University of ThiQar
College of Medicine
Division of Quality Assurance
and Academic Accreditation

CURRICULUM OF COLLEGE OF MEDICINE UNIVERSITY OF THIQAR 2022-2021


جامعة ذي قار / كلية الطب
قسم التسجيل للدراسات الاولية
Student Registration - Preliminary
University of Dhi - Qar College of Medicine

Content

Table of hours/units distribution

The stage	Total of practical hours	Total of theoretical hours	Total hours	Total units
1st	**360**	**360**	**720**	36
2nd	**270**	**420**	**720**	37
3rd	**390**	**465**	**855**	44
4th	**540**	**525**	**1065**	53
5th	**420**	**450**	**870**	44
6th	**1320**	**-----**	**1320**	44
total	**3300**	**2220**	**5520**	258

Distribution of accredit unit

The stage	Units of basic sciences	Units of clinical sciences	General units	Total
1st	**30**	**-----**	**6**	36
2nd	**35**	**-----**	**2**	37
3rd	**37**	**7**	**------**	44
4th	**21**	**32**	**------**	53
5th	**-------**	**44**	**------**	44
6th	**------**	**44**	**-----**	44
total	**123**	**127**	**8**	258
%	**%47**	**%50**	**%3**	%100

University & college requeriments

The requeriment	Units	%
Universal req.	8	**%3**
College req.	250	**%97**
Total	258	**%100**

Notes

1. The theoretical and practical hours were calculated according to the requirements of the university and vocabulary of the curriculum of the Iraqi

medical colleges in the universities of Baghdad / Mustansiriya / Mosul / Basra / Kufa / Anbar / Tikrit / Babel / Qadisiya / Al- Kindy prepared by the Sectoral Committee for Medical Sciences 2001.

2. The units were calculated according to Examinations instructions No. 134 of 2000 and their amendments (149, 153, 157).

3. The human rights and democracy principles have been integrated into one article with only two units to be taught in the second phase.

4. The degree of the graduate research project shall be calculated as part of the course of community medicine in the fourth stage.

Text books

1st stage	
1	Snell clinical anatomy
2	Cunningham manual of practical anatomy vol. I
3	Cunningham manual of practical anatomy vol. II
4	Grants atlas of human anatomy
5	Ganongs review of medical physiology
6	Stuart – human physiology
7	Guide of practical physiology
8	Cameron- medical physics
9	Armitage – practical physics
10	Practical medical physics guide
11	Organic chemistry
12	Practical chemistry guide
13	Chemical basis of life
14	Medical chemistry guide
15	Silvia- biology
2nd stage	
1	Snell clinical anatomy
2	Snell clinical neuroanatomy
3	Grants atlas of human anatomy
4	Cunningham manual of practical anatomy vol. II
5	Cunningham manual of practical anatomy vol. III
6	Guyton text book of medical physiology
7	Ganongs review of medical physiology

8	Fox human physiology
9	Practical medical physiology guide
10	Harper- biochemistry
11	manual of practical clinical chemistry
12	Janquera Basic histology (text and atlas)
13	Human atlas of histology
14	Longman- medical embryology
3rd stage	
1	Muris – text book of pathology
2	Robbins – basic pathology
3	Curans atlas of histopathology
4	Jawetes – review of medical microbiology 2010
5	Reits – immunology
6	Medical parasitology John & Petri 2006
7	Practical microbiology guide
8	Daniel – biostatistics
9	Laurance – clinical pharmacology
10	Practical microbiology guide
11	Davidsons – text book of medicine
12	Hutchinsons – clinical methods
4th stage	
1	Davidsons – text book of medicine
2	Hutchinsons – clinical methods
3	Macleods – clinical examination
4	Baily and love- short textbook of surgery
5	An Introduction to the symptoms and signs of surgical
6	Demonstration of physical signs in clinical surgery
7	Nelson – essential of pediatrics
8	Short text book of public health medicine in tropics
9	A new short textbook of preventive medicine
10	Community medicine in developing countries
11	Obstetrics by ten teacher
5th stage	
1	Davidsons – text book of medicine
2	Hutchinsons – clinical methods
3	Baily and love- short textbook of surgery
4	Demonstration of physical signs in clinical surgery

5	Nelson – essential of pediatrics
6	David Hull- essential paediatrics
7	Outline of fractures
8	Outline of orthopedics
9	Synopsis of E.N.T
10	Psychiatry for students
11	Clinical dermatology
12	atlas of dermatology
13	Gynecology by ten teachers
14	Lectures notes on ophthalmology
15	Diagnostic imaging
16	Pearson- diseases of the eye
17	Kanaskis clinical ophthalmology
6th stage	
1	Davidsons – text book of medicine
2	Hutchinsons – clinical methods
3	Macleods – clinical examination
4	Baily and love- short textbook of surgery
5	An Introduction to the symptoms and signs of surgical
6	Nelson – essential of pediatrics
7	Surgical picture test
8	Clinical cases in general surgery
9	Color atlas and text of clinical medicine
10	Atlas of pediatrics and neonatology in fucos
11	Obstetrics by ten teacher
12	Gynecology by ten teachers
13	David Hull – essential pediatrics
14	Demonstration Physical signs in clinical surgery

Curriculum of First Year

Subject		Didactic hours			No. of units
		Theoretical	Practical	Discussion	
1	Anatomy	60	120	-	**8**
2	Medical biology	60	60	15	**6**

3	Medical chemistry	90	90	-	**8**
4	Medical physics	60	60	15	**6**
5	Foundation of medicine	30	-	-	**2**
6	Computer science	30	60	-	**4**
7	English language	30	-	-	**2**
	Total	360	360	-	**36**

- Numbers of units are equal to 15 theoretical hours and equal to 30

$$\frac{\text{No.of theoretical hours (lectures)}}{15} = \text{No. of theoretical units}$$

$$\frac{\text{No.of practical hours}}{30} = \text{No. of practical units}$$

- The hours of discussions are included with the total number of unit of that subject.

anatomy

no.	Topics	hrs
1	**Introduction -** Introduction to anatomy	1
2	Descriptive anatomical terms &planes	2
3	Systemic anatomy	2
4	**Upper Limb -** Bones of the upper limb	2
5	Muscles of pectoral region	2
6	Muscles of the arm	3
7	Muscles of the forearm	3
8	Muscles of the hand	2
9	Cutaneuos nerves	2
10	Venous drainage	3
11	Arteries of the upper limb	3
	Total hours	25.
1	**Lower Limb -** Introduction to lower limb	2
2	Hip & thigh muscles	2
3	Gluteal region	2
4	Knee joint	2
5	Muscles of the leg	3
6	Muscles of the foot	3
7	Arteries of the lower limb	2
8	Nerves	3
	Total hours	21.
1	**Thorax -** Thoracic wall & cavity	3
2	Intercostal space &muscles	2
3	Mediastinum	2
4	Heart & pericardeum	3
5	Lung & pleura	2
6	Diaphragm	2
	Total hours	**14 hrs.**

Clinical chemistry

Theory: 90 hours/years
Practical: 30 hours/years
Units: 8 units annually

Teaching methods (overview):
Objective:
Assessment: : Each lecture is accompanied with power point presentation , examines (quiz), and major individual project that takes the form of seminars , group & class discussion and active Participation by clinical biochemistry research .

Textbooks approved: 1.chemical bases of life….2. Organic chemistry j. lury
3.Biochemistry harper
Name of lecturer

Amino acids and proteins	Type of Amino acids	Classify each of the 20 common amino acids found in proteins according to side chain type (aliphatic, aromatic, sulfur containing, aliphatic hydroxyl, basic, acidic, amide, hydrophilic (polar), hydrophobic (nonpolar). (These categories overlap extensively, e.g., glutamate is acidic and it's very polar.) .
	Draw the structure of a typical amino acid	indicating the following features: α-carbon, α-carboxyl group, α-amino group, sidechain ("R group"),
	behavior of amino acids at acidic and basic medium	Ionic forms that predominate at acidic (say, pH 1), neutral (pH 7), and basic (pH 13) pH values.
	The ionization reactions of ionizable groups	Learn the structure of each of these 20 amino acids, with its full name and 3-letter abbreviation. DO THIS NOW – DON'T PUT IT OFF. You won't have to draw detailed structures of arginine,

		histidine, or tryptophan, but you should be able to recognize them, and draw the simpler structures,.
	Protien and four structures	Explain the 4 levels of protein structure: primary,secondary, tertiary, and quaternary
	the α- amino and α-carboxyl groups in peptides and proteins; pKa values	Be very familiar with the approximate (“typical”) pKa values of the 7 ionizable R groups (side chains) and also the α- amino and α-carboxyl groups in peptides and proteins; note that *numerical values* of these "generic " pKa values for the ionizable functional groups in peptides and proteins will be on the cover sheet of Exam 1, but the pKa values are of little use if you don't know the chemical nature of the groups (see below). You do NOT need to know the pKa values for the ionizable groups on the *free amino acids*. Write out the ionization (protonation /deprotonation) reactions for the 9 ionizable functional groups (7 side chains plus terminal α-amino and α-carboxyl groups), with appropriate structures; understand the charge properties of each form (conjugate acid and conjugate base) of each group.
Enzyme	Enzymes : Define the terms	To introduce some of the most relevant and commonly used chemical concepts, processes and naming systems. Define the following terms: a. Enzymes b. Isoenzyme c. Catalyst d. Substrate e. Product i. Activator

Enzymes		f. Activation energy j. Active site g. Cofactor k. Inhibitor h. Coenzyme
	Classification of enzymes The facters enzyme dependency	Discuss the following as they relate to enzymes: a. Chemical composition b. Biochemical function c. Importance in health and disease (biological function)
		Describe the types of enzyme specificity for substrates. Define the following terms used in describing the Michaelis-Menton curve: a. Km b. Vmax c. Zero order d. First order Differentiate zero order from first order kinetics in terms of: a. Dependency on enzyme concentration b. Dependency on substrate concentration c. Optimum phase to calculate concentration of enzymes. Analyze the following on a Michaelis-Menton curve: a. Km b. Vmax c. ½ Vmax d. Zero order e. First order
	The mechanism of the binding site of the inhibitor	Analyze how the following factors affect the rate of enzyme-catalyzed reactions: pH , Temperature , Substrate concentration , Time , Activators , Inhibitors Compare competitive, noncompetitive and uncompetitive inhibition with respect to: Reversible and irreversible effects--
	Reactions of enzymes	Differentiate an endpoint reaction from a kinetic reaction. Define the International Unit (IU) of enzyme activity.

		Discuss the type of reaction catalyzed by each of the six classes of enzymes.
Nuclic acids	4	Upon completion of this lecture, the student will have the ability to Aims: Describe the chemical structure of nucleic acids Describe the chemical structure of nitrogenous bases Discuss the differences between nucleosides and nucleotides Describe DNA molecular structure and it biological functions Describe RNA molecular structure, The major forms of RNA included messenger RNA (mRNA), ribosomal RNA (rRNA), and transfer RNA (tRNA). and thier biological functions.
Organic chemistry	(30 hours)	
Organic chemistry	Introduction	To introduce some of the most relevant and commonly used chemical concepts, processes and naming systems,
		To provide students th Imprtance of Organic chemistry of life
Hydrocarbons.a liphatic and aromatic	Classification of hydrocarbones	To learn students That Organic compounds contain the same founctional group undergo similar chemical reactions.
	the simple organic compounds used in our society.	Hydrocarbones supplies much of the energy and many of the simple organic compounds used in our society.
	Reactions of hydrocarbons	Study some its reactions
	Prepration of aromatic compounds as drugs	Study most aromatic compounds to synthesis drugs

Alcohols , Phenols , Ethers	Nameclature of alcohols, phenols, and ethers	To learn the Nameclature of alcohols, phenols, and ethers according to the IUPAC system. DRAW the structure corresponding to a given name.
	Type of alcohols	CLASSIFY alcohols as primary, secondary, or tertiary based on their structure.
	the physical properties of alcohols, Phenols and ethers.	EXPLAIN the role of dipoles and hydrogen bonding in determining the physical properties of alcohols, Phenols and ethers.
	oxidation of a primary and secondary alcohol.	Study the structure of the major product of each of the following types of reactions of al cohols:
	oxidation of a Phenols, ethers	To learn how the fenols and ethers reactions with oxidize reagents
	dehydration of an alcohol.	- intermolecular dehydration of an alcohol. - intramolecular dehydration of an alcohol.
Aldehydes and ketones	Nameclature of Aldehydes and ketones	To study the general chemistry of Aldehydes and ketones with particular attention
	Reactions Aldehydes and ketones	To study their two majer reactions : addition to the carbonyl group and condensation reactions .
	Aldehydes and ketones in living systems	Many examples of these reactions are found in both of the labrotary and living systems
Organic acids of medical	Nomenclature	The student will study the major type of reactions that organic acid ,their Derivatives undergo in living systems is substitution reaction

importance,anhydrides.esters .amids		
	Reactions Organic acids	The student will study the major type of Reactions of esters and amids undergo in living systems is substitution reaction
	Important of Organic acids in living systems	we will examine four of these substitution reactions that important in living systems
	substitution reactions of several derivatives	we will examine the structure and substitution reactions of several derivatives of phosphoric acid that important in living systems.
Aliphatic amines and alkaloids		1. Provide both IUPAC and common names for amines. 2. Differentiate primary, secondary, and tertiary amines.
	Nomenclature and properties of Aliphatic amines and alkaloids	to provide an active learning experience. They are usually designed to meet additional goals that fall under four general headings: l familiarizing students with technical issues; l familiarizing students with experimental design
	Important of Aliphatic amines and Alkaloids a living system	providing students with first-hand experience with a living system
Thio and sulpha compounds		To introduce some of the most relevant and commonly used chemical concepts, processes and naming systems.
	addition and condensation reactions	To study the general chemistry of thiol and sulpha with particular attention to their majer reactions : addition and condensation reactions .

		Many examples of these reactions are found in both of the labrotary and living systems
Stereochemistry (Isomerism)	the princlples and nomenclature of stereogenic	To provide an introduction to the shapes of organic molecules and the basic princlples and nomenclature of stereogenic elements in organic molecules.
	assign (R)- and (S)-description	• destinguish chiral molecules from achiral ones. • assign (R)- and (S)-descriptiors to stereogenic centres in chiral molecules. • appreciate the difference between enantiomers and diastereomers.
	The importance of stereochemistry in drug	The importance of stereochemistry in drug action is gaining greater attention in medical practice, and a basic knowledge of the subject will be necessary for clinicians to make informed decisions regarding the use of single-enantiomer drugs. For some therapeutics, single-enantiomer formulations can provide greater selectivities for their biological targets,
	improved therapeutic indices and pharmacokinetics	improved therapeutic indices, and/or better pharmacokinetics than a mixture of enantiomers. the nomenclature for describing stereochemistry and enantiomers, emphasizes the potential biological and pharmacologic differences between the 2 enantiomers of a drug, and highlights the clinical experience with single enantiomers of the selective serotonin reuptake inhibitors fluoxetine and citalopram.

	pharmacologic implications of stereochemistry	familiarity with stereochemistry and its pharmacologic implications will aid the practicing physician to provide optimal pharmacotherapy to his or her patients

Medical physics

Subject : 1st year medical physics curriculum

Theory : 60 hours /years (2 Hours/ 30)

Practical : 50 hours /years (2 Hours/25)

Units : 6 units annually

Teaching methods (overview) : Lectures, laboratory work.

Objective : The objective of this course is to learn the basic physics specially medical physics.

The primary aim of this course is understanding principle of physics and medical application of it as well as instruments that use for diagnosis of diseases.

Assessment : Home works, quizzes, examination, poster discussion.

Text books approved : Text book of Medical physics by John Cameron

Week	Lecture title	Objective
1	Terminology	• Terminology • Modeling (Physical medicine) • Measurement (Physical therapy)
2	Physics of the Skeleton	• What is Bone Made of • How Strong Are Your Bones ? • Lubrication of Bone Joints

		• Measurement of Bone Mineral in the body
3	Physics of Diagnostic X-Rays	• Production of X-Ray Beams • How X-Rays Are Absorbed • Making an X-Ray Image • Radiation to Patients From X-Rays • Producing Live X-Ray Images – Fluoroscopy • X-Ray Slices of the Body • Radiographs Taken Without Film
4 **5**	Pressure	• Measurement of Pressure in the Body • Pressure Inside the Skull • Eye Pressure • Pressure in the Digestive System • Pressure in the Skeleton • Pressure in the Urinary Bladder • Pressure effects While Diving • Hyperbaric Oxygen Therapy (HOT) • Pressure in the Digestive System
6 **7**	Heat and Cold in Medicine	• Physical Basis of Heat and Temperature • Heat therapy • Thermometry and Temperature Scales • Thermography-Mapping the Body's Temperature • Heat Therapy • Use of Cold in Medicine • Cryosurgery • Safety With Cryogenicscryogenics
8 **9**	Sound in medicine	• Introduction • General properties of sound • The Body as a Drum (Percussion in Medicine) • The Stethoscope • Ultrasound Pictures of the Body • Ultrasound to Measure Motion • percussion in medicine • Ultrasound picture of the body • Physiological Effects of Ultrasound in Therapy

10 **11** **12** **13**	Forces on and in the Body	• Static • Frictional Forces • Dynamics
14 **15**	Cardiovascular Instrumentation	• Major Components of the cardiovascular system • .Work Done by the Heart . • Blood Pressure and Its Measurement . • Pressure Across the Blood Vessel Wall(Transmutabl Pressure). • Bernoulli's Principle Applied to the Cardiovascular System. • How Fast Does Your Blood Flow? • Blood Flow-Laminar and Turbulent . • Heart Sounds. • The Physics of Some Cardiovascular Disease. • Some Other Functions of Blood
16 **17**	The Physics of the Lungs and Breathing (Respiratory system)	• The Air ways • How the Blood and Lungs Interact • .Measurement of Lung Volume • Pressure-Airflow-Volume Relationships of the Lungs • Physics of the Alveoli • The Breathing Mechanism • Airway Resistance
18 **19**	Physics of ear and hearing	• Introduction • The Outer Ear • The Middle Ear • The Inner Ear
20 **21**	Work and power	Work and power Heat losses from the body
22 **23**	Nuclear medicine imaging devices	• Rectilinear scanner • Gamma cameras : • Positron emission tomography (PET) • Radiation doses in nuclear medicine
24	Physics of Nuclear medicine	• Review of Basic Characteristics and Units of Radioactivity • Sources of Radioactivity for Nuclear Medicine • Statistical Aspects of Nuclear Medicine

		• Basic Instrumentation and Its Clinical Applications
25	Light in medicine	• Introduction • Measurement of Light and Its Unit • Applications of Visible Light in Medicine • Applications of Ultraviolet and Infrared Light in Medicine • Lasers in Medicine • Applications of Microscopes in Medicine
26 **27**	Physics of Eyes and Vision	• Focusing Elements of the Eye • Some Other Elements of the Eye • The retina- The Light Detector of the Eye • How Little Light Can You See? • Diffraction Effects on the Eye • How Sharp Are Your Eyes • Optical Illusions and Related Phenomena • Defective Vision and Its Correction • Color Vision and Chromatic Aberration
28 **29** **30**	Physics of Radiation Therapy	• The Dose Units Used in Radiotherapy- the Rad and the Gray • Principles of Radiation Therapy • A Short Course in Radiotherapy Treatment Planning • Megavoltage Therapy • Short Distance Radiotherapy or Brach therapy • Other Radiation Sources • Closing Thought on Radiotherapy

Practical sessions

Week	The title of the experiment	object
1	Essential electric instruments in medical physics lab.	To understand how medical instruments work
2	A simple graphical method for determining the resistance of voltmeter	To know medical application from this experiment

3	A simple graphical method for determining both the e.m.f and the internal resistance of a cell.	To know medical application from this experiment
4	Measurement of d.c. voltage by using cathode ray Oscilloscope	To know medical application from this experiment
5	Measurement of a.c. voltages by using the cathode ray oscilloscope	To know medical application from this experiment
6	The focal length of a convex lens by a graphical method	To know medical application from this experiment
7	Temperature measurement using clinical mercury thermometer and electronic thermometer	To know medical application from this experiment
8	Pulmonary function test:	To know how used spirometer
9	Measurement of forced vital capacity	To know how used spirometer
10	Measurement of VC/IVC, MMV and ventilator profile test	To know how used spirometer
11	LASER application for measuring the width of a single slit	To know medical application from this experiment
12	Radiation detection	To know medical application from this experiment
13	Physics of blood pressure measurement	To know how used sphygmomanometer
14	Electrical sphygmomanometer	To know how used sphygmomanometer
15	Electrocardiography (ECG)	The ECG is helpful in diagnosing and monitoring the origins of pathologic rhythms; myocardial ischemia; myocardial infarction; atrial and ventricular hypertrophy; atrial, atrioventricular, and ventricular conduction delays; and pericarditis

16	Comparing the viscosities of two liquids using Ostwald's viscometer	To know medical application from this experiment
17	Visual acuity	Visual acuity (VA) is acuteness or clearness of vision, especially form vision
18	Spectrophotometer	Determination of hemoglobin concentration
19	The audiometer	To know medical application from this experiment
20	The study of flow characteristics	To know blood flow

Medical biology

Total theory: 60 hours

Part1: Cell biology

Part2: Histology

Part3: Genetics

30 Hours Theory (2 Hours/ 30 Weeks)
45Hours Practical (2 Hours/ 25 Weeks)

Objectives:

The objective of this course is to learn:
a) Introduction to the science of medical biology.
b) Understanding the basis of genetics and medical inheritance.
c) Study of the basic body tissues.

