropharyngeal abscess.
- Parapharyngeal abscess.
- Nasopharyngeal carcinoma.
- Juvenile nasopharyngeal angiofibroma.

Practical Hours:

The students are divided into small groups of 25 one and the course is for 2 weeks and is occurred in the Consultation Outpatient Clinics of the Teaching Hospitals and is also included seminars and clinical presentations and ended by a clinical examination.

Each clinical session is for 3 hours

Subjects:

- 1. History Taking**
- 2. Clinical examination of ear, nose and throat**
- 3. Use of different ENT devices**

Pediatrics

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	PEDIATRICS	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	٢٠٢٣-٢٠٢٢ /5 th year	
Title of the course	PEDIATRICS	
Code	MCPe507	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 60	Total=120
	Theoretical hours= 60	
Date of specification approval	1/9/2022	

General Aims of Course

This course covers the science of pediatrics and provides students with an introduction to the fundamental pediatric skills they need to study and analyze clinical cases in order to provide patients with health and humanitarian care. It also increases students' efficiency both scientifically and practically by arming them with the academic medical knowledge required to diagnose common or urgent pediatric conditions, with an emphasis on strengthening their capacity to develop clinical judgment. It also describes ethical standards to follow while handling pediatric illnesses and how to communicate with the patient's family.

<u>Intended learning outcomes of the course:</u>			
By the end of the course, students should be able to:			
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Implement the guidelines to ensure proper communication and interaction with the patient, and analyze the medical record to accurately comprehend the pathological situation. 2. Determine the best strategy for obtaining, recording, and presenting a clinical case history. 3. Identify" the most important clinical manifestations of pediatric diseases including emergency cases 4. Compare the results of clinical evaluation with the results of laboratory tests to reach a diagnosis of pathological conditions and in a correct academic way 		
Intellectual Skills	<ol style="list-style-type: none"> 1. Conduct clinical examinations relevant to common emergencies 2. Troubleshooting of the pathogenic symptoms in pediatric cases from the perspectives of anatomy, pathology, function, and diagnostic significance 3. Compose a differential diagnosis of common childhood diseases and what is the proposed treatment for it 		
Professional Skills	<ol style="list-style-type: none"> 1. Follow the fundamental principles while taking into account the "behaviors and privacy of the patient" during clinical examination and analysis of common pediatric diseases 2. formulate management plans for common and emergency cases in pediatrics 3. Identify complications of childhood diseases, and formulate a prevention and management plan 		
General and Transferable Skills	<ol style="list-style-type: none"> 1. Energizing scientific knowledge and fusing it with clinical expertise 		
Course structure			
Topic	No. Of lectures	No. Of clinical hours	Lecturer
Haemato-oncology	4	6	Assistant professor Dr. Mazin Mahmoud Fawzi
Gastro-enterology	5	6	Assistant professor Dr. Aws Hazem Ahmed
Cardiology	4	6	Professor Dr. Rikan Suleiman Juma

Infectious diseases	5	6	Professor Dr. Riyad Abdullatif Al-Obeidi
Endocrinology	4	3	Assistant professor Dr. Nada Ali Ahmed
Respiratory	5	6	Assistant professor Dr. Rabie Yassin Al-Dabouni
Neurology	4	3	Assistant professor Dr Ghaith Waddah
Neonatology	11	6	Dr. Noor Samir Yahya Dr. Omar yahya
Normal child growth and development, vaccination and behavioural disorders	4	6	Dr. Farah Samir Yahya
Poisoning	2		Dr. Ahmed Saad
Genetics and inborn error of metabolism	4		Dr. Noor Buraq
Nephrology	4	6	Dr. Gesar Salim
Child nutrition, rickets and failure to thrive	4	6	Dr. Nawar Yahya

Teaching and learning methods	
<ul style="list-style-type: none"> Theoretical lectures 	
<ul style="list-style-type: none"> Clinical sessions in pediatric wards, neonatal care units "Teaching Hospital", and skills laboratory (using models or educational dolls and computers to display pictures of some cases of pediatrics, newborns and preterm infants or videos to learn the method of clinical examination) 	The students are divided into small groups each of 10-15 students
<ul style="list-style-type: none"> Discussion sessions 	

Assessment methods	
Formative assessments	1. Google classroom quiz upon each system completion
Summative assessments	1. Theoretical Mid-year exam (25%) 2. Theoretical end-of-year exam (60%) 3. Comprehensive clinical examinations conducted by the department at the end of each training period (15%)
Pass mark	50%

Resources and requirements	
Essential text books	Nelson essentials of pediatrics (eighth edition) 2018
Recommended text books	1. Illustrated textbook of Paediatrics (sixth edition) 2022 2. Nelson textbook of pediatrics (21th edition)
Other resources	NICE guidelines, ROME IV Criteria, Ispad guidelines 2022

Theoretical lectures

Module: Infant feeding and malnutrition

- **Lecture 1** :child nutrition
 - Breast feeding
 - lactogenesis &its stages
 - physiology of breast feeding
 - human milk contents
 - contraindications of breast feeding
 - formula feeding and its types
 - complementary feeding
- **Lecture 2**: rickets
 - metabolism of vitamin d
 - definition of rickets
 - etiology of rickets
 - clinical manifestations of rickets
 - diagnosis
 - treatment
- **Lecture 3**: Failure to thrive
 - definition of FTT
 - the causes of FTT
- **Lecture 4**:
 - clinical features of FTT
 - the management of FTT

Module: Genetics:

- **Lecture:1 patterns of inheritance**
 - autosomal dominant disorders
 - autosomal recessive disorders
 - x-linked disorders
 - x-linked dominant inheritance
 - multifactorial disorders
 - disorders with unusual patterns of inheritance
 - mitochondrial inheritance
 - uniparental disomy
 - expansion of a trinucleotide repeat
 - teratogenic agents
- **Lecture 2 : chromosomal disorders**
 - down syndrome
 - trisomy 18
 - trisomy 13
 - monosomies
 - turner syndrome
- **Lecture 3: genetic assessment**
 - approach to the dysmorphic child
 - history and physical examination
 - laboratory evaluation
- **Lecture 4: metabolic disorders**
 - metabolic assessment

- signs and symptoms
- glycogen storage diseases
- galactosemia
- phenylketonuria

Module: Neonatology

➤ **Lecture 1:**

- classification of newborn baby
- assessment of gestational age
- causes of low-birth-weight baby
- preterm baby
- small for-date baby
- large for-date baby
- post term baby

➤ **Lecture 2: respiratory distress syndrome**

- differential diagnosis of RDS in newborn baby
- patent ductus arteriosus in preterm baby
- bronchopulmonary dysplasia
- retinopathy of prematurity

➤ **Lecture 3:**

- transient tachypnea of newborn baby
- meconium aspiration syndrome
- congenital diaphragmatic hernia
- tracheoesophageal fistula
- intraventricular hemorrhage
- apnea
- necrotizing enterocolitis

➤ **Lecture 4:**

- hypothermia
- hypoglycemia
- infant of diabetic mothers
- hypocalcemia
- neonatal seizures

➤ **Lecture 5:**

- neonatal sepsis
- TORCH infection

➤ **Lecture 6: examination of the newborn baby.**

- Classification of newborns
- Examination of newborns

-Neonatal Reflexes

➤ **Lecture 7: birth asphyxia (hypoxic- ischemic encephalopathy).**

- neonatal resuscitation
- birth injuries
- birth asphyxia

➤ **Lecture 8:**

hemorrhagic disease of newborn
neonatal thrombocytopenia

➤ **Lecture 9: neonatal jaundice:**

- pathophysiology of neonatal jaundice.
- differentiate pathologic from physiologic jaundice.
- how to manage pathologic jaundice.
- **lecture 10: hemolytic disease of the newborn**
 - ABO incompatibility
 - RH incompatibility

Module: Cardiovascular system

- **Lecture 1: Acyanotic congenital heart diseases**
 - fetal circulation
 - ASD
 - AV canal defect
 - VSD
 - PDA
 - coarctation of aorta
- **Lecture 2: Cyanotic congenital heart disease**
 - TOF
 - TGA
 - TA
 - EA
 - TAPVD
- **Lecture 3:**
 - rheumatic fever
 - infective endocarditis
- **Lecture 4:**
 - congestive heart failure
- **Lecture 5:**
 - Viral myocarditis
 - Dilated cardiomyopathy
 - SVT

Module: Gastrointestinal tract

- **Lecture 1:**
 - acute gastroenteritis in children
- **Lecture 2:**
 - dehydration
 - treatment of acute gastroenteritis
 - chronic diarrhea
 - pathophysiology, causes, celiac disease, IBS, malabsorption syndromes
- **Lecture 3: common manifestations of gastrointestinal disorders**
 - Abdominal pain, infant colic, vomiting
- **Lecture 4: liver diseases**
 - Viral hepatitis, acute hepatic failure

Module: Infectious diseases

- **Lecture 1:**
 - Measles, mumps, rubella: infectivity, clinical features, complications, prevention.
- **Lecture 2:**
 - poliomyelitis, EBV (infectious mononucleosis), diphtheria: infectivity, clinical features, complications, diagnosis, treatment, prevention

➤ **Lecture 3:**

- pertussis, visceral leishmaniasis, hand foot mouth disease, herpes simplex, infectivity, clinical features, complications, treatment.