Teaching and learning methods:
Lectures, laboratory work.
Assessment: Home works, quizzes, examination, poster discussion.

Part 1: Cell biology

The week	The title	Lecture objective
1st week	Introduction of Biology	To understanding of • Sciences of Biology. • Types of the organisms. • Kingdoms of life.
2nd week	Types of cells	To understanding of • unicellular organisms • multicellular organisms • differentiation between them • Protoplasm • Physical, chemical and nature properties
3rd week	Tools of cell biology	To understanding of • Microscope • Types of microscope.
4th week	Composition of The cell	To understanding of • The cytoplasm. • Endoplasmic reticulum. • Golgi apparatus. • Ribosomes
5th week	Composition of The cell	To understanding of • Lysosomes • Peroxisomes. • Mitochondria • Vacuoles. • Centrosome. • Cilia and flagella. • Non- living inclusion bodies.
6th week	Cell structure	To understanding of • The Nucleus. • Nuclear envelope. • Nucleoplasm. • Nucleolus.
7th week	Cell structure	To understanding of • Cytoskeleton • Intermediate filaments. • Microtubules. • Microfilaments.

8th week	Plasma membrane	To understanding of •Structure and function •Membrane lipids. •Membrane protein diversity.
9th week	How molecules cross the plasma membrane	To understanding of •Passive ways. •diffusion. •Osmosis. •Facilitated transport.
10th week	How molecules cross the plasma membrane	To understanding of •Active transport. •Extracellular matrix. •Types of junctions.
11th week	Cell division	To understanding of •Chromosome Composition. • Cell cycle. • Mitosis. • Mitosis phases.
12th week	Meiosis	To understanding of •Meiosis. • Mitosis phases • Antigenic Structure. •Gametogenesis. •spermatogenesis. •Oogenesis.

Part 2: Histology (15 hours)

Objectives:
Students learn the microscopic structures of living tissue to a degree that enables them to understand the functions and pathological diagnosis of abnormal tissue by studying the normal tissue of the body and tissue structures of the members of the various organs of the body and the systems
An introduction to the four basic tissues, their origin and development

1- Epithelial tissue
- Introduction
- Classification

A-Simple epithelium
- Simple sqamous epithelium
- Simple cuboidal epithelium

- Simple columnar epithelium
- Psuedostriated columnar ciliated epithelium

B-Stratified epithelium

- Stratified squmous non keratinizing epithelium
- Stratified columnar epithelium
- Transitional epithelium

2-Glands Classification of glands

A-exocrine glands

- Simple glands
- Compound glands
- Tubular , acinous and alveolar glands
- Merocrine glands

B- Endocrine glands

C- Mixed glands

3-connective tissue

- Definition
- Basic structure
- Classification
- Function
- Connective tissue proper

A- loose connective tissue

- Fibers: collagen , elastic and reticular
- Cells: fibroblast, fat cells , plasma cells , macrophage, mast cells, lymphocytes, monocytes, eosinophils and pigment cells

B- Dense connective tissue

- White collagenous
- Yellow elastic
- special connective tissue
- adipose
- reticular
- pigment tissue

5- Muscle tissue

Introduction and types of muscle tissue

A- striated muscle

- introduction
- sacrolemma and basement membrane
- cross striations
- striated muscle contraction

B-cardiac muscle

- introduction
- fine structure
- blood vessels and lymphatics

- nerves
- development of cardiac muscles

C-smooth muscle

- introduction
- size, shape and arrangement of smooth muscle fibers
- blood vessels and lymphatics
- nerve supply
- development
- chief distribution of smooth muscle

6- Nervous tissue

- introduction
- development of nervous tissue
- neurone, structure and types
- synapses
- neuroglia: astrocytes, oligodendrocytes, micriglia
- Nerve fibers
- Myelinated nerve fibers
- Non myelinated nerve fibers
- Ganglia
- Cerebrospinal (sensory ganglia)
- Autonomic ganglia
- Nerve endings

Part 3: Genetics (15 hours)

1. Introduction and history of genetics development
2. Mendels 1st law of segregation and 2nd law of independent assortment with few definition concerning genotype, phenotype, alleles and homologous chromosomes, recessive genes and dominant genes.
3. Modes of inheritance

   A- recessive model its characters, example of disease with their mode and different probabilities and results of their mode of inheritance

   B- Dominant inheritance: its characters, example of disease with their mode and different probabilities and results of their mode of inheritance
4. Genetics of sex determination and sex chromosome, sex linked gene with example of diseases of their mode and characters of their type of inheritance and probabilities of inheritance, sex limited gene and characters

5. Linkage: its usage in chromosomal mapping and location of genes on certain chromosomes and as a cause for deviation of certain diseases from the expected result according to Mendels 2nd law independent assortment.
6. Crossing over and the exchange of genetic material between homologous in meiosis and its importance as a natural methods in creating variation for the effect of selection
7. interaction between environment and genetic constitution of an individual exemplified by multifactorial inheritance
8. Structure of chromosomes with details of the DNA structure and bases . The double helix and other unit of heredity the gene its structure and the concept of one gene to one polypeptide chain.
9. Transcription and translation of the genetic code by the specificity of the base sequence.
10. heamoglobinopathies and types of mutation causing them characteristics of resulting haemoglobin and syndromes (frame shift mutation, substitution, mutation, deletion mutation)
11. Unequal crossing over.
12. Thalassemia syndrome , molecular biology of the two types of thalassemia (α and β) and its different syndrome .
13. Blood grouping ABO system , the secretor system and explantation of Bombay phenomena ., RH system and their genetic as an example of multiple alleles (locus). Determination of a character, blood groups association with disease.

Foundations of Medicine

Specific Objectives

The course is designed to enable the student to:

1. Give a brief account on the chronological development of medical practice in Iraq and present briefly the history of medicine before and after Islam eras and in the contemporary history
2. Define basic terms relevant to health and disease
3. Detail to role of environment in man's health
4. List and define the famous alternative medical practices
5. Explain in detail the principles of medical communication and interviewing
6. List and use all the sources of medical information that can be accessed by her/him

7. Master the process of breaking down/ forming medical terms and give their meanings
8. Link all the topics of the course in a brief (explains the "Why" of the course/book) using a comprehensive logical approach

Syllabus

The course consists of 28 theoretical hours. The details are shown in Table (1) below:

Table (1): detailed topics of community medicine to first year medical students

Term and main subject	Topics	Hrs
First Term: **Medical Terminology**	Introduction to medical terminology	
Sub-total		**10**
Second Term: **Foundations of Medicine**	History of Medicine	2
	Pre-Islamic and Islamic Eras	**1**
	Contemporary History of Health Services in Iraq	**1**
	Health Concepts and Promotion	4
	Definition of Health, Disease, Public Health	**1**
	Ecology of Health	**1**
	Natural History of Disease	**1**
	Health Care and Medical Care	**1**
	Man and Environment	3
	Definition of Terms	**1**
	Environmental Health; Relevance and Scope	**1**
	Sanitation	**1**
	Alternative Medicine	3
	Medical Communication and Interviewing	3
	Library and Information Technology	3
Sub-total		18
Grand-total		28

Term	Topics	Hrs	Lecturer
First Term	Introduction to medical terminology	5	**Dr. Muslim Nahi**

	History of Medicine	2	**Dr. Muslim Nahi**
	Alternative Medicine	3	
	Health Concepts and Promotion	4	**Dr. Ali Abid Sa'doon**
Sub-total		**14**	
Second Term	Introduction to medical terminology	5	**Dr. Muslim Nahi**
	Man and Environment	3	**Dr. Ali Abid Sa'doon**
	Library and Information Technology	3	
	Medical Communication and Interviewing	3	**Dr. Muslim Nahi**
Sub-total		**14**	
Grand-total		**28**	

4.3. Teaching methods

The Department of Family and Community Medicine adopts a variety of teaching methods including:

a. Lecture with elements of interactive teaching
b. Small group discussions
c. All available means are used to demonstrate scientific material (whiteboard, data show digital projectors, computer with LCD screens group work etc.)

4.4. Student assessment

The minimum requirement of a student to be transferred to second year is to achieve at least 50% of the total 100 marks assigned for the course. The marks are distributed as follows:

a. First term 10 marks based on daily continuous assessment using approved check list plus written short examinations (quizzes)
b. Midyear written examination: 25 marks
c. Second term 10 marks based on one written examination near the end of the term
d. Final examinations (55 marks): The final examination consists of a comprehensive written examination using variety of questions (MCQs, matching, short answer questions ...etc)

Students who fail to attain the 50% cut-off mark are required to re-sit in September for comprehensive examinations similar to the final one. Failing in the re-sit examination entails the student to repeat the academic year.

4.5. Books

1- Introduction to Foundations of Medicine

2- Medical Terminology Simplified, A Programmed Learning Approach by Body System, by Barbara A. Gylys.

مادة الحاسبات

يتضمن المنهج السنوي ساعات نظرية وساعات عملية بمجموع 90 ساعة

تكون درجة الامتحان النظري من(35) ودرجة الامتحان العملي من (15)

ت	الساعات النظرية	الساعات العملية	
-1	15	30	
-2	15	30	
المجموع	30	60	90

مادة الحاسبات العملي:-

1.Windows 7.
2.Word 2010.
3.Powerpoint 2010.
4.Excel 2010.

مادة الحاسبات النظري:-

ت		المواضيع
-1	أ	مقدمة تاريخية عن تطور الحاسبة , أجيال الحاسبة , ومجالات استخدامها
	ب	المكونات المادية للحاسبة ,الأجزاء الملحقة بالمذر بورد
	ج	الهارد ديسك , ألسيدي , الفلوبي , أنواع الكروت

	د	الأجزاء الملحقة الكيس , أنواع الشاشات , أنواع الطابعات
-2	أ	أنظمة التشغيل , نظام الويندوز والإصدار السابع
	ب	كيفية فتح البرنامج , مكونات النافذة الرئيسية , خواص سطح المكتب
	ج	قائمة أبدا , مكوناتها , my computer , my document
	د	مكونات Control panel
-3	أ	كيفية الطباعة , كيفية استخدام خيارات سهلة المنال , تغيير لغة الحاسبة
	ب	حذف البرامج , حذف الملفات واسترجاعها ,تكوين الملفات , واستنساخها ,تغيير اسم الملف
	ج	تغيير الوقت , ربط الإنترنت , تحويل الحاسبة إلى هاتف , ربط الحاسبة بالشبكات الداخلية
	د	قائمة البرامج , تحديث البرنامج , الملاحق والإضافات
-4	أ	تجميع التجزئة , التنظيف السطحي للأقراص
	ب	الراسم وكيفية استخدامه , مستكشف الويندوز, استعادة هيئة معينة للنظام بتاريخ سابق
-5	أ	معالج النصوص باستخدام الوورد , مكونات النافذة
	ب	فتح وإغلاق البرنامج , فتح و حذف وحفظ الملفات , تغيير اسم الملف
	ج	إنشاء مستند جديد باستخدام القالب الافتراضي ,كيفية إدخال النصوص
	د	إدخال الرموز , تحديد النصوص , التعامل مع القوائم , قائمة التنسيق

-6	أ	تغيير حجم ونوع الخط , التعداد النقطي , الخلفيات , التباعد بين الأسطر
	ب	الحدود , والتظليل ,تطبيق الأنماط , إدراج الصور ,
	ج	إنشاء الجداول , طرق إنشائها ,إدخال البيانات للجدول , تحرير الجدول
	د	المخططات , إدراج المخطط , العمل بالعمليات الحسابية
-7	أ	مايكروسوفت بوربوينت , فتح وإغلاق البرنامج , مكونات النافذة ,
	ب	, فتح و حذف وحفظ الملفات , تغيير اسم الملف ,العمل مع الشرائح , إعداد الشريحة
	ج	استخدام القوالب الجاهزة , إدخال النصوص إلى الشريحة , عرض الشرائح
	د	ترتيب و حذف وإدراج الشرائح , إضافة الأشكال الرسومية
-8	أ	تحريك العناصر بالشريحة , تحريك الشرائح ,
	ب	إدخال الأفلام في الشريحة , العرض المايكروي

English Language

Subject : English

Theory : (60) 2\30 hours /years

Practical : hours /years

Units : 14 units annually

Teaching methods (overview): Communicative approach .
Objective: to learn the students some notes about English grammar and to improve their ability how to listen ,speak, write and read in English language .

Assessment:

Text books approved : New Headway beginner student's book by Liz and John Soars.

Week no.	Lecture title	Objective
1st week	**Hello**	**About how to use: the auxiliary verbs(am/are/is),possessive adjectives (my/your), numbers1-10**
2nd week	**Your world**	**How to use :these subjects(he/she/they), possessive adjectives (his/her),and Question words(where what),countries ,reading and listening ,numbers 11-30**
3rd week	**Personal information**	**How: reading and speaking ,how to use social expression ,how to use (am/are/is)in Negatives/Questions and short answer,**
4th week	**Family and friends**	**How: to use Possessive 's, to describe afriend ,to talk about the family ,how reading and and writing**
5th week	**It's my life!**	**How to form present simple,how to use articles a/an, how listening and speaking (At a party),knowing the names of sports,food,drinks,how to say numbers and prices,**
6th week	**Every day**	**How to say :the time,Days of the week,Vocabulary and speaking,how to form present simple(question and negatives)**
7th week	**Places I like**	**Knowing Object pronouns ,demonstrate pronouns ,how to form question sentences and answers ,Opposite adjectives .**
8th week	**Where I live**	**How to use prepositions,how reading and speaking(a good time in Sydney),listening and writing,knowing the names of furniture,places in town**
9th week	**Happy birthday**	**How saying: years,dates, vocabulary and reading how forming past simple**
10th week	**We had a good time !**	**How forming past simple-regular and irregular (questions and negatives ,knowing Weekend activities ,sports.**
11th week	**We can do it !**	**How using can/can't, forming Requests and offers ,knowing verbs and adverbs.**
12th week	**Thank you very much!**	**How to use Want,like,and would like ,knowing the names of food.**
13th week	**Here and now**	**How forming Present continuous and the differences between present simple and present continuous ,knowing the names colours,clothes,how describing a person**

14th week	**It's time to go !**	**Revision of tenses Question words revision ,present continuous for future ,knowing transport and travel.**

Second Stage

Subject		Didactic hours			No. # of units
		Theoretical	Practical	Discussion	
1	Anatomy	90	120	-	8
2	Medical physiology	140	60	30	11
3	Biochemistry	90	60	30	8
4	Histology	60	60	-	6
5	Embryology	30	-	-	2
6	Principles of democracy and Human rights	30	-	-	2
	Total	440	300	-	37

 # (unit = 15 hours theory or 30 hours practical)

Human Anatomy
Second stage

no	Topics	hrs.
	Abdomen	
1.	Anterior abdominal wall.(muscles,blood&nerve supply)	2
2.	Hernias.(Structures & types)	2
3.	Stomach. (Structure,relations, blood&nerve supply)	2
4.	Duodenum. (Structure, parts , relations,blood&nerve supply)	1
5.	Small intestine. (Structure, relations ,blood&nerve supply)	2
6.	Large intestine.(Structure, parts, relations,blood&nerve supply)	2
7.	Liver&gall bladder. (Structure, relations blood&nerve supply)	2
8.	Pancrease&spleen. (Structure, relations ,blood&nerve supply)	1
9.	Kidney. (Structure , relations, blood&nerve supply)	1
	Sub Total	15

	Pelvis	
1.	Introduction.	1
2.	Blood& lymph supply of pelvis.	2
3.	Pelvic cavity. (Structure ,walls, contents)	1
4.	Male genital organ. (Structure, parts , blood& nerve supply)	2
5.	Female genital organ. (Structure, parts , blood& nerve supply)	2
6.	Perineum. (Structure, blood& nerve supply	2
	Sub Total	10

	Head& Neck:	
1.	Skull. (Osteology,walls, important structures&foramen)	4
2.	Dural folds. (Structures&types)	2
3.	Cranial venous sinuses. (Structures&types)	2
4.	Cranial cavity. (fossa,boundries,main structures&foramena)	4
5.	Orbit. (Muscles,relations,blood supply& nerve supply)	2
6.	Infratemporal fossa. (boundries,contents,relations& associated structures)	2
7.	Scalp. (Layers,blood&nerve supply)	2
8.	Face. (Fascia,boundries,contents,blood&nerve supply)	2
9.	Parotid gland. (Structure ,blood&nerve supply)	2
10.	Muscles of mastication. (origion,insertion, nerve supply)	2

11.	Triangles of neck. (Structures&types)	2
12.	Larynx. (Structure ,blood&nerve supply)	1
13.	Nose&paranasal sinuses.(Structure ,blood&nerve supply)	2
14.	Pharynx. (Structure ,blood&nerve supply)	1
15.	Thyroid gland. (Structure ,blood&nerve supply)	2
16.	Lymphatic drainage of the head&neck.	1
	Sub Total	33

	Neurology:	
1	Introduction.	2
2	Classification.	1
3	Brain. (Surface anatomy&function)	2
4	Brain. (Blood supply&venous drainage)	2
5	Brain stem.	2
6	Midbrain.	1
7	Pons.	2
8	Medulla.	1
9	Brain ventricles.	2
10	C.S.F circulation.	1
11	Cranial nerves.	6
12	Spinal cord & vertebral column.	2
13	Spinal cord. (Blood supply & venous drainage)	2
14	Spinal cord. (Internal structures)	1
15	Spinal cord. (Functions)	1
16	Sympathetic nervous system.	2
17	Parasympathetic nervous system.	2
	Sub Total	**32**

Histology

Second stage

No.	Lectures	hrs
First semester		
1	Introduction	2
2	Basic histology	6
3	Circulatory system	4
4	Lymphoid system	4
5	Digestive system	6
6	Respiratory system	4
7	Skin & appendages	4
	Total	30

second semester		
1	Urinary system	4
2	Endocrine system	4
3	Male reproductive system	4
4	Female reproductive system	4
5	Nervous system	6
6	Eye & ear	4
7	Musculoskeletal system	4
	Total	30

Subject: Embryology

Theory: 30 hours / years

Practical: no hours/ years

Units: 2 units annually

Objective: To understand the embryological development of human being

Assessment: 30 marks –mid exam.

10 marks assessment as written exam.

60 marks –final exam

Text book approved: Medical Embryology T.W.SADLER

Week no.	Lecture title	Objective
1	Cell division	**understanding of types of cell division 1-mitosis 2-meiosis and their phases . Similarity and difference between them**
2	Chromosomal abnormalities-2 hours	**This lecture explain causes of congenital anomaly which result from chromosomal abnormality either in**

		their number or structure .Also show examples of congenital anomaly.
3	spermatogenesis	**This lecture discuss the steps of sperm formation from primordial germ cells to mature spermatozoa, hormonal control and abnormality of spermatogenesis**
4	oogenesis	**This lecture discuss formation of oocyte and it is hormonal control .The similarity and differences between oogenesis and spermatogenesis**
5	Ovarian cycle	**This lecture discuss the physiology of menstrual cycle both ovarian and uterine with their hormonal control .**
6	Fertilization	**This lecture explain the process of fertilization and what are the main results**
7	Cleavage, blastocyst formation and implantation	**This lecture gives idea about definition of cleavage ,blastocyst ,and appropriate time of implantation**
8	Second Week of Development: Bilaminar Germ Disc	This lecture discuss the developmental events at second week day-by-day.
9	Third week of development: Trilaminar Germ Disc	This lecture shows the most important event (gastrulation) the process that establishes all three germ layers

		(ectoderm , mesoderm and endoderm) in the embryo.
10	Third to eighth weeks : the embryonic period part-1	The embryonic period, or period of organogenesis , development of three layers ,ectoderm ,mesoderm and endoderm ,and derivatives.(ectoderm derivatives)
11	Third to eighth weeks : the embryonic period part- 2	The embryonic period, or period of organogenesis , development of three layers , (mesoderm and endoderm derivatives).
12	Third Month to Birth: the Fetus and Placenta/Part 1	The period from beginning of ninth week to birth is known as the fetal period .It is characterized by maturation of tissues and organs and rapid growth of the body. those lectures discuss all events of fetal period.
13	Third Month to Birth: the Fetus and Placenta/Part-2	The period from beginning of ninth week to birth is known as the fetal period .It is characterized by maturation of tissues and organs and rapid growth of the body. those lectures discuss all events of fetal period.
14	Third Month to Birth: the Fetus and Placenta/Part-3	The period from beginning of ninth week to birth is known as the fetal period .It is characterized by maturation of tissues and organs and rapid growth of the body. those lectures discuss all events of fetal period.
15	Birth defects part -1	This lecture describe the birth defects ,types of abnormalities and causes of these abnormalities
16	Birth defects part -2	This lecture discuss the principles of teratology, and teratogens associated with human malformations
17	Prenatal diagnosis	This lecture explain the advantage and disadvantage of several techniques designed to detect fetal malformation, also shows fetal therapy.

18	Respiratory system	This lecture discuss formation of lung buds ,larynx, trachea and maturation of lungs
19	Digestive system part-1	Discuss the divisions of gut tube,mesentries and foregut
20	Digestive system part- 2	Discuss the divisions of gut tube, development of mid gut and hindgut, also their abnormalities
21	Cardiovascular system part-1	This lecture shows establishment and patterning of the primary heart field. Formation and position of the heart tube
22	Cardiovascular system part-2	This lecture explain development of vascular and lymphatic systems
23	Urinary system	This lecture show the normal embryonic development of urinary system. Also congenital abnormalities of the system.
24	Development of the Limbs	This lecture discuss limb growth and development and congenital abnormalities related to limbs
25	Lecture title	Objective
26	Genital system / gonads	This lecture show the normal embryonic development of gonads for both male and female embryo. Also congenital abnormalities of the system.
27	External genitalia	This lecture show the normal embryonic development of external genitalia for male and female . Also congenital abnormalities of the genitalia.

28	Ear	This lecture show the normal embryonic development of ear. Also congenital abnormalities of the ear.
29	Eye	This lecture show the normal embryonic development of eye. Also congenital abnormalities of the eye.
30	Integumentary system	This lecture show the normal embryonic development of skin and its associated structures, hair, nails, and glands. . Also congenital abnormalities related to this system.

Biochemistry

second stage

Department of clinical biochemistry

Goal of clinical biochemistry: The goal of the Clinical Chemistry is study the metabolic processes occurring in the human body in order to understand the biochemical basis, correlated symptoms, signs and complication of disease to biochemical events.

Subject: clinical chemistry

Theory : 90 hours/years

Practical : 30 hours/years

Units : 8 units annually

Teaching methods: Each lecture is accompanied with power point presentation , examines (quiz), and major individual project that takes the form of seminars , Case Studies Presentations , group & class discussion and active Participation by clinical biochemistry research .

Objective assessment:

The student will be capable of

1- The detailed relationships between basic science, organ physiology and function, pathophysiology, patient outcomes and selected topics of evidence-informed care and management.
2- Investigations for metabolic disorders.
3- Provide additional information regarding the current diagnosis.

Textbooks approved

1- Martin A Crook , Clinical biochemistry and metabolic medicine, hodder Arnold , 4th ed
2- Lippincott's Illustrated Reviews: Biochemistry integrates and summarizes the essentials of medical biochemistry , 4th ed .

Week no.	Lecture title	Objective
1	Digestion and Absorption	To give the students insight into appreciating how understanding of digestion and absorption of the main dietary categories (carbohydrate, lipid, and protein) in the human body and the key metabolic processes occurring in the human body, could contribute to the understanding and explanation of pathological phenomena. understand Signal molecules produced at specific sites, Peptide hormones regulating digestion, Peptide hormones regulating appetite, Adipose tissue derived hormones, Growth factors
2	Carbohydrates metabolism Glycolysis,The tricarboxylic acid cycle, metabolism of monosaccharide and disaccharide	understand how carbohydrate metabolism normally responds in the fed state, the fasting state, and during exercise, Cori's cycle Glucose alanine cycle,
3	Pentose phosphate pathway Glycogen metabolism	Understand Pentose phosphate pathway , structure and function of glycogen, Glycogenesis and Glycogenolysis and
4	Hyperglycemia and diabetes mellitus Hypoglycaemia	-understand how carbohydrate metabolism is altered by diabetes and the metabolic response to trauma and surgery, -understand the relationship between obesity, exercise, insulin resistance, and diabetes. Diabetic ketoacidosis -understand Metabolic pathways during tissue hypoxia understand Hypoglycaemia , its causes; and the Investigation of hypoglycaemia
5	Lipids metabolism Fatty acids and triacylglycerol metabolism	Understand fatty acids-oxidation & energetics, Biosynthesis of ketone bodies and their utilization, Biosynthesis of saturated and unsaturated fatty acids., regulation of lipid metabolism, essential fatty acids.
6	Complex lipid metabolism Triglycerides & phospholipids	Describe the metabolism of Triglycerides & phospholipids
7	Cholesterol & prostaglandin	Understand the metabolism of Cholesterol & prostaglandin
8	Disorders of lipid metabolism (Atherosclerosis and coronary artery disease,)	Describe how lipids are transported in both the endogenous and the exogenous pathways composition and functions of the different classes of lipoproteins . Know the features of the different classes of Disorders of lipid metabolism , Understand Atherosclerosis and coronary artery disease, Risk factors for coronary artery disease , Preventions of atherosclerosis , Hypolipoproteinemias
9	Amino acids, proteins metabolism Biosynthesis of amino acids,	Understand the general scheme through which amino acids are metabolized. Know the reaction catalyzed by transaminases. Understand the role played by transaminases in linking amino acid metabolism to carbohydrate metabolism. Know the general principle that underlies the way in which the carbon skeleton is degraded. Know how waste nitrogen is transported from extra-hepatic tissues to the liver.

10	Amino acids, proteins metabolism catabolism of amino acids and conversion of amino acids to specialized products	Understand generally how urea is synthesized and why it is synthesized. Understand how the various treatments for urea cycle enzymopathies work. Understand the mechanism of ammonia toxicity. Know generally the pathway for heme biosynthesis and in particular what porphyrins are. Know the chemical properties of free porphyrins and how they give rise to the symptoms of porphyrias.
11	Biological oxidation	To enable the student to point out the bioenergetics of energy consuming and releasing of the concerned metabolic pathways under different physiological circumstances. The respiratory chain, its role in energy capture & control, Energetics of oxidative phosphorylation, mechanism of oxidative phosphorylation
12	Diagnostic Enzymology	Assessment of cell damage and proliferation , Factors affecting results of plasma enzyme assay, Normal plasma enzyme activities , Plasma enzyme patterns in disease
13	Vitamins fat soluble	Understand the metabolism of fat-soluble vitamins are:A (retinol),D (calciferol),E (a-tocopherol),K (2-methyl-1,4-naphthoquinone
14	Vitamins water soluble	Understand the metabolism of water-soluble vitamins are: the B complex:(thiamine (B_1),ribofl avin (B_2), nicotinamide (niacin),pyridoxine (B_6),folate (pteroylglutamate), the vitamin B_{12} complex (cobalamins),biotin and pantothenate, ascorbate (vitamin C).
15	Hormones General principles of endocrine diagnosis Hypothalamus and pituitary gland	Describe the functions of hormones Antidiuretic hormone, Oxytocin, Hypothalamic releasing factors Growth hormone Adrenocorticotropic hormone Thyroid stimulating hormone Gonadotropins Disorders of anterior pituitary hormone secretion Disorders of posterior pituitary hormone secretion Hypopituitarism
16	steroid hormones & adrenal cortex	Synthesis of steroid hormone , ketosteroids Biological effects of glucocorticoids Assessment of glucocorticoid secretion, Adrenal hyper and hypofunction, Ovarian hormones, Testicular hormones Chemistry and biosynthesis of steroids , Physiology , The hypothalamic–pituitary–adrenal axis , Factors affecting plasma cortisol concentrations , Disorders of the adrenal cortex , Adrenocortical hyperfunction , Primary adrenocortical hypofunction (Addison's disease) , Investigation of suspected adrenal hypofunction Corticosteroid therapy , Congenital adrenal hyperplasia , Primary hyperaldosteronism (Conn's syndrome)
18	thyroid function	Physiology , Disorders of the thyroid gland , Strategy for thyroid function testing and interpretation
19	Cell membrane and cells communications	to define cell membrane and its role in the Extracellular & Intracellular Communication Discuss how membrane lipids are responsible for Fluidity , Selective permeability , Asymmetry , and Self-sealing capability Discuss the transport across membrane Illustrate Types of transport systems Describe Specific deficiencies or alterations of certain membrane components lead to a variety of diseases
20	Purines and pyrimdine metabolism biosynthesis and degradation of purine and pyrimidine	Understand the important point in the synthesis and degradation of purine and pyrimidine, Uric acid and gout

21	Nucliec acids metabolism DNA replication, & DNA repair mechanism, transcription, translation process	describe the role of nucleic acids in the heredity and the development of the organism , Upon completion of this lecture, the student will have the ability to DNA directs the development of the organism through Replication (Cell division). DNA Organization, Replication, & Repair
22	RNA Synthesis, Processing, & Modification Genetic Code and Protein synthesis	Expression of genetic information and protein synthesis (through RNAs).
23	Nucliec acids metabolism Genetic Code and Protein inhibition Biotechnology and human disease (PCR)	Understand the Genetic Code Regulation of Gene Expression , Molecular Genetics, Recombinant DNA,& Genomic Technology knowledge in the development of methods for the diagnosis of genetic diseases, and initial successes in the treatment of patients by gene therapy
24	Renal function	Understand the renal glomerular function , Renal tubular function , Water reabsorption: urinary concentration and dilution , Biochemistry of renal disorders, Syndromes reflecting predominant tubular damage , renal tubular acidosis, Nephrotic syndrome, Nephritic syndrome , Diagnosis of renal dysfunction , Urinary sodium and osmolality , Biochemical principles of the treatment of renal , dysfunction , Renal calculi
25	Liver function	Understand the functions of the liver , Biochemical tests for liver disease , Diseases of the liver Jaundice , Bile and gallstones , Investigation of suspected liver disease
26	Minerals metabolism (Macro elements)	Describe the functions and metabolism of Calcium, availability and functions Factors regulating blood calcium level Calcium, clinical applications Phosphorus Magnesium .potassium, sodium Sulfur
27	Minerals metabolism (Micro elements)	Understand the functions and body homeostasis of Iron absorption, transport, deficiency, Copper, Zinc, Fluoride ,Selenium Manganese, Molybdenum, Cobalt, Nickel Chromium, Lithium
28	Acid - base balance	Buffers, Acid base balance in the body, Bicarbonate buffer system, Respiratory regulation of pH, Renal regulation of pH, Relation of pH and potassium Respiratory acidosis, Metabolic acidosis Respiratory alkalosis, Metabolic alkalosis, Hydrogen
29	Cancer chemistry,	Describe the Mutagens and carcinogens , Oncogenic viruses, Oncogenes and oncosuppressor genes Oncofetal antigens, Tumor markers, Anticancer drugs, Tumor immunology ,probability
30	Pregnancy and infertility	Pregnancy and lactation , Infertility , Some drug effects on the hypothalamic–pituitary–gonadal axis

Practical part of clinical chemistry

Goals:. The practical part of clinical chemistry goal to the analysis and testing of body fluids and tissues to develop and expand of the information in and clinical reasoning skills by data gathering and interpretation, hypothesis generation , testing, and critical evaluation of diagnostic, monitoring, and prognosis of most disease processes

Learning objectives and outcomes :

By the end of this practical part the student should be able to:

1- Apply principles of safety, quality control, reagent preparation sample collection and how use the spectrophotometer in body fluid analysis .

2- Compare and contrast human body chemistry levels under normal and abnormal conditions , describe the clinical importance of abnormalities and correlate test results with patient conditions.

Essential Texts

1- clinical chemistry and metabolic medicine by martin a. crook.
2- Lecture Notes on Clinical Biochemistry, 9th Ed, by Smith, Beckett, Walker and Rae.
3- Clinical Biochemistry An Illustrated Colour Text 5th 2013

Week no	Lecture title	Objective
1	**Introduction & Overview of Clinical Laboratory Testing**	Understand the principle of analysis assay , errors and how dealing with instrumental in clinical biochemistry lab
2	**Urinalysis background** part I : urine physical properties analysis	Describe physical properties of urine in health state and disease
3	part I I: chemical urine properties analysis	Urobilinogen Bilirubin Keton bodies ,Blood ,Protein , Nitrate , Leukocytes , Glucose
4	Part III : Case Studies Presentations and unknown exam	Develop the clinical skills in the diagnosis
5	**Carbohydrate metabolism** and Diabetes mellitus disease Part I Determination of fasting blood glucose and glycated haemoglobin (HbA1c)	Understand the analysis assay of fasting blood glucose and glycated haemoglobin (HbA1c)
6	Part II : Glucose tolerance test (GTT)	Understand body tolerance of glucose
7	Part III : case study discussion	Examination
8	**Lipid metabolism** PartI:Determination of serum total cholesterol and triglyceride	Understand the analysis assay of characterizing an individual's risk of developing **cardiovascular diseases (CVD)** and in monitoring therapeutic interventions.
9	Part II : determination of HDL and LDL	Understand the analysis assay of HDL and how LDL calculated
10	Part III : case study discussion Determination of lipid profile and the risk of cardiovascular diseases	Examination
11	**Cardiac markers (background)** Part I : determination of serum truponin by strip	Understand the cardiac markers analysis assay
12	Part II: determination the activity of lactate dehydrogenase (LDH) and creatine kinase (CK)	Understand the analysis assay of LD and CK
13	Part III : case study discussion and unknown exam	Examination
14	**Minerals disorders and bone disease** Determination of bone profile (ca, ph and mg)	Understand the bone profile analysis assay
15	Part II : case study discussion and unknown exam	Understand the clinical correlation between bone disease and (ca, ph and mg)

16	**Renal function tests** Part I: Background of Renal function tests grouped and importance terms: Glomerular Filtration Rate, Renal Plasma Flow, Filtration fraction and Clearance.	describe tests to measure kidney function
17	Part I I: the glomerular function: determination of serum urea, determination of serum creatinine , determination of serum uric acids	Understand what urea, creatinine and uric acid, urea levels. measure their levels explain the significance and causes abnormal levels, deferential diagnosis of pre and post renal failure
18	Part III Tubular function.	explain tests to measure tubular function.
19	Part IV : case study discussion	Review and examined students information
20	**Liver function tests** Part I: Synthetic functions tests : Determination of total plasma proteins (TP), albumin (Alb), albumin /globulin ratio (A/G)	Determination of plasma proteins
21	Part II ; LAB 1 : Excretion functions tests : Determination of Total bilirubin (TB) by bilirubin meter	Understand the assay of measuring total serum bilirubin by bilirubin meters
22	Part III ; LAB 2: Determination of Total bilirubin (TB), Direct bilirubin (Conjugated bilirubin), Indirect bilirubin (Unconjugated bilirubin)	Understand the deferential diagnosis of jaundice
23	Part IV: Inflammation and tissues damage tests : Alanine transaminase (ALT), Aspartate transaminase(AST)	Understand the deferential diagnosis of jaundice
24	Part IIV: Inflammation and tissues damage tests : alkaline phosphatase (ALP), Gama glutamyltransaminase (GGT)	Understand the deferential diagnosis of jaundice
25	Part IIV : case study discussion	unknown exam
26	**Hormone**s Part I (TSH,T3 T4)	Understand of the Determination of hormones by minividus
27	Part II Grouth hormone (suppression test , stimulating test)	Understand methods of suppression test and stimulating test
28	Part III FSH , LH and progesterone , prolactin ,estrogen	Understand of the Determination of hormones by minividus
29	Part III : case study discussion	Exam
30	**Analysis of Cerebrospinal Fluid** **Background** Total proteins (Lowry method or turbidometry) Qualitative test for gamma globulin (Pandy's test) Quantitation of glucose Quantitation of chloride enzymes (LDH, CK),	Understand the analysis method of Cerebrospinal Fluid

Subject : Curriculum of physiology (2"d year)

Theory : 120 hours /years (4 Hours/ 30)

Practical : 60 hours /years (2 Hours/30)

Units : 11 units annually

Teaching methods (overview) : Lectures, laboratory work .

Objective : To learn the student the update subject that present in our community .

Assessment : Home works, quizzes, examination, poster discussion .

Text books approved : Text book of physiology Guyton's 2016 ,

Ganong's of medical physiology .