➤ **Lecture 4:**

- roseola infantum, erythema infectiosum, varicella-zoster,: infectivity, clinical features, complications, treatment

➤ **Lecture 5:**

-Covid 19 in children
-Monkeypox in children
-scarlet fever

Module: Nervous system

➤ **lecture 1**

- Assessment of CNS
- Neurologic examination of a neonate
- Neonatal reflexes
- CNS reflexes of infancy
- Posture
- neurologic examination of a child

➤ **lecture 2**

- Congenital anomalies of the nervous system:
 - Spina bifida
 - Meningocele
 - Macrocephaly and microcephaly
- Increased intracranial pressure (icp): definition, etiology, risk factor, clinical feature, investigation, treatment
- Hydrocephalus
- Floppy baby

➤ **lecture 3: headache and migraine:**

- Approaches to child with headache
- Types of headaches
- Migraine variants
- Seizures in childhood
- Types of seizures
 - absence seizures
 - febrile seizures
 - generalized tonic, clonic and tonic clonic seizures
 - infantile spasms (west syndrome)
 - juvenile myoclonic epilepsy
- acute ataxia
- corticospinal (upper) and neuromuscular (lower) loss of motor function:
 - stroke in childhood

➤ **Lecture 4:**

- neurocutaneous disorders:
 - Neurofibromatosis
 - Tuberous sclerosis
 - Sturge-weber syndrome
- Diseases of the spinal cord
 - diseases of the anterior horn cell:(Werdnig- Hoffmann disease):

- peripheral neuropathy (Guillain-Barré syndrome)
- neuromuscular junction:(myasthenia gravis)
- Muscle disease:
 - Duchenne dystrophy
 - Limb – girdle dystrophy
 - cerebral palsy

Module: Respiratory system

- **Lecture 1:**
 - Common cold,
 - acute pharyngitis
 - pharyngoconjunctival fever
 - stridor (laryngomalacia, viral croup)
- **Lecture 2:**
 - Acute epiglottitis
 - Wheezy child
 - acute bronchiolitis
- **Lecture 3:**
 - -childhood pneumonia
 - Cystic fibrosis
- **Lecture 4:**
Bronchial asthma (1)
- **Lecture 5:**
 - Bronchial asthma (2)
 - Foreign body inhalation

Module: Endocrinology

- **Lecture 1:** diabetes mellitus
- **Lecture 2:**
 - Diabetic ketoacidosis
 - Hypoglycemia
 - Monitoring long and short term
- **Lecture 3:** hypothyroidism
 - congenital and juvenile hypothyroidism
 - congenital adrenal hyperplasia, ambiguous genitalia
 - CAH
- **Lecture 4:** short stature

Module: Growth, development and behavioral abnormalities

- **Lecture:1**
Definition of growth, definition of development, definition of maturation, thumb rule of normal growth, factors affecting growth and development, assessment of growth, growth chart, procedures for accurate growth measurement, formulas for normal growth assessment. skeletal development, dental development
- **Lecture 2:**
 - Normal development, fields of normal growth assessment, newborn period – neonatal reflexes, emerging patterns of behavior during the 1st year of life:
- **Lecture 3:**
 - Emerging pattern of behavior from 1-5 years, developmental disorders, global developmental delay, red flags of abnormal development,

- adolescence, puberty, precocious puberty
- **Lecture 4:** Behavioral disorders in children
- Pica
- Nocturnal enuresis
- Encopresis,
- Chronic constipation

Module: pediatrics emergency

- **Lecture 1:** anaphylaxis and immunological disorder

Module: hematology and oncology

- **Lecture 1:** Anemia
- Definition.
- Physiology.
- Types.
- Causes
- Anemia due to reduced RBC production.
- Iron deficiency anemia.
- **Lecture 2: hemolytic anemia**
- Definition.
- Diagnosis.
- G6pd deficiency.
- Sickle cell anemia.
- Hereditary spherocytosis.
- Thalassemia.
- **Lecture 3: bleeding tendency.**
- Physiology of hemostasis.
- Screening test for bleeding tendency.
- Hemophilia.
- Von Willebrand's disease (VWD).
- Immune thrombocytopenia (ITP).
- thrombophilia
- **Lecture 4:** pediatric hemato-oncology.
- General principles of cancer in children.
- Predisposing factors.
- Clinical features of childhood malignancies.
- Leukemia.
- NHL
- HD.

Module: Childhood poisoning and shock

- **Lecture 1:** approach to poisoned patient
- Initial evaluation & management of acetaminophen & aspirin poisoning.
- **Lecture 2:**
- Hydrocarbons, tricyclic antidepressants, lead & organophosphorus poisoning
- **Lecture 3:** Resuscitation
- Primary & secondary assessment & management
- **Lecture 4:** Shock
- definition, types clinical presentation & management

Module: Nephrology

- **Lecture 1:**
 - Urinary tract infection
 - Vesicoureteral Reflux
- **Lecture 2:**
 - Proteinuria
 - Nephrotic syndrome
- **Lecture 3:** hematuria
 - Acute Poststreptococcal Glomerulonephritis
 - Hemolytic-Uremic Syndrome
- **Lecture 4:**
 - Acute kidney injury
 - Chronic kidney disease

Pediatrics clinical training will provide the foundation of knowledge and skills which students will need in pediatric medicine, the overarching goal is to prepare students to care for children and their families.

Intended learning outcomes: (general)

- 1: Perform complete pediatric histories and physicals when appropriate.
- 2: Acquire and apply evidence-based knowledge about pediatric-specific conditions and diseases.
- 3: Demonstrate effective interpersonal communications skills with patients and as a member of the healthcare team.

الاسبوع الاول :

Efficiently obtain an age-appropriate medical/developmental/social history in a sensitive manner from a child and/or the accompanying adult.

Identify normal developmental milestones in infancy, childhood, and adolescence, and recognize deviations or delays

Identify normal linear growth and weight gain in infancy, childhood, and adolescence and recognize deviations or delays

Describe the general science of immunizations, recognize the recommended vaccination schedule, and list the most common vaccine-preventable illnesses

Independently perform an age-appropriate pediatric physical exam in a sensitive manner that is tailored to the nature of the visit or complaint.

الاسبوع الثاني

Evaluate common respiratory pediatric conditions including:

Fever, , sore throat, otalgia, rhinorrhea, cough, stridor, respiratory distress (asthma, viral-induced wheeze, bronchiolitis, pneumonia) and other diseases like cystic fibrosis

Evaluate common gastrointestinal pediatric conditions including:

vomiting and diarrhea with dehydration, abdominal pain

failure to thrive, and other rarer diseases like celiac disease,

Evaluate heart murmurs and common cardiovascular pediatric problems like VSD, ASD, PDA, TOF , and other diseases like myocarditis and infective endocarditis

Evaluate common central nervous system pediatric disorders like febrile convulsion, meningitis, cerebral palsy and other conditions like hydrocephalous.

Gynecology

Course Description

This course includes the scientific, practical and cognitive construction of the women's subject for students of the fifth stage in the Faculty of Medicine and it includes introducing students to the basic skills that allow them to study and analyze study cases in order to provide health care and raise the efficiency of students scientifically and practically by providing students with the necessary academic medical information to diagnose gynecological diseases with a focus on developing the student's ability to develop clinical skills and explain ethical principles in dealing with pathological conditions and communication skills with the patient.