Week	Lecture title	Details
1	Introduction and functional anatomy Cardiac output …….. Introduction to neurology	• **Definition of cardiac out put** • **Factor that determined the (co).** **……..** • **Anatomy of neurology**
	Introduction of blood physiology	• **View about blood** • **Production Hemopoiesis**
2	Introduction to Nervous system	• **Anatomy and divisions of nervous system** • **Physiologic anatomy of cerebral cortex.** • **layers of cerebral cortex**
3	Cortical areas	• **parts of cortical areas.** • **association areas of brain.**
	Venous return Nerve action potential	• **Factors that determine the venous return.** • **Cardiac and systemic vascular function curves.** **----------** • **Discuss the mode of action potentials.**

		How does the electrolyte move?
4	RBC, anemia, polycythemia	• **Precursor of RBC** • **types of anemia** • **Causes of polycythemia.**
	Introduction to heart anatomy	• **Overview of the Cardiovascular System** • **anatomy of heart,** • **Twall of heart**
5	Lobes of brain	• **anatomy of each lobe of brain.** • **function and integral role of each lobe.**
	Discussion the venous return …….. Nerve conduction	• **Discussion the venous return** **……** **Role of electrolyte in Nerve conduction**
6	Hb and Hemoglobin pathy	• **Origin and fate of Hb** • **abnormal Hb and diseases of Hb**
	Heart valves	• **anatomy of heart valves** • **Intrinsic Control of Heart beat**
7	Anatomy and physiology of cerebellum	• **anatomy of cerebellum.** • **functional subdivision of cerebellum.** • **cerebellar nuclie.**
	hemodynamics ……. neuromuscular junction	• **factor that effect the blood flow.** • **Types of the blood flow** **……..** **Anatomy of neuromuscular junction.** **What is the Role of Acetyle choline in conduction.**
8	WBC	• **Leukocyte Granulocyte** **Monocyte-macrophage system**
	Heart sound and murmurs	• **Enumeration of normal heart sounds ,murmurs** • **jugular venous pressure(definition and waves)**
	Physiology of brain stem	▪ **anatomy of brainstem .** ▪ **function**

9	The Flow of Blood through Blood Vessels ---------- Diseases in NM junction	• **The histology of the walls of arties and veins.** • **Blood gas exchange** **----------** • **Myasthenia Gravis and other diseases**
10	inflammation	**Role of neutrophils and macrophage**
	Action potential in cardiac muscle	• **definition.** • Phases of Cardiac Muscle Action Potential
11	Physiology of basal ganglia	• **main components of basal ganglia.** • **functiom of basal ganglia in executing patterns of motor movements**
12	Volume Distribution	• **The values of pressure in the pulmonary and systemic circulation .** • **The Mean arterial pressure (MAP).**
	Immunity and allergy	• **Resistance of the body to infection** • **Action of WBC**
13	Spinal cord, anatomy, organization for motor function	• **anatomy and function of spinal cord.** • **organization for motor function**
14	The Microcirculation and the Lymphatic System Actin myosin proteins	• **The peripheral circulation and its control.** • **The Mechanisms of Blood Pressure Regulation.** • **What is the Short-Term Regulation of blood pressure.** • **Mechanism of muscle contraction**

15	Blood group and compatibility	• **Types of blood group** • **Blood transfusion.**
	Cardiac cycle	• **definition.** • **phases of cardiac cycle.**
16	Spinal cord reflexes and muscle tone	• **spinal reflexes.** • **components of reflex arc.**
	Discussion and review …….. Muscle fatigue	• **Discussion and review** **…….** • **Muscle action potential and muscle fatigue**
17	Hemostasis and blood coagulation	• **Cascades** • **Coagulation factors** • **mechanism of coagulation.**
	Regulation of heart pumping	• **Intrinsic regulation of heart pumping (Frank-Starling Mechanism)** • **Control of the Heart by the Sympathetic and Parasympathetic Nerves**
18	Autonomic nervous system	• **general organization of ANS.** • **Physiologic Anatomy of sympathetic and Parasympathetic Nervous System** . • **Effects of Sympathetic and Parasympathetic Stimulation on Specific Organs**
19	Fibrinolytic system	• **Bleeding disorder** • **fibrinolysis after bleeding**
	Rhythmical excitation of heart	• **Specialized Excitatory and Conductive System of the Heart** • **Mechanism of Sinus Nodal Rhythmicity.**
	Autonomic reflexes	• **regulation of main visceral organs by autonomic reflexes** • **Alarm" or "Stress" Response of the Sympathetic Nervous System**

20	The Microcirculation and the Lymphatic System …… Cell physiology	• **The peripheral circulation and its control.** • **The Mechanisms of Blood Pressure Regulation.** **Q-What is the Short-Term Regulation of blood pressure .** **……** • **Cell composition** • **Cell constituents** • **Function of each part.**
	Thromboembolic disorders	• **Thrombosis** • **Dislodgement of embolus**
	States of Brain Activity (Sleep & Brain Waves)	• **stages of sleep.** • **neuronal center of sleep** • **Cycle Between Sleep and Wakefulness.**
21	Physiology of limbic system	• **functional anatomy of limbic system.** • **Behavioral Functions of the Hypothalamus and Associated Limbic Structures**
	Electrocardiography ……. Endoplasmic retinaculum	• **what is the ECG.** • **The indication of ECG.** • **How to do ECG .** **……** **Function of ER Golgi apparatus body**
22	Function of brain in communication(language)	• **Sensory aspect of communication** • **Motor aspect of communication**
	Memory	• **Classification of memory** • **Consolidation of memory** • **Role of specific parts of brain in memory process.**
	Electrocardiography ……	• **calculation of heart rate .** • **types of arrhythmia** **……..…….**

	Water homeostasis	**Introduction of nutrients** **Water loss and gain in the body.**
23	Diseases of immune system	• **WBC** • **Diseases of WBC**
	Cerebral blood flow and brain metabolism	• **regulation of cerebral blood flow** • **control of CBF by carbon dioxide and hydrogen ion**
	Cerebrospinal fluid	• **contents of CSF.** • **cushioning function of CSF**
24	Coronary blood flow …… Calculation of body compartments	• **The Coronary perfusion pressure , Cerebral blood flow and renal blood flow.** • **The Cardiovascular stress** **……** **How can you calculate all the types of body compartments?**
25	Problem with blood transfusion	• **complication of blood transfusion** • **mechanism of ABO incompatibility**
	Physiology of pain	• **Definition of pain** • **Types of pain** • **Pathway for transmission of pain signal**
	Cranial nerves	**Anatomy, enumeration and function of Cranial nerves**
	Mechanisms of Blood Pressure Elevation …….. Edema	• **Mechanisms of Blood Pressure Elevation.** • **Risk factors for primary hypertension include.** • **Causes of secondary hypertension include.** **……..……..** • **Types of edema Mechanism of Edema in a common diseases**

26	Physiology of endocrine system	• **introduction to endocrine** • **Pituitary hormone and their control by hypothalamus** • **growth hormone** • **role of hypothalamus** • **antidiuretic hormone** **thyroid hormone , hypo and hyerthyrodism**
27	Physiology of endocrine system	• **adrenocortical hormones** • **cortisone hormone** • **insulin , glucagone and diabetes mellitus.** • **control of insulin secretion** • **thyroid hormone, calcitonin ,calcium and phosphate metabolism**
	Renal physiology	• **introduction , anatomy** • **nephron function** • **blood flow through the kidney** • **Glomerular filtration rate.** • **Tubular reabsorption**
	Renal physiology	• **absorption capabilities of different tubule segment** • **plasma clearance and measure of GFR** • **Diuresis and diuretics** • **counter current exchange mechanism** • **effect of tubular load and transport maximum on urine constituents**
28	GIT physiology	• **anatomic features and innervations** • **mastication and swallowing** • **motor function of stomach** • **movement of small intestine** • **function of ileocecal valve, defecation**
	GIT physiology	• **secretion of saliva and gastric secretion** • **pancreatic secretion regulation** • **secretion of bile and secretion of small intestine**

		• **secretion of large intestine , digestion** • **liver**
29	Respiratory physiology	• **functional anatomy** • **lung volume and capacities** • **pressure change during respiration** • **pulmonary .circulation** • **alveolar ventilation**
	Respiratory physiology	• **exchange of gases and diffusion capacity** • **transport of carbon dioxide by the blood** • **hypoxia, hypercapenia and hypocapenia** • **effect of exercise** • **pulmonary function test**
	Respiratory physiology	• **patterns of breathing ,normal and abnormal** • **oxygen dissociation curve, co2 dissociation curve** • **neural factors and brain stem Respiratory regulation ,renal regulation of H** • **Types of disorders, metabolic and respiratory**
30	Skin and eye	• **Normal temperature , heat production** • **fever and hypothermia** • **functional anatomy of the eye** • **physiology of retina ,visual field and pathway** • **colour vision,cerebral cotical visual function**
	1 eye and 4 ENT	• **functional anatomy of the ear** • **properties of hearing system** • **vestibular function** • **hearing test**
31	4 acid base balance	• **homeostasis** • **body fluid ,volume** • **body fluid composition** • **edema**

	2Gynecological physiology+2sport +1 neonatal	• **reproductive and hormonal function of male** • **female physiology before pregnancy and female hormones** • **pregnancy and lactation** • **sport physiology** • **fetal and neonatal physiology**

Practical course 60 hours

Week	Lecture title	Details
1	Blood Physiology	• Enumeration of RBC. • Enumeration of WBC. • Differential WBC count -blood film. • Haemoglobin estimation. • Determination of blood groups. • Determination of erythrocytes sedimentation rate. • Absolute blood value.
2		
3		
4		
5		
6		
7		
8	Respiratory system	• Measurement of lung volumes spirometry. • Vitalography. • Recording of respiratory movements (Stethograph)
9		
10		
11	CNS	• Special sense . 1-Vision (Snellen charts for far vision, Ishihara charts for color blindness) . 2- Hearing (tunning fork tests-Rine and Weber test) • Reflexes.
12		
13		
14		

15 **16**		• EMG and nerve conduction study • EEG
17 **18** **19** **20** **21**	Cardiovascular system	• Measurement of arterial blood pressure. • Effect of physical exercise on blood pressure, heart rate and respiratory rate. • Electrocardiography. • Measurement of blood flow (plethysmography). • Effects of drugs on isolated mammalian heart.
22 **23** **24** **25**	GIT	Effect of drug on isolated mammalian intestine
26 **27** **28** **29**	Nerve- muscle physiology	• Recording of simple muscle twitch (frog sciatic nerve gastro-cnemius muscle preparation) . • Effects of temperature on simple c.muscle twitch • Effects of repeated stimuli on muscle contraction • Effects of fatigue on muscle contraction.
30		• Measurement of basal metabolic rate.

حقوق الانسان

المادة: مبادئ حقوق الإنسان والديمقراطية

نظري: ساعة واحدة / المرحلة الثانية

الوحدات: وحدتان

طريقة التدريس: ألقاء وعرض توضيحي

تقييم الطالب: 10 درجات لكل فصل و30 درجة امتحان نصف السنة و 50 درجة امتحان نهائي

الكتب المعتمدة: دراسات في الحرية والديمقراطية. تأليف أ.م. حامد حمزة حمد الدليمي ، حقوق الإنسان والطفل والديمقراطية / تأليف الدكتور رعد ناجي الجدة و الأستاذ الدكتور رياض عزيز هادي

Objective	Lecture title	Week no.
التعرف على ماهية تعريف الإنسان والخصائص الأساسية لها وفئات حقوق الإنسان	**تعريف ماهية حقوق الإنسان**	**الأسبوع الأول**
التعرف على حقوق الإنسان في الحضارات القديمة (الحضارة الرومانية، الحضارة الفرعونية، حضارة وادي الرافدين)	**الجذور التاريخية لحقوق الإنسان**	**الأسبوع الثاني**
التعريف بحقوق الأنسان في الديانة المسيحية والديانة الإسلامية	**حقوق الإنسان في الديانات السماوية**	**الأسبوع الثالث**
التعرف على الصكوك الدولية العالمية لحقوق الإنسان (الإعلان العالمي لحقوق الإنسان 1948، العهد الدولي الخاص بالحقوق المدنية والسياسية 1966، والعهد الدولي الخاص بالحقوق الاقتصادية والاجتماعية والثقافية 1966)	**المصادر الأساسية لحقوق الإنسان (المصادر الدولية لحقوق الإنسان)**	**الأسبوع الرابع**
التعريف بالإعلان الأمريكي لحقوق وواجبات الإنسان لعام 1948. والميثاق العربي لحقوق الإنسان لعام 1997، والميثاق الاوربي لحقوق الإنسان.	**المصادر الدولية الإقليمية لحقوق الإنسان**	**الأسبوع الخامس**
التعرف على النصوص القانونية ذات الصلة بحقوق الإنسان في دستور جمهورية العراق والتشريعات العراقية .	**المصادر الوطنية لحقوق الإنسان**	**الأسبوع السادس**
التعرف على دور الدولة في مجال تنظيم ممارسة حقوق الإنسان وحرياته.	**تقييد الحقوق والحريات**	**الأسبوع السابع**
التعرف على أهم المبادئ الدستورية التي تكفل حماية حقوق الإنسان (مبدأ سيادة القانون، ومبدأ الفصل بين	**ضمانات حقوق الأنسان الدستورية**	**الأسبوع الثامن**

السلطات العامة التنفيذية، التشريعية والقضائية.		
التعرف على طرق الرقابة القضائية على دستورية القوانين، ودور المحكمة الاتحادية العليا في حماية حقوق الإنسان وحرياته الأساسية.	**ضمانات حقوق الإنسان القضائية**	**الأسبوع التاسع**
التعرف على المؤسسات الدولية والآليات المعتمدة دولياً لمراقبة تنفيذ المواثيق الدولية المتعلقة بحقوق الإنسان	**: الحماية الدولية لحقوق الانسان**	**الأسبوع العاشر**

المادة: مبادئ حقوق الإنسان والديمقراطية

نظري: ساعة واحدة / المرحلة الثانية

الوحدات: وحدتان

طريقة التدريس: ألقاء وعرض توضيحي

تقييم الطالب: 10 درجات لكل فصل و30 درجة امتحان نصف السنة و 50 درجة امتحان نهائي

الكتب المعتمدة: دراسات في الحرية والديمقراطية. تأليف أ.م. حامد حمزة حمد الدليمي،

التعرف على دور منظمة الأمم المتحدة واجهزتها التنفيذية (الجمعية العامة ، المجلس الاقتصادي والاجتماعي، ومجلس الأمن الدولي) في تعزيز وحماية حقوق الإنسان.	دور المنظمات الدولية في تعزيز حقوق الانسان	الأسبوع الحادي عشر
التعرف على دور اللجنة الدولية للصليب الأحمر في تعزيز حقوق الإنسان في أوقات السلم والحرب والأساس القانونية لعملها.	**دور المنظمات الدولية غير الحكومية في تعزيز حقوق الأنسان.**	**الأسبوع الثاني عشر**
التعرف على دور الاتحاد الأوربي ومنظمة الأمم الأفريقية في تعزيز حقو الإنسان والمنظمة العربية لحقوق الإنسان.	**دور المنظمات الدولية الإقليمية في تعزيز حقوق الإنسان**	**الأسبوع الثالث عشر**
التعرف على نشاطات منظمات المجتمع المدني والتنسيق بينها وبين مؤسسات الدولة في تعزيز حقوق الإنسان.	**دور منظمات المجتمع المحلية في تعزيز حقوق الإنسان**	**الأسبوع الرابع عشر**
التعرف على مهام واليات منظمة العفو الدولية في تعزيز حقوق الإنسان.	**منظمة العفو الدولية**	**الأسبوع الخامس عشر**

الفصل الثاني : الديمقراطية والحريات العامة

نظرة عامة عن الجذور التاريخية للديمقراطية والحريات العامة	مقدمة عامة عن الديمقراطية والحريات العامة.	الأسبوع الأول
التعرف على تعريف الديمقراطية وخصائص النظام الديمقراطي ومميزاته والمكونات الأساسية للديمقراطية.	**مفهوم الديمقراطية**	**الأسبوع الثاني**

التعرف على مبادئ الديمقراطية في الشرائع السماوية (طريقة الحكم في الديانة المسيحية والديانة السلامية)	**الشرائع السماوية والمبادئ الديمقراطية.**	**الاسبوع الثالث**
التعرف على آلية اشتراك الشعب مباشرة في ممارسة السلطة.	**صور الديمقراطية.** **- الديمقراطية المباشرة.**	**الأسبوع الرابع**
التعرف على مفهوم الديمقراطية غير المباشرة (الديمقراطية النيابية) وخصائصها.	**الديمقراطية النيابية.**	**الأسبوع الخامس**
التعرف على مفهوم الديمقراطية شبه المباشرة ومظاهرها.	**الديمقراطية الشبه مباشرة.**	**الأسبوع السادس**
التعرف على بداية ظهور الانتخاب كآلية لشرعية الحكم، والتعرف على الطبيعة القانونية للانتخاب وفقاً للاتجاهات الفقهية	**الانتخاب والتكيف القانوني للانتخاب.**	**الأسبوع السابع**
الاقتراع المقيد وأنواعه وشروطه وشروط الناخب في العراق.	**أنواع الانتخاب.**	**الأسبوع الثامن**
التعرف على نظام الانتخاب المباشر والانتخاب الغير مباشر، ونظام الانتخاب الفردي والانتخاب بالقائمة.	**نظم الانتخابات**	**الأسبوع التاسع**
التعرف على نظام الانتخاب بالأغلبية ونظام التمثيل النسبي وآلية كل منهما وخصائصه.	**نظام الانتخاب بالأغلبية ونظام التمثيل النسبي.**	**الأسبوع العاشر**
النظام البرلماني وخصائصه	**أنواع الحكومات**	**الأسبوع الحادي عشر**
التعرف على مبدأ الفصل بين السلطتين التشريعية والتنفيذية والتنسيق والتعاون والرقابة لكلا السلطتين.	**التعاون والتوازن بين السلطتين التشريعية والتنفيذية.**	**الأسبوع الثاني عشر**
التعرف على مفهوم دولة المؤسسات العامة	**الدولة القانونية ومفهومها.**	**الأسبوع الثالث عشر**
التعرف على آلية تطبيق مبدأ سيادة القانون كضمان للدولة القانونية	**ضمانات الدولة القانونية**	**الأسبوع الرابع عشر**
التعرف على انواع الحريات (الحقوق والحريات المتعلقة بشخص الفرد، الحقوق والحريات الخاصة بفكر الإنسان، الحقوق والحريات المتصلة بنشاط الفرد.	**الحريات العامة**	**الأسبوع الخامس عشر**

Third Stage

Subject		Didactic hours			No.# of units
		Theoretical	Practical	Discussion	
1	Pharmacology	90	60	30	8
2	Pathology	120	120	-	12
3	Medical microbiology	90	60	-	8
4	Medical parasitology	60	60	15	6
5	Community medicine	30	30	-	3
6	Internal medicine	45	60	-	5
7	General surgery	30	-	-	2
	Total	465	390	-	44

 # (unit = 15 hours theory or 30 hours practical or Clinical)

Syllabus of Medical Microbiology

Total theory: 90 hours
Part1: immunology

15 Hours Theory (1 Hours/ 15 Weeks)
8 Hours Practical (2 Hours/ 4 Weeks)..Lecturer: Dr. Talib Hasan Ali

Objectives:

The objective of this course is to learn the structural features of the components of the immune system as well as their functionsduring the immune response and its involvement in health and disease.

The primary aim of this course is understanding mechanisms involved in immune system development and responsiveness.

Teaching and learning methods:
Lectures, laboratory work.
Assessment: Homework, quizzes, examination, poster discussion.

Text books approved:
1) Medical Microbiology by Jawetz, Melnick 26th ed., 2013.
2) Immunology by kuby 5th ed., 2002.
3) Foundations in Microbiology by Talaro and Talaro 3rd ed., 2005.
Theoretical Lectures:

The week	The title	Lecture objective
1st week	The Nature of Host Defenses	To understanding of The series of defenses that protect us against invasion by harmful microbes and other foreign matter. • Defenses development and specificity. •Three lines of defenses: 1st line chemical, physical and genetic barriers. second line defenses such as phagocytosis, inflammation, complement system, and interferon and third line defenses: acquired immunity

2nd week	Systems Involved in immune	To understanding of • The systems that are most involved in immune function (the blood, lymphoid organs and tissues, and theRES). • White blood cells, types and formation in the red bone marrow. • Some of their complex functions relating to phagocytosis,inflammation, antibody production, and pathogen killing. • The lymphoid organs (spleen, lymph nodes, thymus, GALT, MALT) their importanceinsurveillance and immune reactions.
3rd week	Nonspecific Immune Reactions	To understanding of • Inflammation as protective response to injury. •Types of chemical mediators, that releasedby cells during inflammation and other immune responses. • Interferon is a nonspecific immune mediator that inhibits the replicationof viruses and regulates a variety of immune responses. • The complement system sequentially reaction to lyse cells and viruses.
4th week	Phagocytes	To understanding of • Phagocytes as specialized cells that function in engulfment andclearance of foreign molecules, cells, viruses, and particles. Their numerous enzymes and toxic chemicals to carry out phagocytosisfunction.
5th week	The Acquisition of Specific immunity	To understanding of Acquired specific immunities provided by B and T lymphocytes that protect us against infection and their role to survival.
6th week	The origin of diversity and specificity	To understanding of •Genetically programmed cells to react with foreignsubstances (antigens). •Glycoprotein receptors that dictate their specificityand reactivity.

		• B lymphocytes receptors, T lymphocytes receptors, and macrophages receptors such as MHC and HLA. • Differentiation of lymphocytes that create of genetically differentclones that each have a unique specificity for antigen. • The B cells and T cell maturity and migration to lymphoid tissues. • Antigens of foreign cells, viruses, and molecules that capable of triggering immune reactionsby lymphocytes. • The B and T cells react with antigens through a complex series ofmechanisms
7th week	The Classes of Immunoglobulins	To understanding of • B cells activated by antigen giving riseto plasma cells that secrete antibodies (humoral immunity) and longlivedmemory cells. • Antibodies binding sites and their roles in agglutination, opsonization, complement fixation, andneutralization. • The amount of antibodies during immediate and memory reactions.
8th week	Immunization and vaccination	To understanding of • The categories of natural, artificial, active,and passive immunities. • Powerful medical tools to artificially induce protective immunities. • Immunization by means of passive and active methods. • Vaccines types: dead or live cells and viruses, parts of cells or viruses, or by recombinant DNA techniques.
9th week	Serological and immune tests	To understanding of • Reactions between antibodies and antigens that can be used in diagnosis of disease and identification of pathogens.

		• Serology testing of a patient's blood serum that can indicate a current or past infection and the degree of immunity. • Tests that produce visible interactions of antibodies and antigens include agglutination, precipitation, and complement fixation.
10th week	Serological and immune tests	To understanding of • Assays can be used to separate antigens and antibodies and visualize them with radioactivity or fluorescence (such as immunelectrophoresis, Western blot, and direct and indirect immunoassays.
11th week	Disorders in Immunity	To understanding of • The several types of dysfunctions (immunopathologies). •The dysfunctions that are due to abnormally heightened responses to antigens (allergies, hypersensitivities, and autoimmunities). •the dysfunctions that are due to the reduction or loss in protective immune reactions due to genetic or environmental causes such as (immunodeficiencies and cancer).
12th week	Disorders in Immunity	To understanding of • Some immune damage that caused by normal actions that directed at foreign tissues placed in the body for therapy, such as transfusions and transplants. • Hypersensitivities divisions into immediate, antibody-mediated, immune complex, and delayed allergies. • Allergens that cause a hypersensitive or allergic response.
13th week	Disorders in Immunity	To understanding of • The immediate type of allergy that mediated by special types of B cells that produce IgE. • IgEinducing mast cells to release allergic chemicals such as histamine.
14th week	Disorders in Immunity	To understanding of • Examples of immediate allergies are atopy, asthma, food allergies, and anaphylaxis.

		• Another type of hypersensitivity arises from the action of other antibodies (IgG and IgM) that can fix complement and lyse foreign cells. • Immune complex reactions that caused by circulating antibodies against foreign molecules and their accumulating in tissues and organs.
15th week	Disorders in Immunity	To understanding of • Autoimmune diseases. The production of B and T cells that sensitized to react with the body's natural molecules. Some examples of these diseases (rheumatoid arthritis, systemic lupus erythematosus, myasthenia gravis, and multiple sclerosis). • T cells in delayed-type hypersensitivities.
16th week	Immunodeficiency diseases	To understanding of •Immunodeficiencies pathologies in which B and T cells and other immune cells are missing or destroyed. • The primary outcome of immunodeficienciesas in recurrent infections and lack of immune competence.
17th week	Cancer	To understanding of Cancer as an abnormal overgrowth of cells due to a genetic defect and the lack of effective immune surveillance.

Practical sessions

1. Introduction to Immunology laboratory
2. Antibody-Antigen (Ab-Ag) reaction (hemagglutination)
3. (Ab-Ag) reaction (precipitation)
4. Electrophoretic Techniques (Immunoelectrophoresis)
5. Ab-Ag reaction (complement fixation)
6. Ab-Ag reaction (ELISA) and Immunoblot.
7. Ab-Ag reaction (Immunoflourescence test and Radio immune assay)
8. Cell isolation, Cell counting and functional assessment

Part 2: bacteriology curriculum

60 Hours Theory (2 Hours/ 30 Weeks)
50 Hours Practical (2 Hours/ 25Weeks)..Lecturer: Dr. Hayder Kh. Shnan; Dr. Saad Abdil Aziz Atia; Dr. Zainab D. Dgaim

Objectives:

The objective of this course is to learn the basic and systematic microbiology especially medical bacteriology.

The primary aim of this course is understanding characteristic structures and pathogenicity of medical bacteriology as well as methods of diagnosis and understanding new procedures of prevention, and treatments of diseases.

Teaching and learning methods:
Lectures, laboratory work.
Assessment: Homeworks, quizzes, examination, poster discussion.

Theoretical Lectures:

The week	The title	Lecture objective
1st week	Introduction of medical microbiology and bacterial structures	To understanding of 1-Science of medical microbiology. 2-Structures of bacterial cell envelope. 3-Nuclear materials, plasmid and transposons 4- Study the external appendages and endospores
2nd week	Bacterial genetics and gene transfer	To understanding of 1- Science of genetics 2- DNA and RNA types 3- Mutations 4- Methods of gene transfer
3rd week	Host-pathogen relations	To understanding of 1- Infectious process 2- Attachment of microbial agent with host cell. 3- Invasion process 4- Antiphagostic factors 5- Intracellular pathogenicity
4th week	Sterilization and disinfection	To understanding of 1- Methods of sterilization and disinfection 2- Physical process 3- Chemical process

5th week	Antimicrobial therapy	To understanding of 1- Types of antibiotics 2- Mode of its action 3- Methods of resistance 4- Origin of drug resistance 5- Side effects of antibiotic
6th week	Staphylococci species	To understanding of • The Staphylococci characteristics. • Morphology and Identification. •Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
7th week	Streptococci species	To understanding of • The Streptococci characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
8th week	Neisseria species	To understanding of • The *Neisseria*characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
9th week	*Campylobacter*s pecies	To understanding of • The *Campylobacter*characteristics. • Morphology and Identification.

		• Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
10th week	*Helicobacter pylori*	To understanding of • The *H. pylori*characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
11th week	*Legionella* species	To understanding of • The *Legionella* characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
12th week	*Listeria* species	To understanding of • The *Listeria* characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
13th week	The Vibrios	To understanding of • The Vibrios characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology.

		• Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
14th week	*Corynebacterium*	To understanding of • The *Corynebacterium*characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
15th week	Rickettsia and Related Genera	To understanding of • The Rickettsiacharacteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
16th week	*Brucellae*	To understanding of • The *Brucellae* characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
17, 18th week	Enteric Gram Negative Rods (E. coli, klebsiella, proteus,	To understanding of • The Enteric Gram Negative Rods characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment.

	pseudomonas, provencia group) Salmonella, Shigella	• Epidemiology, Prevention, & Control.
19th week	*Acinetobacter* species	To understanding of • The *Acinetobacter*characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
20,21th week	Complex aerobic Actinomycetes	To understanding of • The Actinomycetes characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
22th week	Mycobacteria	To understanding of • The Mycobacteria characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
23th week	*Bacillus* genus	To understanding of • The *Bacillus*characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology.

		• Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
24th week	*Clostridium* genus	To understanding of • The *Clostridium* characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
25th week	Borella, Leptospira	To understanding of • The Borella, Leptospira characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
26h week	Spirochaetes : T . pallidum,	To understanding of • The Spirochaetes : T . pallidum, Borella, Leptospira characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
27,28th week	Pasterurella : Hemophilic , Bordetella	To understanding of • The Pasterurella : Hemophilic , Bordetella characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings.

		• Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.
29,30th week	• Chlamydia , normal microbial flora of human body	To understanding of • The Chlamydia , normal microbial flora of human body characteristics. • Morphology and Identification. • Antigenic Structure. • Pathogenesis. • Pathology. • Clinical Findings. • Diagnostic Laboratory Tests • Treatment. • Epidemiology, Prevention, & Control.

Practical sessions
1-Tools and biosafety
2-Sterilization
3-Antibiotic susceptibility test
4-Methods of bacterial counting and measuring bacterial growth
5-Bacterial staining
6-Culturing media
7-Growth characteristics
8-General urine examination
9-Biochemical tests
10-Staphylococci
11-Streptococci
12-*Neisseriae*
13-Aerobic spore-forming bacilli
14-Anaerobic spore-forming bacilli
15-Enterobacteriaceae
16-Non-Lactose Fermentors
17-*Pseudomonas aeruginosa*
18-Vibrio
19-*Listeria*
20-*Legeonella*
21-*Helicobacter*
22-*Corynebacterium* and *Mycobacterium*

Part3: Virology curriculum

19 Hours Theory (1 Hours/ 19 Weeks)
10 Hours Practical (2 Hours/ 5 Weeks)..Lecturer: Dr. Mohammed Jasim Mohammed

Objectives:

The objective of this course is to learn about the general characteristics, structure, replication and properties of RNA and DNA viruses in addition to a view of the differences among viruses and other pathogens as well as the physical and chemical factors affected viruses. Also, it includes an overview of the most important viral diseases affected human with focus on their diagnosis, treatment and prevention.

The primary aim of this course is to make easy for student to understand what are viruses and how they can distinguish the viral infection in a way that increase their knowledge

Teaching and learning methods:
Lectures, laboratory work.
Assessment: Homework, quizzes, examination, poster and mini-research discussion.
References: **Main book:** Medical Microbiology, **Jawetz, Melnick** 26th ed.,2013
Theoretical Lectures:

The week	The title	Lecture objective
1st week	Virology introduction-properties and classification	To understading of the follwings 1-General properties of viruses. 2-Define structure of viruses. 3- classification of RNA and DNA viruses. 4-Evolutionary Origin of Viruses and Universal System of Virus Taxonomy.
2nd week	Chemical composition of viruses	To understanding of the define compartment of virus which includes Viral protein, viral nucleic acid, viral lipid envelopes, viral glycoproteins, cultivation and assay of viruses, detection of virus-infected cells, Quantitation of viruses,physical and biologic methods.
3rd week	Reaction of viruses to physical and chemical agents	To understanding of different physical and chemical factors affected viruses such as 1-Heat & Cold, 2- Stabilization of Viruses by Salts

		3-pH, 4-Radiation, 5-Photodynamic inactivation, 6-Ether Susceptibility, 7-Detergents, Formaldehyde, Antibiotics & Other Antibacterial Agents,
4th week	Replication of Viruses: Virus Growth Cycle	To understanding of • An Overview of Replication of RNA and DNA viruses, • General Steps in Viral Replication Cycles,
5th week	Expression of Viral Genomes and Synthesis of Viral Components	To understanding of 1- Morphogenesis and Release, 2- Genetics of Animal Viruses, Viral Vectors,
6th week	Pathogenesis of Viral Diseases	To understanding of 1- Pathogenesis of Viral Diseases: 2- Steps in Viral Pathogenesis, 3- Viral Persistence: Chronic & Latent Virus Infections
7th week	Viral infections (1)	To understanding of 1- Overview of Acute Viral Respiratory Infections, 2- Overview of Viral Infections of the GIT,
8th week	Viral infections (2)	To understanding of 1- Overview of Viral Skin Infections, 2- Overview of Viral Infections of the CNS, 3- Overview of Congenital Viral Infections, 4- Effect of Host Age
9th week	rubella and other congenital viral infections	To understanding of 1- Transmission & Epidemiology, 2- Pathogenesis & Immunity, 3- Clinical Findings, 4- congenital rubella syndrome (CRS), Lab Diagnosis, Treatment, Prevention, Diagnosis of Congenital viral infections
10th week	RNA non-enveloped Picornaviruses enteroviruse	To understanding of 1- Properties of Picornaviruses, Picornavirus Replication, 2- enteroviruses, Poliovirus, 3- Pathogenesis, Pathology, Clinical Findings, Laboratory Diagnosis,
11th week	Coxsackieviruses	To understanding of 1- Coxsackieviruses and their Clinical Findings,

	rhinoviruses	Transmission & Epidemiology, 2- RHINOVIRUSES and their Transmission & Epidemiology 3- Group B Specific Diseases: echoviruses
12th week	Rotaviruses and some examples of different viruses	To understanding of 1- Pathogenesis, clinical findings, lab diagnosis, epidemiology, treatment and control, 2- Caliciviruses, 3- Astroviruses, 4- Viruses cause GIT infections, 5- Overview on Viruses that cause Common cold, 6- Overview on Viruses that cause lower respiratory tract infections, 7- Overview on Viruses that cause Genital tract and sexually transmitted Infections.
13th week	Rabies virus and other CNS Viral infections	To understanding of 1- Rabies virus and Properties of the Rabies Virus, 2- Rabies Virus Replication, 3- Rabies 4- Pathogenesis & Pathology, Clinical Findings, Laboratory Diagnosis, Prevention, Treatment & Control, Other Viral CNS infections,
14th week	Hepatitis A-E Viruses: An Overview (1)	To understanding of 1- Types of Hepatitis and General Characteristics of Hepatitis Viruses, 2- Hepatitis A Virus, 3-Transmission & Epidemiology, Pathogenesis & Immunity, 4- Clinical findings, Treatment & Prevention, Lab Diagnosis,
15th week	Hepatitis A-E Viruses: An Overview (2)	To understanding of 1- Hepatitis B Virus, 2- Transmission & Epidemiology, Replication, Pathogenesis & Immunity, clinical findings, lab diagnosis, treatment, prevention, 3-hepatitis C virus (HCV), Hepatitis C Life Cycle, Transmission & Epidemiology, Pathogenesis & Immunity, Clinical Findings, lab diagnosis, treatment, prevention
16th week	Hepatitis A-E Viruses: An Overview (3)	To understanding of 1-Hepatitis D Virus, 2- Transmission and Epidemiology, Hepatitis D – 3- Clinical Features, lab diagnosis, treatment and prevention, Hepatitis E Virus,

17th week	Herpesvirus	To understanding of 1-Introduction, important properties of herpesviruses, Structure & Composition, 2-Classification, Herpesvirus Replication, 3-Overview of Herpesvirus Diseases, 4-Properties of the Viruses, Pathogenesis & Pathology, Primary Infection, Latent Infection, Clinical Findings, 5-Oropharyngeal Disease, 6-Keratoconjunctivitis, 7-Neonatal Herpes, Infections in Immunocompromised Hosts, lab diagnosis,
18th week	Chemotherapy of viruses, antiviral agents, vaccines	1- To understand all mechanisms followed by different Types of antiviral chemotherapies, 2- To know about the different kinds of vaccines used for prevention of viral infections
19th week	Measles and mumps viruses	Introduction, important properties of measles and mumps viruses, pathogenesis, clinical findings, lab diagnosis, treatment, prevention, types of vaccines.

Practical sessions

The week	The title	Lecture objective
1st week	Introduction	To understading of the follwings What is the virus ??, Methods of Diagnosing Viral Infections, Surface protein of the virus,
2nd week	**Virus Isolation Using three living systems**	To understanding of the Isolation of the virus using three living systems, Lab Animals, Chick emberyo, tissue culture
3rd week	**Types of tissue cultures**	To understanding of **Primary tissue culture**, advantages, disadvantages, **Semi-continuous** cell cultures, advantages, disadvantages, **Continuous (Cell line)**, advantages, disadvantages, examples of isolated viruses **(SARS- infected Vero cells)**
4th week	**Demonstration on Tissue Culture used for virus isolation**	To understanding of • **Preparation of primary tissue culture, procedure, Counting of cells**

5th week	**Inoculation of clinical sample in living system**	A-Inoculation of clinical sample in tissue culture, how to harvest Rabbit kidney for tissue culture, procedure, Inoculation of clinical sample in tissue culture, Recognition of virus growth,

Part4: mycology (4 hours)

- Interoduction, Actinomyces and Nocardia
- Dermatophytes, Candida
- Cryllococcus
- Histoplasma and Sporotrichosis
- Miscellaneous fungi: Aspergiliosis , Penicillium, Rhizopus
- Antifungal agents, Antibiotic produced by fungi

Parasitology curriculum

60 Hours Theory (2 Hours/ 30 Weeks)
60 Hours Practical (2 Hours/ 30 Weeks)..Lecturer: Dr. Amal Khalaf + Dr. Khalid Jamel

Objectives:

The objective of this course is to learn about the general characteristics, properties and life cycles of different kinds of parasites which infected human. Also, it includes an overview of the most important anti-parasitic drugs used for treatment and the main ways in control and prevention of these diseases.

The primary aim of this course is to make easy for student to understand what are the parasites and how they can characterize and detect the parasitic infection in a way that increase their knowledge in treatment.

Teaching and learning methods:
Lectures, laboratory work.
Assessment: Homework, quizzes, examination, poster and mini-research discussion.
Theoretical Lectures and Practical lectures:

Objectives and description of lectures	Title of lecture	Week
To understanding of النظري	Introduction of parasitology	1st week

Define parasite , parasitology , type of parasite , host and type host, parasite transmission , type of parasite sample detection. العملي Type of sample and General stool examination .		
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Protozoalogy : Class : sarcodina , Entamoeba histolytica (amoebic dysentery)	**2nd week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Class : sarcodina, other amoebae	**3rd week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Class; flagellata : Giardia lamblia and trichomonas species	**4th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Class; flagellate, leishmania sp	**5th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology,	Class; flagellate, Trypanosoma sp	**6th week**

diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.		
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Class; ciliata; Balantidium coli With examination for previous lectures	**7th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Classs; sporozoa ; intestinal coccidian	**8th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Classs; sporozoa; toxoplasma sp	**9th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Classs; sporozoa; plasmodium sp(malaria)	**10th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي	Helminthology : class: trematoda ; Schistosoma sp.	**11th week**

Slide show the parasite different stages with description for each one.		
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class: trematoda ; Fasciola sp (liver root)	**12th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class: trematoda ; Fasciolopsis and clonorchis sp	**13th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class: trematoda ; Heterophyes heterophyes , metagonimus sp	**14th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class: trematoda ; Lung fluke ; paragonimus sp.	**15th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class, cestoda, echinococcus sp (hydatid cyst)	**16th week**

To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class, cestoda ; taenia sp.	**17th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class; cestoda , H.nana and dipylidium sp , D. latum	**18th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class, nematode , Intestinal species, Ascaris lumricoides.	**19th week**
To understanding of Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class, nematode , Intestinal species; Enterubius and Trichuris sp.	**20th week**
Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Helminthology : class, nematode , Intestinal species, hook worm	**21th week**
Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite.	Helminthology : class, nematode , Tissue species; wuchereria sp and onchocerca volvolus .	**22th week**

العملي Slide show the parasite different stages with description for each one.		
Explain the morphology , life cycle , route of transmission , pathology, diagnosis, prevention and control of parasite. العملي Slide show the parasite different stages with description for each one.	Entomology , insect or ectoparasite, scabei and lice	**23th week**

Pharmacology

FORWARD:-

The department of pharmacology was established in 2006/2007 to provide a course in pharmacology with aim of achieving adequate knowledge and competence in pharmacology , which form the basis for rational drug therapy in medical practice .The student by the end of the course should be able to :

1. understand the mechanism of action at molecular as well as cellular level both desirable and adverse.
2. understand the principle of pharmacokinetic i.e. drug absorption ,distribution, metabolism and excretion and be able to apply these principle in therapeutic practice.
3. recognize that drug have action at all systems and should be able to group drug with common pharmacological action and appreciate that this classification is not absolute .
4. be able to know or to prototype drug of each pharmacological group especially of clinical importance .
5. acquire a comprehensive description of the major group of drugs as applied to medical practice and be sufficiently.

VISION

The department of pharmacology has always placed great emphasis on the quality of academic teaching and assisting students in studying pharmacology and its relation to clinical fields .

MISSION

The department of pharmacology is responsible for teaching the science of drugs to the medical students (3rd year) as it is a basic material in studying medicine .The department starts with an introduction of pharmacokinetics and pharmacodynamic ; Then provides the basic knowledge on the functions of the different drugs clinically .Through their study courses at the department of pharmacology ,the students continue learning the essentials of the human pathophysiology in relation to therapeutics .

Teaching and learning methods

The curriculum has been designed as –Ministry of higher education and scientific research recommendations .The material of course will be presented through lectures and seminars .The program of seminars shall focus on the program covered in the lectures and subjects prepared by the students .The theory classes in each course would comprise of 45 hours of didactic teaching The practical classes would comprise of 30 hours in each course .