Educational Institution/ college	CMUM	
Department offering the course	Gynecology and Obstetrics	
Name of Academic Program	M.B.CH.B	
Academic Year/level	2022-2023/ 5 th year	
Title of the course	gynecology	
Code	MCOg508	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours=60 hours	Total=120 hours
	Theoretical hours=60 hours	
Date of specification approval	1/9/2022	

General Aims of the Course:

Building knowledge, ability and skill to accommodate the scientific foundations in the subjects of gynecology and understand the terms of the scientific and practical material.

<u>Intended learning outcomes of the course:</u>		
By the end of the course, students should be able to:		
Knowledge and understanding:	<ol style="list-style-type: none"> 1. summarize the physiology and anatomy of the female reproductive system. 2. explain the basics of diseases affecting the female reproductive system, including infections affecting the female reproductive system, menstrual disorders, disorders that occur after menopause, tumors that affect the female reproductive system of both benign and malignant types, in addition to gynecological diseases that affect girls in childhood and adulthood. 	
Intellectual Skills	<ol style="list-style-type: none"> 1. obtain the history of the pathological condition correctly from the patient and link it to the clinical data of the clinical examination and the results of laboratory or imaging tests to reach the correct diagnosis of the pathological condition and its treatment. 2. utilization of the results of laboratory or imaging tests used in diagnosis. 	
Professional Skills	<ol style="list-style-type: none"> 1. diagnose and treat diseases affecting the female reproductive system (especially common and emergency ones). 2. perform a gynecological clinical examination including "taking swabs and a pap smear" and interpret the clinical finding during examination. 	
General and Transferable Skills	<ol style="list-style-type: none"> 1. develop his or her ability to deal with the patient after graduation. 2. research scientific sources related to the subjects of obstetrics and scientifically approved websites to update his or her scientific knowledge. 	
Course structure		
Topic	No. Of lectures	Lecturer
Normal and abnormal development of female genital tract	5	Dr. Baraa Lukman

Gynaecological aspect of neonatal, childhood and puberty period	3	Dr. Aseel B. Younus
Menstrual cycle and its abnormalities	6	Dr. Aseel B. Younus Dr. Zahraa Noah
Infections in gynecology	4	Dr. Hiba A. Suhaeel
Sub-fertility and related disorders	7	Dr. Ruaa A.Hamed Dr. Ahmed Jasim
Menopause and its disorders	2	Dr. Ahmed Jasim
Benign conditions affecting the vulva, cervix and uterus	4	Dr. Asmaa Al-Sanjery Dr. Raida Al- Wazan
Tumors of the genital tract	13	Dr. Raida Al- Wazan Dr. Baraa Lukman Dr. Hadeel Anwer
Urogynecology	4	Dr. Ruaa A.Hamed Dr. Asmaa Al-Sanjery
Family planning	4	Dr. Saja Al-Jawady
Common gynecological operation	3	Dr. Hadeel Anwer
Miscellaneous subjects in gynecology	5	Dr. Hadeel Anwer Dr. Ahmed Jasim

Teaching and learning methods	
Theoretical lectures	60 lectures
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students.
Seminars and presentations	None

Assessment methods	
Formative assessments	<ul style="list-style-type: none"> • 1. mini clinical exam (Mini cx). • 2. case based discussion (CBD). • 3. direct observational procedures (DOP).
Summative assessments	<ul style="list-style-type: none"> • 1. Essay • 2. MCQ • 3. OSCE
Pass mark	50%

Resources and requirements	
Essential text books	<ul style="list-style-type: none"> • 1. Gynecology by ten teachers
Recommended text books	<ul style="list-style-type: none"> • 1. Dewhursts textbook of obstetrics and gynaecology. • 2. Essential textbook of obstetrics and gynaecology.
Other resources	<ul style="list-style-type: none"> • 1. Lectures given by lecturers in the 5th year. • 2. workshops, journals and websites.

Theoretical lectures

Module1: Normal and abnormal development of female genital tract

Subject: Embryology and normal development of female genital tract.

- **Lecture 1:** Review of embryology of female genital tract development.

Subject : Abnormal development of female genital tract.

- **Lecture 1,2:** Mullerian duct abnormalities:
 - Classification of mullerian duct abnormalities.
 - Presentation of mullerian duct abnormalities.
 - Investigation and management of mullerian duct abnormalities.
 - Mayer House Rokatinisky syndrome.
 - Imperforate hymen.
- **Lecture 3,4:** Disorder of sexual development (DSD).
 - Definition and explanation of DSD.
 - XY-DSD and common examples.
 - XX- DSD.
 - Congenital adrenal hyperplasia.
 - Ambiguous genitalia.
 - Other common examples of DSD.

Module 2: Gynaecological aspect of neonatal, childhood and puberty

Subject: Gynecological problem in neonatal and childhood period.

- **Lecture 1,2:**
 - Clinical presentation and management of common gynecological problems in neonatal and childhood period.
 - Sexual abuse.

Subject: Puberty and its disorders.

- **Lecture 1,2:**
 - Definition
 - Physiology of puberty
 - Stages of puberty & Tanner staging
 - Precocious puberty (types, causes, management)
 - Delayed puberty (causes, management).

Module 3: Menstrual cycle and its abnormalities

Subject: Amenorrhoea.

- **Lecture 1:**
 - Primary amenorrhoea: definition, causes and management.
- **Lecture 2:**
 - Secondary amenorrhoea: definition, causes and management.
 - Premature ovarian failure.

Subject : Dysmenorrhea and premenstrual syndrome.

- **Lecture 1,2:**
 - definition, aetiology, and management of dysmenorrhea.
 - definition, aetiology, and management of premenstrual syndrome.

Subject: Abnormal uterine bleeding (AUB)

- **Lecture 1,2:**
 - Definitions of AUB.
 - Aetiology of AUB.
 - Clinical Assessment (history, examination and investigation).
 - Treatment of each cause.
- **Lecture 3:**
 - Management of heavy menstrual bleeding.
 - Acute heavy menstrual bleeding.

Module 4: Infections in gynecology

Subject: Introduction and lower genital tract infection

- **Lecture 1:**
 - Description of the normal vaginal discharge.
 - Gynecological history and examination.
 - Types of lower genital tract infection (candidal , bacterial vaginosis , trichomoniasis).

Subject: Upper genital tract infection

- **Lecture 1:**
 - Definition, terminology, causative organism, presentation, diagnosis, treatment, long term complications, extra genital complications of causative organism of PID

Subject: Other causes of genital tract infection:

- **Lecture 1,2:**
 - Other uncommon bacterial causes of genital tract infection (actinomycosis, syphilis , TB).
 - Viral causes of genital tract infection (HIV, HPV, HSV , molluscum infections).

- Parasitic infection

Module 5: Sub-fertility and related disorders

Subject: sub-fertility.

- **Lecture 1:**
 - Review of natural conception.
 - Factors affecting fertility.
 - Causes of sub-fertility.
 - Approach to sub-fertile couple: history & examination.
- **Lecture 2:**
 - Investigations of female factor sub-fertility.
 - Investigation of male factor sub-fertility.
 - Management of sub-fertility: Medical & surgical.
- **Lecture 3:**
 - Assisted reproductive techniques.

Subject: Polycystic ovary syndrome, hirsutism and virilism:

- **Lecture 1:**
 - Polycystic ovary syndrome: definition, incidence, criteria for diagnosis, presentation, late sequelae, and management.
- **Lecture 2:**
 - Hirsutism and virilism: Definition, pathophysiological aspects, causes and management.

Subject: Endometriosis and adenomyosis.

- **Lecture 1,2:**
 - Definition, location and appearance, aetiology, presentation and management of endometriosis.
 - Definition, presentation and management of adenomyosis.

Module 6: Menopause and its disorders

- **Lecture 1:** Menopause.
 - Definition.
 - Physiological changes during the menopause.
 - Hormone replacement therapy.
- **Lecture 2:** Postmenopausal bleeding.
 - Definition, causes and management of post menopausal bleeding.

Module 7: Benign conditions affecting the vulva, cervix and uterus

Subject: Conditions affecting the vulva.

➤ **Lecture 1,2:**

- Brief review of relevant anatomy and physiology.
- Clinical assessment of vulval complaint.
- Differential diagnosis of vulval complaint.
- Treatment principles in general.
- Important notes about specific conditions affecting the vulva.

Subject: Benign disease of the cervix and uterus.