Objectives

The goal of this course of pharmacology is to prepare the student for the upcoming years during which they must be able to understand not only which drug may be useful for a particular clinical situation but be able to design rational and effective pharmacotherapy for treatment of particular patient.

Rational and effective choice in the clinic involve an understanding of the physiology , drug mechanism and therapeutic end point as well as potential side effect and drug – drug interaction

This involve understanding of:-

1. Influence of drug on different biochemical process of the body and the ability to suggest the use of drug to modify changes produce by disease state or disorders.
2. Drug mechanism of action .
3. therapeutic response.
4. potential drug adverse effect .
5. Drug –drug interaction, drug food interaction.
6. In course of pharmacology learning .student must understand not just that medicine worse for particular ailment but why & how it will work and when comparing different mode of treatment , Which one will be the most officious.

Didactic hours	1st semester	2nd semester	Total
Theoretical	**45hrs**	**454hrs**	90hrs.
Practical	**30hrs**	**30hrs**	60hrs.
Discussions		**30hrs**	30hrs.
Units No.			8 units

7. Keep the student well informed with development of newer drug that provide better remedy of the disease with least adverse effect.
8. The knowledge gained in pharmacology should bind together the integration of clinical skill , the understanding of disease and the effective use of pharmacotheraputic agent.

(Unit= 15 hours theory or 30 hours practical .)

Students assessment

Examination	1st semester	Mid-year	2nd semester	Seminars	Final theory	Final practical	Total
Degree	**5 degrees**	**25 degrees**	**5 degrees**	**5 degrees**	**50 degrees**	**10 degrees**	100 degrees

*** Site of theoretical lectures , at the hall number 2 in the first floor .**

Pharmacology curriculum

NO	Lecture Title	Lecture Time /hrs	Day and date	Objective
	1- General pharmacology			
1.	**Introduction to pharmacology**	**1 hr.**	**Sunday 1/Oct./2017**	Definition of drug ,pharmacodynamic, pharmacokinetic, Toxicology, clinical pharmacology, therapeutic, pharmacogentics.
2.	**Pharmacokinetics**	**2 hrs.**	**MON. 2/10**	Definition ;drug passage across cell membrane Order of p/k. process, half life, SSC, bioavailability, first-pass effect, Vd., protein binding, result of metabolism, phases of metabolism, enzyme-induction and inhibition, excretion; renal, pulmonary, fecal, milk
3.	**Pharmacodynamic**	**4 hrs.**	**Wedn. 4/10**	The biochemical and physical mechanism of drug action on body ;Receptor interactions , Competitive and non competitive inhibition ;Agonist-antagonist –receptor complex ,Dose – response(potency),Therapeutic index (TI) .
4.	**Cholinergic nervous system**	**4 hrs.**	**Sun. 8/10**	Anatomy of autonomic nervous system ; sites of Ach. action; cholinomimetic drugs, cholinesterase inhibitors ,antimuscarinic drugs; Atropine as a prototype ,Atropine like drugs ,organophosphorus compounds poisoning .
5.	**Adrenergic nervous system**	**4 hrs.**	**Wedn. 18/10**	Catecholamines, biosynthesis and metabolism Adrenergic agonists (alpha and beta);Therapeutic uses of sympathomimetic drugs . Adrenergic blockers; selectivity of adrenergic blocking ,classification of alpha and beta adrenoceptors blockers .
6.	**Autocoids**	**2 hrs.**	**Mon. 30/10**	Definition of autacoids, Histamine and anti histamine H1 and H2 blockers. Serotonin (5HT) and its antagonist ;prostaglandins ,drugs act via prostaglandins inhibition.
	2- Central nervous system			
7	**Ant anxiety and hypnotic drugs**	**1 hours**	**Wedn. 1/11**	Definition. Benzodiazepines as Diazepam, Benzodiazepines antagonist as Flumazenil. Other drugs like beta-blockers and antihistamines in anxiety .

8	**Antipsychotic drugs**	**1 hour**	**Sun. 12/11**	Definition of psychosis and dopamine hypothesis of schizophrenia ,classification of antipsychotic drugs ,pharmacological action of antipsychotic ,therapeutic indications and side effects .
9	**General anesthetics**	**2 hours**	**Mon. 13/11**	Definition ,classification, inhalational and intravenous anesthetics, advantages , disadvantages, clinical uses and side effects .
10	**Antiepileptic drugs**	**2 hours**	**Wedn. 15/11**	Definition and general classification of epilepsy, main antiepileptic drugs like Phenytoin, Carbamazepine, Sodium valproate , the newer drugs as Vigabatrin ,lamotrigine, gabapentin and Topiramete .
11	**Local anesthetics**	**1 hour**	**Sun. 19/11**	Types of local anesthesia ,Mechanism of action ,Lidocaine as a prototype ,methods of prolongation of duration of action of LA.
12	**Antidepressant drugs**	**2 hour**	**Mon. 20/11**	Definition and classification of depression ;classification of antidepressant drugs like Tricyclic group like Imipramine, Amitriptyline, Clomipramine, mechanism of action ,clinical uses, side effects ,SSRIs group like Fluoxetine , MAO inhibitors ,Lithium, clinical use and side effects .
13	**Anti Parkinsonian drugs**	**1 hours**	**Wedn. 22/11**	Definition of Parkinson disease and pathophysiology ,cholinergic and dopaminergic mechanism in Parkinson disease ,drugs useful in disease ;L-dopa, decarboxylase inhibitors ,dopamine agonists as Bromocriptine .
14	**Ethanol pharmacology**	**1 hours**	**Sun. 26/11**	Metabolism and pharmacological action of ethanol ,acute and chronic action of Ethanol, interaction with other drugs .
15	**NSAIDs**	**2 hours**		Classification ,COX1- inhibitors such as salicylates, Ibuprofen, Indomethacin, COX2- inhibitors like Celecoxib. Differences between COX1 and COX2 . other uses of NSAIDs with mechanism of action such as Aspirin and Paracetamol.
16	**Opioids analgesics**	**2 hour**		Narcotic: endogenous enkephalins and endorphins ,Opiates receptors ,mechanism of action of narcotic

				analgesics, Morphine as a prototype drug .other like Pethidine ,Codeine ,Methadone, Tramadol and Propoxyphene. Opiate antagonists : Naloxone and Nalorphine .
17	**Anti rheumatic drugs**	**1 hour**		Aims of treatment of rheumatoid arthritis ,disease modifying drugs ,role of corticosteroids in rheumatoid arthritis .
18	**Drugs used for gout**	**1 hour**		Drugs useful in acute attack of gout :NSAIDs and Colchicines, drugs useful in chronic gout :- Probencid and Allopurinol.
19	**Ganglionic and neuromuscular blockers**	**1 hour**		Neuromuscular transmission .classification of muscle relaxants into depolarizing and non depolarizing agents .peripherally and centrally acting muscle relaxants :Dantroline ,Baclofen, and Benzodiazepines .
20	**3- Drugs acting on respiratory tract**	**3 hours**		Bronchodilators :beta 2 stimulants ,xanthine derivatives ,mast cell stabilizers :Sodium cromoglycate and ketotifen .Mucolytics and expectorants .Mechanism of cough and cough suppressants .
21	**4- Drugs acting on GIT**	**3 hours**		Antacids, anti ulcer drugs include :H2-blockers ,proton pump inhibitors ,Sucralfate ,bismuth chelate ,prostaglandins analogues as misoprostol, laxatives and purgatives ,antidiarrhoeal drugs ;antiemetic drugs like Metoclopramide and domperidone. Drugs useful in ulcerative colitis and drugs for dissolution of gall stones .
22	**5- Drugs acting on urinary system**	**3 hours**		Renal handling of water and electrolytes .Diuretics ; mode and site of action ;classification and clinical uses .
6- Drugs acting on cardiovascular system				
23	**Anti hypertensive drugs**	**2 hours**		Definition of hypertension ,factors regulating blood pressure; classification of anti hypertensive drugs :-Diuretics ,centrally acting drugs , calcium channels blockers and angiotensin converting enzyme inhibitors ,angiotensin-2-receptors blockers ,beta blockers , non-pharmacological treatment of hypertension .
24	**Drugs used to treat ischemic heart diseases**	**2 hours**		Definition of angina pectoris ;Nitrates, pharmacological features of GTN; mechanism of action; rout of drug administration side effects and

				tolerance . other drugs useful in treatment of angina as calcium channel blockers and beta blockers ,role of anti-plate let in angina .
25	**Drugs used to treat heart failure**	**2 hours**		Pathophysiology of heart failure ;cardiac glycosides ;pharmacology of Digoxin as a prototype drug ;other drugs like vasodilators ,and ACE inhibitors in heart failure ;New inotropic drugs as Amrinone and Milrinone.
26	**Antiarrhythmic drugs**	**3 hours**		Pathophysiology of cardiac arrhythmias; types of arrhythmias ;classification of anti arrhythmic drugs .pharmacology of lignocaine ;Procainamide ;Quinidine ;Disopyramide ,beta-blockers and calcium channel blockers .
27	**Anticoagulant drugs**	**2 hours**		Blood coagulation process . Heparin; unfractionated (UFH)and low molecular weight heparin(LMWH):mechanism of action , p/k. ; clinical uses and side effects ;Advantages of the use of LMWH on UFH. plate let aggregation inhibitors ; Clopidogrel; thrombolytic agents and dugs acting on the plate lets ;Vitamin K preparation and Aminocaproaic acid .
28	**Fibrinolytic, antifibrolytic and ant platelets drugs**	**2 hours**		Physiology of plate let adhesion and aggregation (thrombus formation), anti plate let aggregation as Aspirin, Abciximab, Tirofiban ,plasminogen activators as Streptokinase,Alteplase,Anistreplaes.
29	**Anti anemic and vitamins**	**2 hours**		Iron preparations, indications and adverse effects , folic acid ,and V itaminb12 ,Haemopoietic growth factors.
30	**Hypolipidemic drugs**	**2 hour**		Statins, Cholestyramine, Nicotinic acid , Gemfibrozil .
7- Chemotherapeutic drugs				
31	**Antibacterial drugs**	**5 hours**		Definition and introduction to antimicrobial agents ,mechanism of action and resistant to antimicrobial drugs (Penicillin, cephalosporins first to fourth generations), Vancomycin, Sulphonamides and urinary tract antiseptic , Aminoglycosides , Macrolides as Erythromycin, Clindamycin, Tetracyclines , Fusidic acid, Chloramphenicol and Quinolones .
32	**Anti tuberculosis**	**1 hour**		Definition ; classification ,first and second line drugs ,Rifampicin, Isoniazid ,

				Ethambutol, Cycloserine, Para - aminosalicylic acid ,and Streptomycin .
33	**Anthelminthic drugs**	**2hours**		Classification of worms ,classification of anthelmintic drugs, mechanism of action and side effects ,broad spectrum anthelmintic ,Albendazole ,Mebendazole ,Pyrantel pamoate Piperazine ,Thialbendazole ,Ivermectin .
34	**Antifungal drugs**	**1 hour**		Local and systemic anti fungal drugs , Amphotericin , Griseoflvin, Nystatin and Flucytosine .
35	**Ant protozoa drugs**	**2 hours**		Metronidazole ,Diloxanide furoate, Chloroquine ,Iodoquinol; Emetine .
36	**Antimalarial drugs**	**1 hour**		Definition ;life cycle of malarial parasite; classification of anti malarial drugs ;Chloroquine, Quinine ,Primaquine, Mefloquine ,Artemisinin, possible mechanism of action and side effects ; Antimalarial drugs and G6PDD .
37	**Antiviral drugs**	**1 hour**		Why it is difficult to treat viral infection ;classification of anti viral drugs according to mechanism and site of action ;Acyclovir, anti retroviral agents as Zidovudine, Lamivudine and stavudine ; protease inhibitors as Indinavir, Ritinovir ;Antiinfluenza agents as Amantadine ,Rimatadine, and Osdeltamivir .
38	**Cancer chemotherapy**	**3 hours**		Classification of cytotoxic drugs .mechanism of action ,clinical uses and adverse effects .
8- Hormones				
39	**Corticosteroids**	**2 hours**		Pharmacological action of steroids ,different preparations ,clinical uses , adverse effects , differences between glucocorticoids and mineralocorticoides .
40	**Insulin and oral hypoglycemic drugs**	**2 hours**		Definition and clinical features, Insulin; action and different preparations ,side effects ; oral hypoglycemic drugs ;Sulphonylureas ,Biguanides , meglitinides , thiazolidindiones and alpha-glucosidase inhibitors .

41	**Thyroid hormones and ant thyroid drugs**	**1 hour**		Thyroid hormones, biosynthesis And pharmacological actions ,Carbimazole and Propylthiouracil ,the use of radio-active iodine .
42	**Drugs acting on uterus**	**1 hour**		Oxytocin and Ergometrine ,pharmacology and mode of action ,clinical uses ,prostaglandins as abortant drugs .
43	**Sex hormones and contraceptives**	**2 hours**		Oral contraceptive pills types ,pharmacological actions and clinical uses ,adverse effects and contraindications .
44	**Androgens and anti androgens**	**1 hour**		Pharmacological action, clinical uses and side effects of androgens ,anti androgens .
9- Selective topics				
45	**General toxicology**	**3 hours**		Heavy metal poisoning ,Thallium poisoning ,the use of chelating agents ,activated charcoal .
46	**Skin pharmacology**	**1 hour**		Principle of treating skin diseases, dermatological preparations , percutaneous absorption .
47	**Immune-pharmacology**	**1 hour**		Indication of immunosuppressant ;ciclosporin, tacrolimus, corticosteroids , cytotoxic drugs as Azathioprine ,cyclophosphamide , monoclonal antibodies as basiliximab and anti lymphocytic immunoglobulin.
48	**Drug interaction**	**1 hour**		Definition ; types of interactions ,harmful and useful ,antagonism, synergism , interaction of drugs with food.

Practical pharmacology lab.

One weekly (2 hours) practical pharmacology lab is given with different experiments and calculations of various pharmacologically active drugs or groups;(taken in pharmacological lab in the 3rd section of 3rd floor of college building) .

First semester

No.	Lab title
1.	Rout of drug administration.

2.	Drug formulations and pharmaceutical dosage forms.
3.	Weights, measures and posology.
4.	Prescription order writing.
5.	Absorption and excretion of drugs.
6.	Dose response curve (LD_{50} and ED_{50} of Thiopental).
7.	Anti-inflammatory activity of NSAIDs.
8.	Antipyretic activity of some NSAIDs on feverish rats.
9.	Evaluation of analgesic drugs.
11.	General anesthesia.
12.	Local anesthesia.

Second semester

No.	Lab title
1.	Action of drugs on the eye.
2.	Muscle relaxation effect of diazepam in mice.
3.	Diuretic effect of some drugs on conscious rat.
4.	Effects of some drugs on uterine contraction of rat uterus.
5.	Effect of drugs on blood pressure of anesthetized rat.
6.	Drugs effect on rabbit heart.
7.	Investigation for active principles of plants.
8.	Analytical and drug measurement techniques
9.	Muscle relaxation effect of diazepam in mice.
10.	Study of aspirin and paracetamol toxicities.

Students seminars

The design of student seminars focus on the student as the central part of the learning rather than focus on lecturer, who giving the outlines and advice the student to get more informations from the given resources (student self –study); in small group teaching (about 40 students in each group) ,distributed as 3 group per week .

Assessment of student done according to the understanding of the subject , language, personality and littreture survey (writing and arrangement of seminar) .

Pathology and Fornsic

المقدمة: وهو من الفروع الاساسية في كلية الطب تم افتتاحة في عام 2005 ويدرس فيه علم الامراض والطب العدلي لطلبة المرحلتين الثالثة والرابعة.

أهداف المادة العلمية لعلم الامراض:-

في نهاية المرحلة الدراسية الثالثة نتوقع من الطالب ان يكون قادرا على ان:

1. فهم التغيرات المرضية
2. فهم العلاقه بين الحالة السريريه والتغيرات المرضية

3. قادر على البحث في المادة العلمية في علم الامراض
4. الربط بين وظائف الاعضاء والتغيرات المرضية
5. الاطلاع الكافي على الاطلس المصور للتغيرات المرضية
6. الحظور في مختبر المستشفى التعليمي والاطلاع على الممارسة العملية في هذا الاختصاص
7. دراسة الشرائح المجهريه والعينات الكبيرة
8. تحفيز الطالب على الرغبة بمتابعة الدراسة والتخصص مستقبلا في هذا الاختصاص

الساعات المنهجية	الفصل الأول	الفصل الثاني	عدد الوحدات
الساعات النظرية	60 ساعة	60 ساعة	12
الساعات العملية	60 ساعة	60ساعة	

Textbooks approved;

-Robbins Basic pathology 8th ed.

- Steven's Core pathology 3ed ed. 2oo9

Teaching methods(overview student centered learning lectures site visit practical*);*

Assessment;

summative and formative written assessmen

project

written exam midyear=25 degrees,final exam=45 degrees,practical exam=15 degrees,quizzes=20 degrees

No	Title of lectures and educational objectives	hours
1	**Introduction**	1
Week1	**Cellular injury and adaptation** , **In these lectures you will understand the following:** ❖ Definition & classification of injurious agents ❖ Mechanism of cell injury:- • Reversible injury	4

	• Irreversible injury:- necrosis & apoptosis ❖ Intracellular accumulation ❖ Cellular adaptation ❖ Degenerative changes	
Week2	**Inflammation** **In these lectures you will understand the following:** ❖ Acute inflammation • Vascular changes • Cellular changes • Chemical mediators • Morphological pattern of acute inflammation • Fate of acute inflammation ❖ Chronic inflammation • Causes • Morphological features ❖ Granulomatous inflammation	4
Week3	**Healing & repaire** **In these lectures you will understand the following:** ❖ Definition ❖ Cell cycle ❖ CT. response(including extracellular matrix component) ❖ Regeneration ❖ Healing of skin wounds ❖ Healing of bone fractures ❖ Factors affecting healing & complications	3
Week4	**Haemodynamic** **In these lectures you will understand the following:** ❖ Congestion ❖ Edema ❖ Thrombosis ❖ Embolism ❖ Infarction ❖ Shock	6
Week5	**Infectious diseases** ❖ host organism interaction ❖ defenses mechanism ❖ categories of infectious agents ❖ route of entry of microorganisms ❖ how infectious agents causes disease ❖ selected human infectious disease • Tb.& respiratory tract infections • Leprosy • Bilharziasis • Hydatid disease • Aspergillosis	10

	• Pyogenic bacterial infection: staphylococcal &streptococcal spp. • Gastrointestinal tract infections • Sexual transmitted diseases	
Week6,7	**Neoplasia** **In these lectures you will understand the following:** ❖ Normal cell growth ❖ Molecular base of cancer ❖ Cancer etiology ❖ Features of transformed cells ❖ Nomenclatures ❖ Non-neoplastic mass ❖ Morphological differences of benign from malignant ❖ Grading &staging of tumors ❖ Cancer epidemiology ❖ Host immunity against tumors ❖ Immune surveillance ❖ Clinical feature of tumors ❖ Lab diagnosis of cancer	12
Week 8	**Genetic disease** **students must educate;** ❖ Mutation ❖ Mendelian disorders (diseases caused by single gene defects) ❖ Disorders with multifactorial inheritance ❖ Single gene disorders with a typical patterns of inheritance ❖ Pediatric diseases ❖ Congenital malformation	6
Week9	**Disorders of immune system** **students must educate;** ❖ Introduction (cells, cytokines, histocompatibilty) ❖ Immune mechanism of tissue injury ❖ Autoimmune diseases • Self tolerance • Mechanism of autoimmune diseases • Selective examples of autoimmune diseases ❖ Immune deficiency disease ❖ Amyliodosis	5
Week10	**Environmental diseases,** **In these lectures you will understand the following:** ❖ Air pollution diseases ❖ Injury by chemical agents ❖ Injury by physical agents ❖ Nutritional diseases • Metabolic effect of starvation	4

	• Nutritional deficiencies • Protein energy malnutrition syndrome • Vitamins deficiency • Mineral deficiency	
Week 11,12	**Cardiovascular system** **students must educate;** ❖ The heart • Congestive heart failure • Ischemic heart disease • Hypertensive heart disease • Valvular heart disease • Congenital heart diseases ❖ The arterial disease • Arterioseclerosis • Vasculitis • aneurysm ❖ Venous disease • Varicose viens • Phlebothrombosis & thrombophilibitis ❖ Lymphatic disorders ❖ Vascular tumors	8
Week13,14	**Respiratory system** **students must educate;** ❖ Obstructive & restructive lung disease ❖ Vascular lung diseases ❖ Pulmonary infection ❖ Lung tumors ❖ Pleural effusion ❖ Lesion of upper respiratory tract	8
Week15,16	**Urinary system** **students must educate;** ❖ Glomerular diseases ❖ Diseases affecting tubules and interstitium ❖ Cystic disease of the kidney ❖ Urinary out flow obstruction ❖ Tumors	8
Week 17	**Reproductive system** **In these lectures you will understand the following:** ❖ Male reproductive system • Diseases of penis • Diseases of secrotum, testis, epidydimis • Diseases of prostate	4
Week 18	**Female reproductive system** **students must educate;** ❖ Valvitis ❖ Non- neoplastic epithelial tumors	4

	❖ Vuvalr tumors ❖ Vagina (vaginitis, vaginal intraepithelial neoplasia & ca ❖ Cervix (inflammation, tumor) ❖ Body of uterus ❖ Fallopian tube diseases ❖ Ovaries ❖ Diseases of pregnancy	
Week 19	**Diseases of the breast,** **In these lectures you will understand the following:** ❖ Inflammation ❖ Fibrocystic disease(including non-proliferative & proliferative) ❖ Tumors,risk factors,gross and microscopical features ❖ Male breast ❖	3
Week 20,12	**Gastrointestinal diseases** **In these lectures you will understand the following:** ❖ Oral cavity • Ulcerative and inflammatory lesion • Leukoplakia • Tumor of the oral cavity and tongue • Salivary gland diseases (inflammation and tumors) ❖ Esophagous • Esophagitis including Barrettes- esophagous • Anatomic and motors disorders (hiatus hernia, achalsia, varices, Mallory- Weiss syndrome) • Carcinoma types,predisposing factores. ❖ Stomach • Gastritis • Gastric ulcer • Tumors, predisposing factores. ❖ Small and large intestine • Developmental anomalies • Vascular disorders • Diarrheal diseases • Idiopathic inflammatory bowel diseases • Colonic diverticulosis • Tumors of small and large intestine ❖ Appendix • Appendicitis • Tumors ❖ Liver • Jaundice • Hepatic failure • Hepatic cirrhosis • Inflammatory disorders	10

	• Drug and toxin induce liver disease • In born errors of metabolism • Circulatory disorders • Intrahepatic biliary tract disease ❖ Gallbladder and biliary tract • Disorders of gall bladder • Disorder nof extrahepatic bile tract • tumors ❖ pancreas • pancreatitis • diabetes mellitus • islet cell tumors	
Week 22	**Endocrinal system,** **In these lectures you will understand the following:** ❖ pituitary gland • hypopituitarism • hyperpituitarism • posterior pituitary syndrome ❖ thyroid gland • clinical condition (hyper and hypothyroidism) • thyroiditis • goiter • neoplasm of thyroid gland ❖ parathyroid gland • hypoparathyroidism • hyperparathyroidism ❖ adrenal gland • adrenocortical hyperfunction • adrenocortical insufficiency • neoplasm • adrenomedullary diseases ❖ multiple endocrine neoplasia syndrome	6
Week 23,24	Diseases of blood and bone marrow, **In these lectures you will understand the following:** ❖ red cells disorders • hemorrhage • haemolytic anemia • anemia and diminished erythropoisis • polycythemia ❖ white cells disorders • non- neoplastic disorders of WBC • neoplastic proliferation of WBC(lymphoma, leukemia, myloproliferative disease) ❖ bleeding disorders • thrombocytopenia • coagulative disorders	6

	❖ diseases of spleen and thymus	
Week24,25	**Diseases of locomotors system, students must educate;** ❖ diseases of bone • congenital and hereditary diseases of bone • osteoporosis and acquired metabolic diseases • osteomyelitis • pagets diseases • bone tumors ❖ diseases of joints • osteoarthritis • gout • infectious arthritis ❖ diseases of skeletal muscle • muscle atrophy • myasthenia graves • inflammatory myopathies • muscular dystrophy ❖ soft tissue tumors • tumors of adipose tissue • tumors and tumor like lesion of fibrous tissue • neoplasm of skeletal muscle • smooth muscle tumors	4
Week 26	**The nervous system, students must educate;** ❖ introduction (cells of the nervous system) ❖ edema, herniation and hydrocephalous ❖ vascular diseases ❖ CNS trauma ❖ Infection of the NS ❖ Neoplasm of the CNS ❖ Primary diseases of myelin ❖ Degenerative diseases ❖ Diseases of peripheral nervous system	4

Community Medicine for 3rd year medical students

NB. The bulk of the principles and methods of Community Medicine is taught during the fourth year of medical program. The 4th year course consists of 95 theoretical hours and 120 hours of practical classes and fieldwork.

3.1. Specific Objectives of third year course

The course is designed to enable the student to:

1. Define statistics and list the main uses of statistics in medicine
2. List methods of data presentation and demonstrate the ability to present raw data in meaningful form
3. State the purpose of a frequency distribution and cumulative frequency distribution in describing a set of biological measurements
4. Distinguish between normal frequency distribution and skewed distribution
5. Define the mean, mode, median and standard deviation and standard error and compute each of them from grouped and ungrouped data
6. Use the standard error to compute 95% confidence limit for a mean or a proportion
7. Distinguish between the standard deviation and the standard error and give examples of the use of each
8. Select and compute necessary calculations to explore the statistical significance of a comparative qualitative and quantitative set of data
9. Interpret statements of statistical significance with regard to comparisons of means and frequencies and explain what is meant by statements such as ($P<0.05$)
10. Explain the main pathways of metabolism of major diet components
11. Define the requirements of major human nutrients
12. Explain the nutrient requirements of special groups (e.g. pregnant woman)
13. Explain the interaction of infection and nutritional status of an individual
14. List the main approaches to assess nutritional status of population
15. List and define major nutritional diseases

3.2. Syllabus

The course consists of 30 theoretical hours and 30 practical hours. The details are shown in Table (1) below:

Table (1): detailed topics of community medicine to third year medical students

Term and main subject	Topics	Hrs
First Term: **Medical Statistics** Tutor Dr Ali Abid Sa'adoon	Introduction to medical statistics	**1**
	Summarization and presentation of data	**2**
	Measurement of central location	**1**
	Measurement of variability	**1**
	Introduction to sampling	**1**
	The normal distribution and its characteristics	**1**
	The confidence interval and limit	**1**
	Tests of significance: the Z test, the t test, and the X^2 test	**4**
	The concept of community diagnosis as an application of statistics in measuring population health	**3**
Sub-total		**15**
Second Term: **Public Health Nutrition** Tutor Dr Muslim Nahi Saeed	Definition of relevant terms	**1**
	Nutrient metabolism and requirements	**3**
	Nutrition and infection	**1**
	Nutrition of specific groups of population	**2**
	Nutritional surveys and assessment of nutritional status of population	**2**
	Selected Nutritional diseases	**3**
	Diet therapy and nutritional rehabilitation	**3**
Sub-total		**15**
Grand-total		30

Term	Topics	Hrs	Lecturer
First Term	Introduction to medical statistics	1	**Dr. Ali Abid Sa'doon**
	Summarization and presentation of data	2	
	Measurement of central location	1	
	Measurement of variability	1	
	Introduction to sampling	1	

	The normal distribution and its characteristics	1	
	The confidence interval and limit	1	
	Definition of relevant terms	1	**Dr. Muslem Nahi**
	Nutrient metabolism and requirements	3	
	Nutrition and infection	1	
	Nutrition of specific groups of population	2	
Sub-total		**15**	
Second Term	Tests of significance: Z test, t test, and X^2 test	4	**Dr. Ali Abid Sa'doon**
	The concept of community diagnosis as an application of statistics in measuring population health	3	
	Nutritional surveys and assessment of nutritional status of population	2	**Dr. Muslem Nahi**
	Selected Nutritional diseases	3	
	Diet therapy and nutritional rehabilitation	3	
Sub-total		**15**	
Grand-total		30	

Practical: This consists of class-based desk exercise sessions, two hours each. The classes are run as one session per week for the 15 weeks during the first term. Students are divided into groups of 15-25 trainees. Each group is assigned a tutor from the Department faculty. Recently the tutors are rotating on groups to interchange expertise and experience and to reduce interpersonal variation in assessing the students.
No practical classes are organized during the second term but a demonstration exercise may be arranged.

3.3. Teaching methods

The Department of Community Medicine adopts a variety of teaching methods including:

d. Lecture with elements of interactive teaching
e. Small group discussions

f. Small group desk exercises in medical statistics
g. All available means are used to demonstrate scientific material (whiteboard, data show digital projectors, computer with LCD screens group work etc.)

3.4. Student assessment

The minimum requirement of a student to be transferred to fourth year is to achieve at least 50% of the total 100 marks assigned for the course.

The marks are distributed as follows:

e. First term 12.5 marks based on daily continuous assessment using approved check list plus written short examinations (quizzes)
f. Mid year written examination: 25 marks
g. Second term 12.5 marks based on one written examination near the end of the term
h. Final examinations (50 marks): The final examination consists of two parts; a comprehensive written examination using variety of questions (MCQ, matching, short answer questions, problems requiring mathematical calculations...etc)

Students who fail to attain the 50% cut-off mark are required to re-sit in September for comprehensive examinations similar to the final one (written and oral). Failing in the re-sit examination entails the student to repeat the academic year.

3.5. Books

1. Medical statistics by Bradford Hill
2. Medical statistics by Daniel
3. Students are encouraged to use library and internet to further acquire knowledge from available resources

Internal Medicine

3rd stage

A. Theoretical teaching:

The total number of lectures is 60 which cover the following

1. common symptoms and signs in medicine as an introductory lectures, (10 Lec.)

Including common signs and symptoms of the cardiovascular system, respiratory system, gasterointestinal system, genitourinary system and central nervous system.

2. Clinical immunology (9 Lec.)

Functional anatomy &investigations of immune system, Innate &adaptive immune system, Immune deficiency, Inflammatory response, Autoimmune disorders, Allergic disorders, Anaphylaxis & angioedema, Transplantation& graft rejection.

3. Water and electrolyte disturbances: (9 Lec.)

Normal physiology, function of the nephron and water and electrolytes absorption, diuretics(classifications , side effects and diuretic resistance, Sodium disorders, Potassium disorders, calcium disorders, Magnesium and phosphate disorders, Acid base balance disorders, metabolic acidosis, Metabolic alkalosis, respiratory acidosis and respiratory alkalosis causes, clinical features, diagnosis and treatment.

4. Clinical genetic (5 Lec.)

Clinical application, classification, investigations, Autosomal disorders, X linked disorders, gene therapy.

5. Nutritional disorders; (10 lec.)

Energy balance, response to under and over weight, Summery of foods containing fat, proteins and carbohydrate, Obesity, Malnutrition, Malnutrition in hospital, Disease of micronutrient (Vitamins and minerals) – Vitamin A, Vitamin D,E,K, Water soluble vitamin (B1,B2,Naicine), Vitamin B6,B12,Folic acid and Vitamin c, Mention every vitamin with the source of it and disease result from its deficiency, In organic nutrient : Flouride ,copper ,selenium ,zinc , calcium, phosphate , iodine, Summary about inorganic nutrient and disease caused by deficiency and excess of each one.

6. Endemic and helminthic infections (17 Lec.)

Presenting problems in infectious diseases, presentations of fever, skin rash, lymphadenopathy and spleenbomegaly, Pyrexia of unknown etiology, Bacteremia and septicemia, Antimicrobial therapy, Antibiotics, antiviral, antifungal and antihelmenth. Amoebiasis, Giardiasis, Malaria, Visceral Leishmaniasis, Cutaneous and mucosal Leishmaniasis, African and American Trypanosomiasis, Toxoplasmosis, Infections caused by helminthes, Classifications, Ancylostomiasis, pathology, clinical features, diagnosis and treatment, Ascariasis and Enterobiasis, clinical features,

diagnosis and treatment Schistosomiasis, pathology, clinical features, diagnosis , treatment and prevention, .
Taenia saginata, Taenia solium, cysticercosis and hydatid disease.

B. Clinical training:

The clinical training hours are 60 hours. The training introduces the students in groups to the bedside in the wards to be familiar with hospital environments and to begin to approach problem oriented history taking and the general examination.

Surgery

3rd stage

1-Fluid , electrolyt & acid base balance(2 hrs)
2-Metabolic response to trauma (2 hrs)
3- Heamorrhage , blood transfusion (2hrs)
4-Shock (2hrs)
5-Wound healing. Scar and kiloid (2hrs)
6- Surgical infections(hr)
7-Stirilization (1hr)
8-Burn (2hrs)
9-Periphiral arterial diseases & gangrene [2 hrs]
10- Lymphatic (1hr)
11- DVT(1hrs)
12- Ulceration (1hr)
14-Hydatid disease[2hours]
15-Neoplasim & tumor marker (hr)
16 – Soft tissues masses (2hrs)
17- Skin infection (cellulitis , abcesses , boils ….)(1hr)
18-Types of incisions(1hr)
19-Surgical material & instruments(1hr)
20-Preopertive assessment(1hr)
21- Postoperative complications(1hr)
22-Laparoscope & endoscope(hr)

Fourth Stage

Subject		Didactic hours			No.# of units
		Theoretical	Practical	Discussion	
1	Internal medicine	120	120	-	12
2	General surgery	96	90	-	9
3	Pediatrics	30	60	-	4
4	Obstetrics	60	90	-	7
5	Community medicine	105	120	-	11
6	Forensic medicine	60	60	15	6
7	Behavioral science *	30	-	-	2
8	Medical ethics * *	30	-	-	2
	Total	525	540	-	53

*** Behavioral sciences lectures are delivered by teaching staff of psychiatry unit of medicine department in collaboration with teaching staff of pathology department.**

*** * Medical ethics lectures are delivered by the oldest teaching staff of clinical sciences departments (medicine, general surgery, pediatrics, gynecology and obstetrics) in collaboration with teaching staff of community medicine department.**

 # (unit = 15 hours theory or 30 hours practical or Clinical)

forensic medicine:

المنهاج الدراسي لمادة الطب العدلي - المرحلة الرابعة

ت	العنوان والاهداف	عدد الساعات
1	المقدمة: يجب على الطلاب معرفة التالي: 1- تعريف الطب العدلي 2- نبذة تاريخية . 3- نظم الطبابة القضائية. 4- الفاحص والمفحوص.	 1 1 1 1
2	الجروح والرضوض: يجب على الطلاب معرفة التالي: 1-الرضوض. 2- السحج. 3- الكدمات. 4- الجروح الرضية. 5- الجروح الحادة.	 1 1 1 1 2
3	الخضائص المميزة لاضرارالمناطق والانسجة الجسمانية المختلفة: يجب على الطلاب معرفة التالي: 1- اضرار الرأس والدماغ. 2- اضرار العين. 3- اضرار الرقبة والصدر. 4-اضرار للبطن. 5-اضرار الاطراف.	 1 1 1 1
4	عوارض وسائط النقل: يجب على الطلاب معرفة التالي: 1- دعس السيارات وعربات الحمل الثقيلة. 2- عوارض قاطرات السكة الحديد وحوادث الظائرات.	 1 1
5	جروح الاسلحة النارية: يجب على الطلاب معرفة التالي: 1- الية الاطلاق. 2- كلوم المنفجرات. 3- اضرار الطلقات المطاطية. 4-اضرار البنادق الهوائية.	 1 1 1 1
6	اضرار الكهرباء.	1
7	اضرار الحرارة والبرد : يجب على الطلاب معرفة التالي : 1- ضربة الشمس. 2- الحروق. 3-اضرار البرد.	 1 1 1
8	الغرق.	2

9	موت الفجائة: يجب على الطلاب معرفة التالي: 1- تعريف وتوضيح. 2- الموت الفجائي المتوقع. 3- الموت الفجائي الغير متوقع. 4- الموت المبهم.	 1 1 1 1
10	الكحول.	1
11	التسمم بالمبيدات الحشرية والزراعية.	1
12	التسمم بالنفط الابيض.	1
13	الموت: يجب على الطلاب معرفة التالي: 1- تعريفه وبيان الحتمال وقوعه. 2- تشخيصه وتعيين الزمن المنقضيعلى حلوله. 3- الصمل الموتي. 4- التفسخ. 5- التشمع الشحمي	 1 1 1 1 1
14	قيافة الجثث والاشلاء والعظام.	2
15	قيافة الشعر والدم وسوائل الجسم.	2
16	الامور الجنسية:يجب على الطلاب معرفة التالي: 1- الفرج و غشاء البكارة. 2- نتائج المواقعة الجنسية. 3- الالتهاب التناسلي. 4- الشذوذ الجنسي.	 1 1 1 2

المصادر:

الطب القضائي للدكتور ضياءالموسوي

طرائق التدريس:

1-المحاضرات

2-المناقشة

3-المشاهدات الصورية

4-الزيارة لوحدة الطب العدلي

التقييم والامتحان:

امتحان الفصل الاول=10 درجات

امتحان نصف السنة=30 درجة

امتحان الفصل الثاني=10 درجات

الامتحان النهائي=50 درجة

Community Medicine for 4th year medical students

The bulk of the principles and methods of Community Medicine is taught during the fourth year of medical programme. The 4th year course consists of 95 theoretical hours and 120 hours of practical classes and fieldwork.

Broad objectives for undergraduate community medicine

The curriculum topics are designed to help trainees:

1. **To acquire basic knowledge on main components of community medicine interests**
2. To develop relevant competencies and skills in epidemiology and statistics so as to be able to measure and evaluate health and health care services
3. To develop abilities and competencies in the epidemiology and control of major health problems at population level
4. To develop basic principles of scientific research
5. To develop understanding of primary health care as strategy and services to the population
6. To contribute to the requirements of graduation of competent doctors to serve national, regional as well as local goals
7. To be prepared for postgraduate training in the future
8. To be prepared to pursue self-learning towards continuing professional development.