➤ **Lecture1, 2:**

- Normal cervix and the transformation zone.
- Benign lesion affecting the cervix (cervical ectropion, Nabothian cysts (follicles), cervical polyp, cervical trauma, cervical stenosis).
- Benign problems of the uterus (trauma, uterine polyp, Asherman syndrome).

Module 8: Tumors of the genital tract

Subject: Premalignant and malignant diseases of the vulva and vagina.

➤ **Lecture 1,2:**

- Vulval intraepithelial neoplasia.
- Vaginal intraepithelial neoplasia.
- Vulval cancer.
- Vaginal cancer.

Subject: Premalignant and malignant disease of the cervix.

➤ **Lecture 1,2:** Cervical intraepithelial neoplasia (CIN), and cervical intraepithelial glandular neoplasia (CIGN):

- Definition.
- Histopathological aspects.
- Screening (cervical screening program).
- Management.

➤ **Lecture 3:** Malignant disease of the cervix.

- Histological types.
- Presentation.
- Risk factors.
- Staging.
- Investigation.
- Treatment.
- Prognosis.

Subject: Benign and malignant tumour of the uterus

- **Lecture 1:** Fibroids.
 - Definition, incidence, types, presentation and management
- **Lecture 2,3:** Premalignant and Malignant disease of the uterus and rare tumors:
 - Endometrial hyperplasia.
 - Endometrial carcinoma: Histological types, presentations, staging, investigations, treatment, and prognosis.
 - Uterine sarcoma.

Subject: Benign and malignant tumour of the ovary.

- **Lecture 1,2:** Benign tumor of the ovary:
 - Histopathological types, including types of functional ovarian cyst.
 - Presentation.
 - Few points about common examples of benign ovarian tumor .
- **Lecture 3:** Malignant tumor of the ovary- part 1:
 - Histological types.
 - Presentation.
 - Staging.
- **Lecture 4:** Malignant tumor of the ovary- part 2:
 - Investigation.
 - Treatment.
 - Prognosis.
 - Borderline ovarian tumor.

Subject: Gestational trophoblastic neoplasia

- **Lecture 1:**
 - Invasive mole, choriocarcinoma, placental site trophoblastic tumor:
 - Histopathology , presentation, staging and management

Module 9: Urogynecology

Subject: Uterovaginal prolapse.

- **Lecture 1,2:**
 - Anatomy of the pelvic floor & levels of vaginal support.
 - Definition & incidence.
 - Classification & grading of prolapse.
 - Etiology of prolapse.
 - Clinical assessment & differential diagnosis.
 - Prevention of prolapse.
 - Management of prolapse.

Subject: Urinary incontinence.

➤ **Lecture 1,2:**

- Definition.
- Relevant anatomical and physiological aspects.
- Types.
- Assessment of patient with urinary incontinence.
- Urodynamic studies.
- Stress urinary incontinence: definition, causes and presentation and management.
- Detrusor over activity: definition, causes, presentation, and management.

Module 10: Family planning

Subject: Hormonal contraception

➤ **Lecture 1:** Combined hormonal contraceptives:

- Types, mode of action, clinical uses, contraindications and side effects.

➤ **Lecture 2:**

- Progesterone only contraceptives.
- Long acting reversible contraceptives.

Subject: Natural method of contraception, intrauterine contraceptive device, and sterilization.

➤ **Lecture 1,2:**

- IUCD: mode of action, uses and insertion, contraindications, side effects and complication - Natural family planning methods: notes about different methods.
- Sterilisation: notes about different procedures.

Module 11: Common gynecological operations.

➤ **Lecture 1:** Minor gynaecological operations:

- Dilatation and curettage
- Colporrhaphy “anterior and posterior” and perineorrhaphy

➤ **Lecture 2,3:** Major gynecological operations:

- Hysterectomy.
- Myomectomy.
- Ovarian cystectomy: important notes about the procedure.

Module: Miscellaneous subjects in gynecology

- **Lecture 1:** Chronic pelvic pain - definition, causes and management.
- **Lecture 2,3:** Hormone therapy in gynecology.
 - Hypothalamic and pituitary hormones (GnRH agonist and antagonist, gonadotrophines).
 - Gonadal hormones (estrogen ,antiestrogen ,progesterone ,combined preparation ,antiandrogen).
- **Lecture 4:** Medico- legal aspects in gynecology.
 - Consent obtaining.
 - Confidentiality.
 - Medical negligence occurrence and how can doctors protect themselves from it.
 - Example in obstetrics and gynecological practice.
- **Lecture 5:** Imaging in gynecology.
 - Ultrasound features of common gynaecological pathology.

Practical hours

- Gynecological history
- Gynecological examination
- Cases presentations and discussion

Radiology

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he/she has made maximum use of the available learning opportunities.

Educational Institution/ college	University of Mosul / college of medicine	
Department offering the course	Radiology	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 / 5 th year	
Title of the course	Radiology	
Code	Radiology/McRa509	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 30	Total= 60
	Theoretical hours= 30	
Date of specification approval	20-9-2022	

General Aims of Course

This course includes diagnostic radiology teaching and learning of students in the skills of radiological diagnosis that allows them to study and analyze clinical cases in order to provide health and humanitarian care for patients and raise students' efficiency scientifically and practically by providing students with academic medical information necessary to diagnose common or emergency conditions with a focus on Development of the student's ability to develop radiological diagnostic skills and explain ethical principles in dealing with pathological conditions and communication skills with the patient

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding	<ol style="list-style-type: none">1 - Managing various health needs of the community in the various medical fields .2 - Effective communication with patients and their relatives, and the health staff as a whole in a way that preserves all social and behavioral values .3 - Obtaining the latest advanced medical information using the latest medical technologies such as evidence-based medicine .4- Completion medical specialization in various fields through postgraduate studies (diploma, master, doctorate, board) .5 - Management of various health fields when necessary .6- Work and live as community leaders by giving the patients a good role and example in the community .G-Solving societal health problems whenever they are found7-Developing the standards and skills of the college’s teaching staff by learning and continuing medical training through workshops and conferences .8-Working on developing and building high-level medical research in various fields and publishing it.9. In addition to supporting teaching staff by writing scientific books necessary for teaching process10-Support and communication with all institutions of civil society in the governorate and the country
Intellectual Skills	<ol style="list-style-type: none">1 - Reading radiographic films related to common and practical emergency situations .2 - Determining 'the most important radiological manifestations of clinical diseases, including emergency conditions .3 - Interpretation of the radiological manifestations of clinical cases in terms of anatomically, satisfactory, functionally and diagnostic importance . <p>Activation of cognitive thinking skills to the students can be achieved properly by discussing the topic before presenting the lecture to the students .</p>

Professional Skills	<p>1 - The student will be able to work in hospitals and institutions after acquiring the technical skills that qualify him to do this program</p> <p>2- Enable the student to be aware of safety issues from the dangers of human diseases.</p> <p>3-Studying the means of analysis and measurement of models taken from the human body especially blood and other pathological models which help in diagnosing diseases or evaluating the health or treatment status in relation to the radiological findings & make a correlations.</p> <p>4. Enable the student to communicate with his patient and understand his health problem. Objectively, he will be able to examine the patient clinically, correlate & merge the case optimally with the radiological findings for the best successive medical diagnosis.</p> <p>All the mention above can be achieved by Knowing the perfect 'Principles and Methods of Reading Radiological Films in the correct scientific way & Knowing the proper normal Radiologic anatomy</p>
General and Transferable Skills	<p>1-Using the computer and data show to show illustrative films.</p> <p>2-Teaching the art and communication skills through . practical lessons conducted in front of students</p> <p>3-Allow the students to conduct simple research in . order to qualify them to conduct broader research</p> <p>4-Encouraging the students to participate in international . and international student conferences</p>
Attitude outcomes	<p>Continuous teaching & using various methods of learning & assessment activities allow students to develop deep content knowledge. Importantly, supports development of students skills in critical thinking, collaboration, creativity and Encourage them to be reflective thinkers and check for comprehension & interactive with the surroundings.</p>

Course structure			
Topic	No. Of lectures	No. Of clinical hours	Lecturer
Respiratory system	6	6	Dr. Wasan Ali Attia
Musculo Skeletal system	6	6	Dr. Dalya Abdulqader Noori Al -Falaki
Gastro intestinal Radiology	6	6	Dr. Hadeel Muhammad Farook Ahmed Al –Hialy Dr. Marwa Ismail Khalaf Al –Khafaji
Genito Urinary system	4	4	Ahmad Azhur Hashim
CT & MRI Radiology	4	4	Dalya Abdulqader Noori Al-Falaki Hadeel Muhammad Farook Ahmed Al – Hayaly
Gyne. & Obstetric Radiology Mammography	4	4	Muammar Abdel Ghafour Ibrahim Agha

Teaching and learning methods	
1. Theoretical lectures	30 lectures covered in the following seven mentioned Modules
Practical labs or clinical sessions	The students are divided into small groups each of 10 students
Seminars and presentations	the students presented seminar & medical poster at the end of practical Radiology course , designed for each group separately .

Assessment methods	
Formative assessments	<p>1. Clinical exams conducted by the department at the end of each training period</p> <p>2. Evaluation of working hours: Attending lectures.: attendance and absence weekly for the clinical teaching course , seminars , doing full report in radio diagnosis for 3 cases , in addition to other scientific events all are recorded in Logbook book</p> <p>3. Evaluation of the seminars provided by the students</p> <p>4 Half year exam , Theoretical exams (that include multiple questions MCQ & short Essay) , Use of electronic correction device OMR</p> <p>5. Final year exam , Theoretical exams (that include multiple questions MCQ & short Essay) , Use of electronic correction device OMR</p> <p>6. Daily quizzes .</p> <p>7. Evaluation of working hours: Attending lectures</p>
Summative assessments	<p>1. Paper-based test/assessment through mid-year and final year exams</p> <p>2. Observation/evaluation during the lecture through participation .</p> <p>3. Evaluate a lecture by the students at the end of the semester</p>
Pass mark	50%

Resources and requirements	
Essential text books	1. The systematic book Armstrong for Medical Students
Recommended text books	1. David Sutton 2. Atlas of Radiologic Anatomy 3. Medical Imaging
Other resources	WWW/Radiopaedia.com WWW/radiology online .com

Theoretical lectures

Module: chest

- **Lecture 1**
 - Introduction for imaging, normal chest, radiological views, normal radiological anatomy, interpretation for chest radiography.
- **Lecture 2**
 - Pulmonary infections, types of pneumonias, different radiological appearances, lung abscesses.
- **Lecture 3**
 - Obstructive pulmonary disease, collapse of the lung, sites and radiological features, emphysema.
- **Lecture 4**
 - Pleural diseases, effusion, pneumothorax, fibrosis and adhesions, plural tumors.
- **Lecture 5**
 - Pulmonary tumors, definition, types, primary tumors, and secondaries.
- **Lecture 6 :**
 - Mediastinum: definition, anatomy, lesions
- **Lecture 7:**
 - Radiology of Heart: anatomy, measurements, diseases
 - Congenital heart disease: types, radiological features.

Module: musculoskeletal imaging.

- **Lecture 1:**
 - Congenital anomaly of the musculoskeletal system.
 - osteochondritis.
- **Lecture 2:**
 - Bone and joint infection.
- **Lecture 3:**
 - Metabolic bone disease.
- **Lecture 4:**
 - Bone tumour.
- **Lecture 5:**
 - Bone fractures radiology

Module: MRI

- **Lecture 1:**
 - Definition , basic principles of MRI.
- **Lecture 2 :**
 - MRI imaging features of congenital anomaly of brain and MRI imaging features of disease of white matter disorder.
- **Lecture 3:**

- Advantage, indication of MRI of the spine and MR imaging features of Spondylosis.

Module: GIT

- **Lecture 1 :**
 - radiological investigations of GIT
- **Lecture 2 :**
 - Normal anatomy , investigations ,Diseases of the esophagus
- **Lecture 3 :**
 - Normal anatomy , investigations ,Diseases of Stomach and duodenum
- **Lecture 4:**
 - Large & small bowel: investigations & radiological features of diseases
- **Lecture 5:**
 - Acute abdomen: definition, causes, types, radiological features.

Module: CT scan

- **Lecture 1:**
 - Introduction, Principle of CT examination, and CT imaging features of the brain (normal anatomy & diseases of the brain)
- **Lecture 2 :**
 - CT examination of the abdomen, Normal anatomy & diseases.
- **Lecture 3 :**
 - CT examination of the chest & paranasal sinuses and nose, anatomy & pathology

Module: imaging of the Breast diseases

- **Lecture 1:**
 - Imaging features of breast masses

Module: Urinary system

- **Lecture 1:**
 - Introduction
- **Lecture 2 :**
 - Renal congenital anomalies: definitions, types & radiological features.
- **Lecture 3 :**
 - Types , causes, radiological features of Obstruction of urinary system
- **Lecture 4:**
 - Renal infections & radiological features.
- **Lecture 5:**
 - Renal tumors & radiological features.
- **Lecture 6:**
 - ultrasound of female reproductive system : definition, types & imaging features of obstetric & Gynecological pathologies

Practical course

practical radiology course include the following points

- 1. interpret the Radiologic manifestation of the most important clinical cases by using various methods of learning activities**
- 2. Learn & train the students to have a skill who to read a radiographic films that are related to main important disease & body system .**
- 3. At the end of practical course the students presented seminar , medical posters & three radiology cases in various imaging modalities .**
- 4. Training have been done in Radiology medical unit , visiting radiology units of medical research units related to University of Mosul .**
- 5. practical Modules include the most important system**
 - Musculoskeletal system .**
 - Gastro intestinal system**
 - Genito Urinary system**
 - Cardiovascular system & mediastinum**
 - Respiratory system**
 - US of obstetric & Gynecology**
 - CT & MRI imaging**

Family Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Family and Community Medicine	
Name of Academic Program	MBCbB	
Academic Year/level	2022-2023 / 5 th Year	
Title of the course	Family Medicine	
Code	Mcco510	
Link	http://uomosul.edu.iq/pages/ar/medicineMosul/97067	
Total Course Hours	Practical hours= 30	Total= 45
	Theoretical hours= 15	
Date of specification approval	11 th Nov. 2022	

General Aims of Course

The course aims to provide students with adequate training in all fields of family medicine, so that the student is able to diagnose and adequately manage common health problems and take the necessary decision for diagnosis and treatment of all family members regardless of age, gender and type of disease.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	1. Recall the basic principles of Family Medicine and its applications.
Intellectual Skills	1. Develop skills in accessing relevant medical information including history, clinical examination, and investigations in Primary Health Care and to apply it to the specific context. 2. Demonstrate critical thinking and create solutions for each health problem presented in Primary Health Care.
Professional Skills	1. Present the ability to conduct medical counseling and health education in Primary Health Care Setting. 2. Build on their skills as good communicators by demonstration cultural competence in working in Primary Health Care. 3. Develop diagnostic and therapeutic skills for prevention and treatment of common health problems.
General and Transferable Skills	1. Develop Knowledge and skills to apply population health approach in developing health services.
Attitude outcomes	

Course structure			
Topic	No. Of lectures	No. Of Clinical hours	Lecturer
Family Medicine Principles	4		Dr. Zaid M. Yassen Dr. Anmar B. Saeed Dr. Ruqaya A. Salih
Preventive medicine and periodic medical examination	2		Dr. Zaid M. Yassen Dr. Anmar B. Saeed Dr. Ruqaya A. Salih
Management approach of chronic and acute common clinical conditions	9		Dr. Zaid M. Yassen Dr. Anmar B. Saeed Dr. Ruqaya A. Salih
Clinical training in PHC centers on family medicine programs		30	Dr. Zaid M. Yassen Dr. Anmar B. Saeed Dr. Ruqaya A. Salih

Teaching and learning methods	
4. Theoretical lectures	
5. Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
6. Seminars and presentations	

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Quizzes 2. Logbook 3. Clinical Exams
Summative assessments	<ol style="list-style-type: none"> 1. Written examination (MCQ, problem solving, short Essay, critical decision making) 2. Objective structured clinical examination 3. Oral Examination
Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Swanson's Family Medicine Review, 9th Edition 2. Case files in family Medicine 4th Edition
Recommended text books	<ol style="list-style-type: none"> 1. Bratton's Family Medicine Board Review, 5th Edition
Other resources	<p>American Academy of family physicians</p> <p>AAFP.org</p>

Theoretical lectures

- **lecture 1:** Principles and concept of Family Medicine
 - The main concept of Family Medicine.
 - The important elements in Family Medicine.
 - Components in Family Medicine.
 - The importance of Family Medicine.
 - Health care services provided by the Family Medicine
- **lecture 2:** Medical Consultation and Patient management
 - Define consultation.
 - Tasks of consultation.
 - Elements of patient management .
 - Indications of prescription and referral .
- **lecture 3:** Screening in Family Medicine
 - Periodic health examination
 - Iceberg phenomenon of disease.
 - Levels of prevention.
 - Screening programs for diseases in adults.
- **lecture 4:** Counseling in Family Medicine
 - Define counseling.
 - List the Stages of behavioral Change.
 - Define the Barriers to offering preventive services .
- **lecture 5:** Communication skills in Family Medicine and dealing with difficult patient
 - Define communication skills.
 - Methods of communicating different types of patients.
 - Barriers to good communication .
- **lecture 6:** Approach to fever in children
 - Fever in infants and young children.
 - Methods of measuring body temperature in children.
 - Causes of fever in children.
 - Approach fever in children to reach diagnosis.
- **lecture 7:** Approach to Somatization
 - Define somatization.
 - The clinical presentation of somatizing patients.
 - The management plan for somatizing patients.
- **lecture 8:** Approach to family planning
 - Define family planning.
 - The methods of family planning.
 - Method of family planning for each client.
- **lecture 9:** Approach to chest pain
 - Categories of chest pain.
 - The clinical presentation of different causes of chest pain.
 - The management plan for chest pain patients.
- **lecture 10:** Approach to red eye
 - Define red eye.
 - The natural history and epidemiology of red eye.

- The most important causes of red eye.
- how to approach red eye to reach diagnosis.
- The outlines of treatment of red eye.
- **lecture 11:** Approach to shortness of breath
 - Categories of shortness of breath.
 - The clinical presentation of shortness of breath.
- Management plane of shortness of breath
- **lecture 12:** Approach to headache
 - : To define headache.
 - The natural history and epidemiology of headache.
 - Important causes of headache.
 - Approach headache to reach diagnosis.
 - Outlines of treatment of headache.
- **lecture 13:** Approach to pallor
 - Pallor causes.
 - Approach pallor cases to reach diagnosis.
 - The outlines of treatment of pallor .
- **lecture 14:** Approach to joint and back pain
 - LBP, the natural history and epidemiology of LBP.
 - Causes of LBP.
 - Approach LBP to reach diagnosis.
 - The outlines of treatment of LBP.
- **lecture 15:** Approach to dizziness
 - Dizziness causes.
 - Approach dizziness cases to reach diagnosis.
 - The outlines of treatment of dizziness.

Clinical training

- Practical clinical experiences.
 - The approach to patient in primary health care.
 - Clinical examination skills
 - Diagnosis
 - Management of common medical illnesses.
 - Training in family medicine units, maternal and child health care units, immunization unit, and school health unit.

منهاج المرحلة السادسة

SIXTH YEAR CURRICULUM

توزيع الوحدات والساعات للمرحلة السادسة

ت	المواد الدراسية	عدد الساعات النظرية	عدد الساعات السريرية	عدد الوحدات النظرية	عدد الوحدات السريرية	مجموع عدد الوحدات
١	الطب الباطني	-	٣٦٠	-	١٢	١٢
٢	الجراحة	-	٣٦٠	-	١٢	١٢
٣	النسائية والتوليد	-	٣٠٠	-	١٠	١٠
٤	طب الأطفال	-	٣٠٠	-	١٠	١٠
	المجموع	-	١٣٢٠	-	٤٤	٤٤

SIXTH YEAR UNITS AND HOURS DISTRIBUTION

	Scholastic subjects	Theoretical hours	Clinical hours	Theoretical units	Clinical units	Total units
1	Medicine	-	360	-	12	12
2	Surgery	-	360	-	12	12
3	Gynecology & Obstetrics	-	300	-	10	10
4	Pediatrics	-	300	-	10	10
	Total	-	1320	-	44	44

Medicine

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Department of medicine	
Name of Academic Program	MBChB	
Academic Year/level	2022-2023 /6 th year	
Title of the course	Internal Medicine	
Code	MCMd601	
link	https://drive.google.com/drive/folders/10K0_qVMO_9YqjMsjCdbWGHadY5GkqEmD?usp=share_link	
Total Course Hours	Practical hours=360	Total=360
Date of specification approval	11/11/2022	

General Aims of Course

The course aims to train students of the sixth stage how to diagnose and treat internal Medicine diseases clinically, and reviewing most of general internal medicine diseases and their specializations as well as weekly seminars which held throughout the year under the supervision of the lecturers to discuss various topics and to evaluate the verbal performance of a student.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Define the internal medicine diseases 2. Identify its clinical features. 3. Know the clinical and laboratory methods of diagnosing diseases. 4. Select the appropriate investigations required for diagnosis 5. Know the medications that are used in the treatment of diseases and their complications.
Intellectual Skills	<ol style="list-style-type: none"> 1. Take appropriate history from the patients 2. detect physical signs 3. Interpret the result of clinical data 4. Solve Medical cases
Professional Skills	<ol style="list-style-type: none"> 1. Assess the severity of the disease 2. Judge the priority of the treatment 3. Formulate treatment outline. 4. Manage medical emergencies.
General and Transferable Skills	<ol style="list-style-type: none"> 1. Practice safe medicine 2. Identify critical cases and emergencies 3. Able to manage emergencies appropriately 4. Arrange for consultations when required 5. Participate in continuous medical education program 6. Document medical records
Attitude outcomes	Practice medicine with consideration of law and ethics in the hospital along with other health professionals and societies

Course structure			
Topic	No. Of hours	No. Of Seminars	Names of lectures
Cardiology	40	5	Dr Jassem Mohamed Dr. Thia Abd Kader Dr Arwa al sarraf Dr Mohamed Abd Hadi

Respiratory	40	5	Dr Rami Adil DR Mohamed Jaseem
Endocrine	30	5	DR Wael THanoon DR Mohamed Harith Dr Mohamed Gazi
Nephrology	30	5	Dr Mohamed Gazi Dr Ahmed Mohamed
Gastro-enterology	30	5	Dr Abdallh Zuhair Dr Alya Al Zobair
Infectious diseases	30	5	Dr Nassar Galib Dr Salam Fadi
Immunological diseases	10	5	DR Ali Abd Al Rahman
Hematology	30	5	Dr Khalid Al Heroo Dr Alya Al Zobair
Rheumatology	30	5	DR Fakher Yousif DR Ali Abd Al Rahman DR Zahra Amer DR Sara HAMED
Neurology	40	5	DR Yahya Kaseem Dr. Omer Abd Al meinm

Teaching and learning methods	
Theoretical lectures	Not applicable
Practical or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	50 seminars in teaching halls and hospital wards

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Clinical 2. Logbook 3. Seminars
Summative assessments	<ol style="list-style-type: none"> 1. Clinical 50% 2. Theoretical 50%
Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Davidsons Principle and practice of Medicine 2. Macleod's clinical examination
Recommended text books	<ol style="list-style-type: none"> 1. Harrison Textbook of Medicine
Other resources	Up to date, Medscape website

Training hours

The training consist of:

- 12 weeks in the general internal medicine including the general medical wards, ER, ICU and CCU
- Seminars 2 /week

Seminars in Internal Medicine:

Module: Cardiology

- Acute circulatory failure
- Acute coronary syndrome
- Heart failure
- Approach to chest pain
- Palpitation
- Cardiomyopathy

Module: Respiratory medicine

- Acute dyspnea
- Heamoptysis
- O2 therapy
- Chronic extensional dyspnea
- Respiratory support
- Pleural effusion
- Covid -19

Module: Gastroenterology

- Upper GIT bleeding
- Dyspepsia
- Malabsorption
- Chronic diarrhea
- Jaundice
- Wt loss
- Ascites
- Liver transplantation

Module: Rheumatology

- Mono arthritis
- Polyarthropathy
- Backache
- Seronegative arthropathy

Module: Neurology

- Coma
- Paraplegia
- Headache

- Hemiplegia
- Acute confusion stat
- Lesion localization in neurology
- Epilepsy

Module: Hematology

- Transfusion
- Pancytopenia
- Bleeding tendency
- Anemias .
- Hemolytic anemia

Module: Nephrology

- Acute presentation of uremic patients
- Proteinuria
- Oedema
- Haematuria
- Glomerulonephritis

Module: Infectious diseases

- Approach to febrile patient
- PUO
- Antibiotic therapy
- Sepsis
- Covid 19

Module: Endocrinology

- Emergencies in endocrinology
- Diabetic ketoacidosis

Module: Environmental diseases

- Acute poisoning
- Environmental hazards and scorpion stings

Module: psychiatry

- Delirium

➤ **Log book.**

General Surgery

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	University of Mosul / College of Medicine	
Department offering the course	Surgery	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023 / 6th year	
Title of the course	General Surgery	
Code	MCSu604	
Total Course Hours	Practical hours= 360	Total= 360 hours
Date of specification approval	1 / 10 / 2021	

General Aims of Course

The course describes the advanced knowledge of Surgery and it's departments to the medical students in order to build the clinical knowledge and clinical skills in diagnosis and treatment of the different surgical diseases including the emergent conditions, so optimize the medical services to the society.

<u>Intended learning outcomes of the course:</u>	
By the end of the course, students should be able to:	
Knowledge and understanding:	<ol style="list-style-type: none"> 1. Identify the advanced knowledge of Surgery. 2. Identify the advanced knowledge of departments of Surgery. 3. Identify the advanced Skills of the clinical examination.
Intellectual Skills	<ol style="list-style-type: none"> 1. Realize the best method of taking the Medical history. 2. Realize the best method of the clinical examination.
Professional Skills	Differentiate between the different surgical diseases. Illustrate the clinical examination of abdomen and other parts of body Elicit the emergent cases and how deal with them
General and Transferable Skills	Recognize the advanced knowledge of Surgery and its departments and how will cooperate with clinical skills
Attitude outcomes	<ol style="list-style-type: none"> 1. Recognize any ethical problems in relation to the topics and act accordingly. 2. Recognize the importance of respect of the patient's dignity and privacy.

Lecturer	Hours of Clinical Session / Course
Samir Ibrahim Al – Safaar	15
Mahoomd Al- Jumaily	15
Abdulsalam Thanon	15
Mohanad Adnan Bakr	25
Karm Kamal	20
Firas Mahmmud	20
Khalf Rashaiid	20
Basam Khalid	20
Nuaman Hadii	15
Odyi Hanii	15
Zaid Sadaldeen	15

Asraf Ibrahim	15
Muddather Abdulaziz Mohammed	15
Mohammed Inaam	15
Dina Abdulghani	15
Sahar Habeeb	15
Zaid Shanshal	15
Zaid Tarq	15
Mohammed Atallah	15
Ali Hasan	15
Omer Saad	15
Obai Abdulaziz	15

Teaching and learning methods	
Theoretical lectures	
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	The students are divided into small groups to do seminars

Assessment methods	
Formative assessments	20% Clinical Examination of course(OSCE stations & Slides)
Summative assessments	40% Final Written Examination (MCQ and Essay systems) 40% Final Clinical Examination(OSCE stations & Slides)
Pass mark	50%

Resources and requirements	
Essential text books	1.Baily and Love's Textbook / Short Practice of Surgery
Recommended text books	1.Brows Textbook of Clinical examination
Other resources	Websites

Clinical Training Hours

- **The clinical training** consist of
 - General surgery
 - Orthopaedic surgery.
 - Urinary tract surgery.
- **Tutorials** 1 /week--liver, Breast, Cancer, Biliary Tree and Spleen.
 - Management of abdominal injuries (mechanisms ,features, assessment, indications for Surgery, management.
 - Common surgical equipments & instruments (common instruments, uses, common tubes, catheters ,T- tubes ,chest tube ,fogarty catheters, cannula & I.V set. Airway resuscitation instruments.
 - Management of severely injured & polytrauma (resuscitations, ATLS)
 - Fluid & electrolyte balance: preoperative and postoperative .
 - Introduction for OSCE evaluation.
 - Management of Acute Abdomen.
 - Managements of surgical jaundice (Definition major causes clinical presentation,differential diagnosis laboratory tests -Imaging studies)
 - Preoperative Preparations.
 - Common neonatal and pediatric surgical Problems.
 - Managements of painful anal conditions (Causes /Diagnosis/ Treatment).
 - Acute scrotal conditions
 - Management of open fractures
- **Log book.**
- **PBL.**
- **Seminars**

Gynecology and Obstetrics

Course Description

This course includes the scientific, practical and cognitive construction of the subject of obstetrics and gynecology for students of the sixth stage in the Faculty of Medicine. It includes introducing students to the basic skills that allow them to study and analyze study cases in order to provide health care and raise the efficiency of students scientifically and practically. By providing students with the academic medical information necessary to care for the pregnant woman and the foundations of the birth process and the diagnosis of pathological conditions and complications that may accompany pregnancy and childbirth. It also includes the diagnosis of gynecological diseases with emphasis on developing the student's ability to develop clinical skills and explain ethical principles in dealing with pathological conditions and communication skills with the patient.

Educational Institution/ college	CMUM	
Department offering the course	Gynecology and Obstetrics	
Name of Academic Program	M.B.Ch.B	
Academic Year/level	2022-2023/ 6 th year	
Title of the course	Gynecology and Obstetrics	
Code	MCOg603	
Total Course Hours	Practical hours=300 hours	Total=300 hours
Date of specification approval	1/9/2022	

General Aims of the Course:

Building knowledge, ability and skill to accommodate the scientific foundations in the subjects of obstetric and understand the terms of the scientific and practical material.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. identify the physiological and anatomical changes that occur in the female reproductive system and the rest of the body systems during pregnancy and childbirth.1. explain the steps of primary health care of pregnant woman.2. describe the foundations of childbirth.3. define and illustrate the basics of diseases and complications that affect women during pregnancy, childbirth and puerperium.4. summarize the physiology and anatomy of the female reproductive system.5. explain the basics of diseases affecting the female reproductive system, including infections affecting the female reproductive system, menstrual disorders, disorders that occur after menopause, tumors that affect the female reproductive system of both benign and malignant types, in addition to gynecological diseases that affect girls in childhood and adulthood.
Intellectual Skills	<ol style="list-style-type: none">1. obtain the history of the pathological condition correctly from the patient and link it to the clinical data of the clinical examination and the results of laboratory or imaging tests to reach the correct diagnosis of the pathological condition and its treatment.2. utilization of the results of laboratory or imaging tests used in diagnosis.

Professional Skills	<ol style="list-style-type: none"> 1. Conduct the primary health care to pregnant women. 2. distinguish the childbirth and plan for its management. 3. diagnose and treat complications and diseases that affect women during pregnancy, childbirth and puerperium, especially common and emergency, in addition to conducting the necessary clinical examination 4. communicate effectively with the patients. 5. diagnose and treat diseases affecting the female reproductive system (especially common and emergency ones). 6. perform a gynecological clinical examination including "taking swabs and a pap smear" and interpret the clinical finding during examination .
General and Transferable Skills	<ol style="list-style-type: none"> 1. Develop his or her ability to deal with the patient after graduation. 2. Research scientific sources related to the subjects of obstetrics and scientifically approved websites to update his or her scientific knowledge.

Teaching and learning methods	
Theoretical lectures	None
Practical labs or clinical sessions	The students are divided into small groups each of 10-15 students
Seminars and presentations	12 tutorials

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Mini clinical exam(Mini cx). 2. Case based discussion (CBD). 3. Direct observational procedures(DOP).
Summative assessments	<ol style="list-style-type: none"> 1. Essay. 2. MCQ. 3. OSCE. 4. Oral clinical exam.
Pass mark	50%

Resources and requirements	
Essential text books	<ol style="list-style-type: none"> 1. Obstetric by ten teachers 2. Gynaecology by ten teachers
Recommended text books	<ol style="list-style-type: none"> 1. Dewhersts textbook of obstetrics and gynaecology. 2. Essential textbook of obstetrics and gynaecology.
Other resources	<ol style="list-style-type: none"> 1. Lectures given by lecturers in the 4th and 5th year. 2. workshops, journals and websites.

Clinical hours

- **Training consist** of 10 weeks in obstetrics and gynecology
- **Tutorials**
 - Caesarean Section.
 - Vaginal Breech delivery.
 - Use of Partogram in labor.
 - Instruments in obstetrical and gynecological operations .
 - Operative vaginal delivery
 - Instrumental delivery.
 - Major and Minor gynecological operation
 - Hysterectomy and myomectomy
 - Laproscopy and hysteroscopy
 - Spontaneous and induced labour .
 - Malposition .
 - Episiotomy/ cervical cerclage / surgical management of miscarriage
 - Abnormal uterine bleeding
 - Subfertility
 - Infections in gynecology
 - Infertility.
 - Ectopic pregnancy.
- **Log book.**
- **Seminars**

Pediatrics

Course Description

This course description provides a brief summary of the most important characteristics of the course and list the learning outcomes expected from the student to achieve when he has made maximum use of the available learning opportunities.

Educational Institution/ college	CMUM	
Department offering the course	Pediatrics	
Name of Academic Program	M,B,Ch,B	
Academic Year/level	2022- 22023 / 6 th year	
Tilte of the course	Pediatrics	
Code	MCPe604	
Total Course Hours	Practical hours= 300	Total=300
Date of specification approval	12-1-2022	

General Aims of Course

In this course, students learn the science of pediatrics as well as the basic skills of pediatrics that enable them to analyze clinical cases to provide health and humanitarian care to patients and increase their scientific and practical efficiency. It also provides students with the academic medical information necessary to diagnose common or emergency pediatric cases. Student development will focus on learning clinical skills as well as understanding ethical principles in dealing with pediatric cases. In addition, students will develop communication skills with the patient and his family.

Intended learning outcomes of the course:

By the end of the course, students should be able to:

Knowledge and understanding:	<ol style="list-style-type: none">1. Implement the guidelines to ensure proper communication and interaction with the patient, and analyze the medical record to accurately comprehend the pathological situation.2. Determine the best strategy for obtaining, recording, and presenting a clinical case history.3. Identify" the most important clinical manifestations of pediatric diseases including emergency cases4. Compare the results of clinical evaluation with the results of laboratory tests to reach a diagnosis of pathological conditions and in a correct academic way
Intellectual Skills	<ol style="list-style-type: none">1. Conduct clinical examinations relevant to common emergencies2. Troubleshooting of the pathogenic symptoms in pediatric cases from the perspectives of anatomy, pathology, function, and diagnostic significance3. Compose a differential diagnosis of common childhood diseases and what is the proposed treatment for it
Professional Skills	<ol style="list-style-type: none">1. Follow the fundamental principles while taking into account the "behaviors and privacy of the patient" during clinical examination and analysis of common pediatric diseases2. formulate management plans for common and emergency cases in pediatrics3. Identify complications of childhood diseases, and formulate a prevention and management plan
General and Transferable Skills	<ol style="list-style-type: none">1. Energizing scientific knowledge and fusing it with clinical expertise

Course structure

Topic	No. Of lectures	No. Of clinical sessions	Lecturers In all systems
Basic history and physical examination		1 week	Assistant professor Dr. Mazin Mahmoud Fawzi
Respiratory system		1 week	Assistant professor Dr. Aws Hazem Ahmed
Gastro-intestinal system		1 week	Professor Dr. Rikan Suleiman Juma

Cardio-vascular system		1 week	Professor Dr. Riyad Abdullatif Al-Obeidi
Haemato-oncology system		1 week	Assistant professor Dr. Nada Ali Ahmed
Neonatology		1 week	Assistant professor Dr. Rabie Yassin Al-Dabouni
Neonatology		1 week	Assistant professor Dr Ghaith Waddah
Skill lab (advanced and basic life support)		1 week	Dr. Nizar Abdelkader Qandala
Endocrinology		1 week	Dr. Farah Samir Yahya
Nephrology		1 week	Dr. Noor Samir Yahya
			Dr. Noor Buraq
			Dr. Gesar Salim

Teaching and learning methods	
<ul style="list-style-type: none"> Tutorials 	
<ul style="list-style-type: none"> Clinical sessions in pediatric wards, neonatal care units "Teaching Hospital", primary health care center and skills laboratory (using models or educational dolls and computers to display pictures of some cases of pediatrics, newborns and preterm infants or videos to learn the method of clinical examination) 	The students are divided into small groups each of 10-15 students
<ul style="list-style-type: none"> Seminars and presentations 	

Assessment methods	
Formative assessments	<ol style="list-style-type: none"> 1. Case-based discussion (CBD) 2. Mini-CEX
Summative assessments	<p>1- 20% of the final grade for comprehensive written, clinical and slides examination conducted by the department at the end of each training period</p> <p>2- Final examination</p> <p>Theoretical end-of-year exam = 40% of the final grade</p> <p>OSCE Clinical End of Year Exam = 40% of Final Grade</p>
Pass mark	50%

Resources and requirements	
Essential text books	Nelson essentials of pediatrics (eighth edition) 2018
Recommended text books	<ol style="list-style-type: none"> 1. Illustrated textbook of Paediatrics (sixth edition) 2022 2. Nelson textbook of pediatrics (21th edition)
Other resources	NICE guidelines, ROME IV Criteria, Ispad guidelines 2022

Clinical hours

Pediatrics clinical training will provide the foundation of knowledge and skills which students will need in pediatric medicine, the overarching goal is to prepare students to care for children and their families.

Intended learning outcomes:

- 1: Perform complete or directed pediatric-focused histories and physicals when appropriate.

- 2: Acquire and apply evidence-based knowledge about pediatric-specific conditions and diseases.

- 3: Demonstrate effective interpersonal communications skills with patients and as a member of the healthcare team.

- 4: Demonstrate professional characteristics as a student doctor and a member of the healthcare team.

Curriculum completion, revision and development Policy

**University of Mosul
College of Medicine**



<p>Policy Number: <i>P-CMUM-CC01</i></p>			<p>Name of the Policy: Curriculum completion, revision and development Policy:</p>		
<p>Issue date: 1/9/2021</p>			<p>Issue Number: 1st</p>		
<p>Date of renewal:</p>			<p>Activation date: 1/12/2022</p>		
<p>Dr. Arwa Mahmood Fawzi</p>			<p>Prepared by: Curriculum committee of College of Medicine University of Mosul</p>		
<p>Authority: Teaching staff (TS) Scientific committees in departments(SC) Department Council (DC) Curriculum committee (CC) College Council (CCO)</p>					
<p>Date:</p>		<p>Renewal</p>		<p>Issue Number</p>	
<p>1/9/2021</p>				<p>1st</p>	
<p>1/12/2022</p>				<p>1st</p>	

Policy validation:

Curriculum completion, revision and development Policy:

The curriculum consists of all the planned activities that we deliver in order to promote learning of knowledge, skills and attitudes of graduates of medical school.

- I. CC must hold its first meeting in the academic year in first week of September to:
 1. Distribute roles and responsibilities among the committee members
 2. Issue official requests to college departments to forward contents, objectives, syllabus distribution throughout the academic year, student assessment and feedback plans that ensure continuous development and assessment of the curriculum.
 3. Organize and arrange meetings between different departments to decrease redundancy in the curriculum of the same topics.
 4. Prioritize the needs for primary stakeholder after discuss the possibility of establishing them and including their updating in the curriculum
- II. SCs hold their meetings discuss CC requests and start collecting information from department TS
- III. SCs arrange the curriculum of each course delivered by the department members, then present it to DC to be approved
- IV. Each DC hold meeting to assess and approve curriculum, then refer it to the CC
- V. CC collect all courses curriculum for the six years of medical college study, assess it, approve it and refer it to the CCO
- VI. CCO make the final approval to the curriculum after that the curriculum sent to printing and signed officially by the CC head and dean of the college
- VII. At the end of academic year feedback should be collected which may be made as surveys or interviews with the students, teachers, primary and secondary stake holders, then data will be analyzed, assessed and decisions will be taken for future development of curriculum next year.

الفهرست

الصفحة	الموضوع
II	كلمة السيد العميد/ رئيس لجنة المناهج
III	كلمة السيد معاون العميد للشؤون العلمية
IV	كلمة السيدة نائب رئيس لجنة المناهج ومعدة كتاب المنهاج
1	رسالة الكلية
3	المخرجات
5	جدول عدد الوحدات
6	جداول المواد والوحدات لجميع المراحل
8	منهاج المرحلة الأولى
88	منهاج المرحلة الثانية
161	منهاج المرحلة الثالثة
255	منهاج المرحلة الرابعة
343	منهاج المرحلة الخامسة
433	منهاج المرحلة السادسة
457	خطة مراجعة المنهاج
460	الفهرست