2.2. Specific objectives of the 4th year course

The course is designed to enable the student to:

1. Interpret the distribution of disease in a population in terms of person, place and time
2. Describe the components of a rate, ratio and proportion

3. List, define and compute common rates used to measure fertility, morbidity and mortality in community
4. Define absolute risk, relative risk and attributable risk. Interpret their use in epidemiological situations
5. Distinguish between association and causation and list causal criteria
6. Describe major epidemiological studies (cross-sectional, longitudinal, case-control and cohort)
7. Make a simple design of an epidemiological study to describe the distribution of disease in population
8. Make a simple design of an epidemiological study to identify risk factors for a given disease
9. Analyze and interpret results obtained from relevant epidemiological studies
10. Define sensitivity, specificity and predictive values and compute these measures given the necessary data
11. Define epidemic, endemic and pandemic and list the steps of investigating and managing an epidemic of a communicable disease
12. Identify the major communicable diseases prevalent in Iraq
13. Demonstrate the main epidemiological features, specific preventive measures and control measures of common communicable diseases in Iraq
14. Promptly respond to crises associated with threats of communicable diseases spread
15. Describe the main epidemiological features, risk factors and preventive measures of major non-communicable diseases (CHD, DM, Cancer, Accidents)
16. Appreciate the role of primary health care approach in dealing with mental health
17. Recognize the principles of planning, management of evaluation of health care programmes in a given setting
18. Define environmental health and list its main concerns
19. List major risks associated with environmental exposures
20. Describe major effects of work on health
21. Recall major occupational disease
22. List major groups of carcinogens with special reference to the situation in Iraq
23. Appreciate the role of social and cultural factors in health and disease

Syllabus First Term

Total hours:

Theory: 45 hrs

Practical: 60 hrs

Table 1: General epidemiology (Tutor: Dr Ali Abid Sa'doon)

Topics	Hrs.
Introduction : concept of health and disease, definition of epidemiology, epidemiological uses and approaches	2
Epidemiological data: types, sources and limitations	1
Epidemiological measurements : rates, proportions and ratios	2
Descriptive epidemiology: person, place and time	2
Descriptive epidemiological studies: Cross-sectional, Longitudinal, Case control, Cohort, Interventional	1
The concept of association, causation, risk	1
Analytical epidemiological studies	2
screening and quality control of screening and diagnostic tests-clinical epidemiology	2
Designing epidemiological studies	1
The concept and investigation of epidemic	1
Total	15

Table 2: Epidemiology and control of communicable diseases (30 hrs) (Tutors: Dr.Muslim Nahi Saeed + Dr Ali Abid Sa'doon)

Topics	Hrs
-definition of terms	1
-infections acquired through the gastrointestinal tract:	7
Diarrhoeal diseases: extent of the problem, causes, risk factors and control	1
Comparative epidemiology of rotavirus, salmonella, cholera and shigellosis	1
Amoebiasis and shigellosis	1
Bacterial food poisoning	1
Poliomyelitis	1
Infections hepatitis A	1
Typhoid and paratyphoid fever	1
- infections acquired through the respiratory system (air borne infections):	9
Acute respiratory infection (ARI): extent, causes, risk factors and strategies of control of ARI	2

Exanthematous infection: Measles, german measles, chicken pox…etc	2
Mouth and throat infection: Diphtheria, mumps, and tonsillitis	2
Whooping cough	1
Tuberculosis	1
Acute bacterial meningitis	1
- percutaneous infection: infections acquired through te skin	8
insect bites: malaria, leishmaniasis, rickettsia	2
Abrasions: anthrax	1
animal bites, rabies	1
wounds: tetanus	1
injections: hepatitis B, AIDS	1
Penetration: Schistosomiasis, hookworm	1
-sexually transmitted diseases	2
- zoonotic infections	2
- Nosocomial infections and traveller health	1
Total	30

The practical in the first term consists of epidemiological desk exercises. These are quantitative practical classes handling specific epidemiological issues covering demographic, vital and health topics. Fourth year students are divided into subgroups of 15-25 students each. The groups are supervised by faculty members in rotation. Exercises are designed to further development of the knowledge and skills.

Second Term: Theory 45 hours
Practical 60 hours

Table 3: Epidemiology and control of non-communicable diseases (10 hrs.) Tutor: Dr Ali Abid Sa'doon)

Topics	Hrs.
Epidemiology of ischaemic heart diseases	2
Epidemiology of diabetes mellitus	2
Epidemiology of cancer	2
Epidemiology of accidents	2
Epidemiology of mental health and geriatrics	2

Table 4: Maternal and child health care (15 hours) (Tutors Dr Muslim Nahi Saeed)

Topics	hrs

Maternal Health 7 hours	
Introduction to MCH care	1
Components of MCH care	2
Nutrition during pregnancy	1
Infection during pregnancy	1
Low birth weight and prematurity	1
Evaluation of MCH care	1
Health care for children 5 hours	
under five clinics	1
growth monitoring	1
Immunization	1
Development clinics	1
care for handicapped children	1
School health services: concept and plans	2
Vital statistics in MCH care	**1**

Table 5: Environmental health (5 hours) (Tutor: Dr Muslim Nahi Saeed)

Topics	Hrs
Definition of health and disease within the context of environment, and environmental health	1
Basic activities of environmental health	
Water: sources, quality and related diseases	1
Air: sources of pollution, health effects and control of air pollution	1
Toxicology: Common environmental problems	2

Table 6: Occupational health (5 hours) (Tutors Dr Muslim Nahi Saeed)

Topics	hrs
Definition of occupational health	1
Objectives of occupational health services	
Health hazards associated with work	1
Health hazards to the environment and community which result from industrial activities	1
Safety measures in occupation	1
Selected occupational diseases	1

Table 7: Primary health care (PHC) in Iraq (5 hours) (Tutor Dr Ali Abid Sa'doon)

Topics	Hrs
Limitation of the hospital model/Justifications for PHC	1
Definition, contents and difficulties of PHC/ Supportive programmes/ The five star doctor	2
National PHC programmes: EPI, CDD	1
National PHC programmes: ARI, MCH, Breast feeding	1

Table 8: Healthcare administration (5 hours) (Tutor Dr Muslim Nahi Saeed)

Topics	Hrs
Brief historical view of Iraq health system	1
Concept of administration	1
Planning of health care services	1
Evaluation of health care services	2

Second term: practical (60 hours)

These are based on field projects, which cover real health, and health related problems through household surveys and institutional-based studies in which students use the theoretical knowledge in designing, conducting, analysis and presentation of their results.

Note: Optional practical may include visits to certain health related industries and institutions.

2.4. Teaching methods

The Department of Family and Community Medicine adopts a variety of teaching methods including:

h. Lecture with elements of interactive teaching
i. Small group discussions
j. Small group desk exercises in epidemiology
k. Students research projects including population-based surveys

All available means are used to demonstrate scientific material (blackboard, overhead projectors, data shows, group work etc.)

2.5. Teaching staff and responsibility in summary

General epidemiology	Dr Ali Abid Sa'doon

Epidemiology and control of - communicable diseases	Dr Ali Abid Sa'doon+ Dr Muslim Nahi Saeed
Epidemiology and control of non-communicable diseases	Dr Ali Abid Sa'doon
Maternal and child health	Dr Muslim Nahi Saeed
Primary health care and health care administration	Dr Ali Abid Sa'doon
Environmental health	Dr Muslim Nahi Saeed
Occupational health	Dr Muslim Nahi Saeed
Introduction to medical sociology	Dr Ali Abid Sa'doon
Practical classes	All

Assessment

Fourth year students are critically assessed throughout the academic year with various methods

First term; continuous assessment based on discussions, desk exercises, short written examinations (quizzes) and presentations. The weight of the first term is 10% of the total 100 marks for the whole year.

Mid-year written examination with one paper containing at least four types of questions (short answer, MCQ, problems, matching, statement completion etc). The weight for this examination is 25 %.

Second term continuous assessment based on discussions, desk exercises, short written examinations (quizzes) and presentations. The weight of the first term is 15% of the total 100 marks(**a small-group project works planned, conducted and presented by students under faculty supervision. The weight for the project is 5 %))**and students are marked on the basis of their individual contribution and group performance in the whole project.

Final examination (50%) consisting of written part (50%) similar to the mid-year examination but covers all topics taught during the academic year. This is supplemented by an oral interview (10% of the marks) of each student individually by a committee of 2-3 faculty members using card system of questions.

A student is required to obtain at least 50% of the assigned marks to pass the year; otherwise, a re-sit examination is required in September. Failing in the re-sit examination entails the student to repeat the academic year.

Books for fourth year

1. Epidemiology by Gordis
2. Preventive medicine by Macxy Rosenau
3. Control of communicable disease by Benensen
4. Short textbook of preventive medicine by Lucas and Gilles

5. Introduction to community medicine: PART ONE: Basic Concepts and Methods in Epidemiology and Demography for Medical Students by Omran S Habib.

Medicine Ethics
Fourth year

TOPICS	Hrs
Ethics in general and medical ethics as a subset	1
Principles of medical ethics: Theoretical background and justification of teaching ethics	2
Ethics in International declarations	1
Doctors and community relationship	1
Ethical consideration in preventive medicine	1
Medical ethics in historical perspectives	2
Ethics and research	1
Doctor and patient relationship	1
Doctor and colleagues relationship	1
Ethics in surgical practice	1
Ethics in Gynaecology and obstetrics	1
Ethics in Paediatrics	1
Ethics in Psychiatric practice	1
Ethical consideration in human reproduction	1
Accountability in practicing medicine	5
Special problems: Dying patients, surgical separation of twins, Abortion, Refusal of necessary treatment	4
Optional topics	5
Total	

Paediatrics
Fourth year

Curriculum for 4th stage thiqar college of medicine …pediatrics

Lectures no. 30 hours …… 6 unit …….clinical 120 hours

Week	Lecture title	Objective
1	Growth and development	Evaluation of growth
2	Assessment of growth in neonate& infancy	How student evaluate growth in this age group

3	Assessment of growth in toddler and preschool children	How student evaluate growth in this age group
4	Assessment of growth in school age children	How student evaluate growth in this age group
5	Assessment of growth in adolescence	How student evaluate growth in this age group
6	Nutritional assessment in children , types of malnutrition &investigation	How candidate assess nutritional status
7	Marasmus & kwashiorkor	Clinical presentation & comparism and outcome for each
8	Nutritional rickets	Vit,D metabolism ,investigation & treatment
9	Vaccination ,introduction ,types of immunity	Knowledge about vaccination and how its delivered to children
10	Factors affecting vaccine efficacy	Cool chain of vaccine protection
11	Contraindication and side effect of vaccination	Health promotion about vaccine adverse effect and precaution of vaccine administration
12	Review of some vaccines like measles ,mumps ,rubella ,polio & rota virus vaccines	Evaluation of each vaccine efficacy , benefit and maximum protection
13	Common infectious diseases (measles, rubella	To know clinical features of both diseases and its complication
14	Pertussis and varicella	Early diagnosis may prevent serious complication
15	Mumps ,roseola infantum and diphtheria	Presentation and management
16	Poliomyelitis and tetanus	To know features of both disease and early DX, prevent serious complication
17	Viral hepatitis	To know methods of transmission of hepatitis A,C,B and treatment policies
18	HIV in children	General information about HIV virus , transmission ,DX, and treatment

19	Gastroenteritis (infection of gut)	General information about gut development and function
20	Acute gastroenteritis	Presentation , etiology and management
21	Dehydration (types ,pathophysiology ,WHO classification)	To know how you manage case of different types of dehydration
22	Chronic diarrhea	To know definition , osmotic and secretory types and how differentiate between these types and how manage
23	Fluid therapy (types)	To know a different types of fluid and methods of rehydration and how calculate fluid for different types of dehydration
24	Failure to thrive , definition ,types growth chart	How the student can identify a case of FTT and how he can use the growth chart
25	Organic and inorganic types of FTT	How identify , manage and follow up such cases
26	Feeding in children ,breast feeding	To know how establish breast feeding in the first few hours of life
27	Breast feeding (content ,advantage and technique of feeding	To explain the advantage and encourage for breast feeding
28	Artificial feeding (types of artificial milk, content ,types of available formulas in the market	To know different types of artificial milk and risk of such formula on the baby if not needed
29	Comparism between breast and bottle feeding ,disadvantage of bottle feeding and complication	To know the major differences between breast and artificial milk and why we encourage breast feeding
30	Review of lectures given Q&A	Evaluation of the course and prepare the candidate for the final written exam

obstetrics fourth year

Subject: obstetrics fourth year

Theory : 60 hr/year

Practical : 30 hr/year

Units : 7

Objective :to learn the basic of obstetrics &how can deal with normal & complicated pregnancy

Assessment :a quarterly exam (20 marks).mid year exam (30 marks),final exam. (50 marks)

Text book approved :Ten teachers of obst.

	lecture	objective
1	1.Physiological changes in pregnancy (2 L)	to know the symptoms and the physical finding of each systems in the body during pregnancy to know how the body adapted to the fetus and helping us in diagnosis of pregnancy and its complication
2	Fertilization and implantation Fetal development and growth	This lecture explain spermatogenesis and oogenesis then normal fertilization regarding time and site .Also normal implantation . understanding of normal development, growth, maturation and understanding the complications that may arise in pregnancy for the neonate. Also risks of preterm delivery on infant

3	Placenta and Amniotic fluid Antenatal Care L1	The lecture show normal placentation and abnormal placentation that cause pregnancy complication such as placenta previa ,accrete and IUGR. For follow up the pregnant &early diagnosis &deal the complication
	Antenatal Care L2 Vomiting in pregnancy	For follow up the pregnant &early diagnosis &deal the complication Should be known the different causes of nausea and vomiting and should be differentiated from the hyperemsis gravidarum . The complications of the hyperemsis gravidarum .
	Abdominal pain in pregnancy Prenatal diagnosis	To differentiate between physiological &pathological causes This lecture discuss why prenatal diagnostic tests may be performed and the types of non-invasive and invasive tests available. It will discuss alsofactors which should be taken into consideration prior to offering testing.
	Anatomy of female pelvis and fetal head	Revise your knowledge of fetal head anatomy and pelvic anatomy

	Lobar and physiology of lobar	Understand the concept of normal lobar and its management based on clinical signs and potential pathology.
	The mechanism of lobar Management of lobar L1	Revise your knowledge of the cardinal movement of fetus during parturition Be confident to interpret a partogram and formulate plan based on pattern observed. Be able to define findings on vaginal examination accurately and communicate these in written form.
	Management of lobar L2,L3	Be confident to interpret a partogram and formulate plan based on pattern observed. Be able to define findings on vaginal examination accurately and communicate these in written form.
	Abnormal labor and dystochia L1,L2	Be able to manage delay in lobar and to use syntocinon appropriately Appreciate the limitation of augmentation with oxytocin and appropriate timing of alternative management strategies.
	Partogram and Assessment of fetal well-being in labour Mal presentation L1,2	Know the risk factors for fetal compromise, how they can be recognized either antenatally or in early lobar. Be confident to interpret CTG specially for those babies need immediate delivery. Be aware of different technique available of assessing fetal well-being in lobar. Be familiar with the different type of mal presentation Knowledge about management of each type present in emergency situation Risk and complication of these mal presentation

	Breech presentation L1,L2	Be proficient in vaginal breech delivery Knowledge the relative risks and benefit of breech delivery. Revise your knowledge of the process of parturition with breech delivery.
	Mal position L1,L1	To know the way to diagnose mal position The way of management The accurate time of intervention and choosing appropriate management.
	Partogram and Assessment of fetal well-being in labour Cord prolapsed and cord presentation	Know the risk factors for fetal compromise, how they can be recognized either antenatally or in early lobar. Be confident to interpret CTG specially for those babies need immediate delivery. Be aware of different technique available of assessing fetal well-being in lobar. Knowledge about the life threaten emergency endanger the fetus The correct way to handle such emergency
	Abnormal third stage of labour& Complication of the Third stage of Labor Post Partum Hemorrhage L1,2 Oligo .& Polyhydramnios	To know how can deal with its complication To know its underlying causes &management

	Medication in pregnancy Multifetal Pregnancy	To know the physiological changes of pregnancy that can alter the drugs pharmacokinetics To know the type &complication
	Rh-Iso immunization L1,2	. Definition of Rh-Iso immunization . . Pathophysiologyof Rh-Iso immunization . . Potential sensitizing events for Rh-disease . . Factors determined the occurrence of Rh-Isoimmunization .
	APH L1,2	Causes of APH &management
	Anemia L1,2	Type of anemia & management
	Preterm labour&PROM	Causes, clinical feacture &management
	Hypertensive disease inpregnancy L1,L2	avoidance and early detection of this common complication of pregnancy, its risk factor and what are the effects on fetal growth and maternal outcome
	Bleeding dis .in pregnancy Thromboembolic in pregnancy	How can deal this disease in pregnancy &its effect on pregnancy outcome &effect of pregnancy on it Risk factors, prevent, management
	DM L1,2	How can deal this disease in pregnancy &its effect on pregnancy outcome &effect of pregnancy on it

	IUGR	Should known the aetiology and types of the IUGR fetuses . - Should known the pathophysiology of the IUGR .
	IUD	- How can investigate them & how can manage them appropriately The first and ongoing priority in management is emotional and psychological support of the parents and family . * The second priority is to find an explanation . * The third priority is to implement an appropriate management strategy for future pregnancies .
	Thyroid disease in preg. Renal disease in pregnancy	How can deal this disease in pregnancy &its effect on pregnancy outcome &effect of pregnancy on it early detection of renal disease that are occur during pregnancy and how to modify the management of renal disease in pregnancy to improve fetal and maternal outcome
	jaundice in pregnancy Neurological disease in pregnancy	To know the causes of jaundice in pregnancy . How to differentiate between the causes . How we can manage each condition appropriately to prenatal and maternal morbidity and mortality to understand the effect of these disease and its medication on fetus and how to improve fetal and maternal outcome Types of cardiac disease. Pre –pregnancy counseling . Maternal& fetal risks. The stages of heart failure-New work heart Association (NYHA) classification High risk cardiac conditions.

	Cardiac dis. In preg. Autoimmune dis. In preg.	Antenatal management. Management during labour &in postpartum period. Management of heart failure &other specific conditions. Definition of autoimune disease . How can be dignosed during pregnancy The effect of autoimune disease on the pregnancy outcome. The effect of pregnancy on the disease' s course .
	Shock &post op.collapse .Analgisea and anesthesia in labor	Aetiology &management what types of analgesia and anesthesia available in labor, its efficacy, complication and whether effect the progress of labor or not
	Perinatal infection L1,2	Aetiology ,prevention,management
	Instrumental delivery and episiotomy L1,2	Objective : how to know the need for instrumental delivery ,its prober application and avoidance of complication and make its use mimic spontaneous vaginal delivery
	Induction of labour C/S	Causes ,methods ,complication Indication ,complication

	Ultrasound Premature rupture of membranes	This lecture showed the importance and uses of Ultrasound. That is used to date pregnancies and chart antenatal growth of the fetus To identify congenital abnormalities. Doppler can identify placental and fetal blood Antenatal tests of fetal well-being To discuss the clinical features ,diagnosis and management of premature rupture of membranes.
	Purperium L1,2	. This lecture discussPhysiological changes. Puerperal disorders and their management . Puerperal pyrexia. The breasts. Breast disorders and managements

Internal Medicine
Fourth stage

A. Theoretical teaching:

The total number of lectures is 150 (120 for internal medicine and 30 for behavior science) which cover the following:

1. Gastrointestinal (18 Lec.) including: mouth and pharynx, common presentations, investigations, diseases of the esophagus, gastritis, peptic ulcer diseases, upper GIT bleeding, malabsorption, diarrhea, inflammatory bowel diseases, gastric tumors, colonic tumors, lower GIT bleeding, irritable bowel syndrome
2. Liver and hepatology (12 Lec.) including: introductions, investigations, common presentations, Jaundice, hepatitis, liver cirrhosis, hepatic encephalopathy, diseases of the gall bladder, diseases of the pancreas.
3. Endocrine and diabetes mellitus (30 Lec.)

Diabetes mellitus, Diagnosis, Types, Risky group, prevalence and prevention, Clinical presentation, aim of treatment, treatment, Oral hypoglycemic agents, Insulin preparation ,problems associated with insulin injection, Hypoglycemia, Treatment and prevention of Hypoglycemia,

Diabetic keto acidosis Hyperosmolar non-ketotic coma-Lactic acidosis, Diabetic complication ,Retinopathy, eye disease, blindness ,peripheral neuropathy, diabetic foot, Diabetic nephropathy, Cardiovascular disease in Diabetic patient lipid and Diabetes mellitus, Metabolic disease: Disorder of lipid metabolism, Presentation of hypothalamic and pituitary disease and out lines of their treatment, Hypopituitarism

Acromegally and giganism, Hypothyroidism, Hyperthyroidism, Goiter, Thyroid eye disease, thyroid cancer, thyroid special condition, Parathyroid gland ,calcium metabolism and serum calcium abnormality, Thirst axis and Diabetes insipidus, Adrenal gland and its investigations, Addison's disease, Cushing's Syndrome, Glucocorticoid (drugs uses and its side effect), Endocrinology of blood pressure control, Multiple endocrine neoplasia

4. Cardiovascular (30 Lec.) including: introductions, common presentations, investigations, chest pain, arrhythmias, heart failure, ischemic heart diseases, valvular heart diseases, rheumatic fever, diseases of the myocardium, cardiomyopathies, diseases of the pericardium, infective endocarditis, hypertension, diseases of the aorta, tumors of the heart.

5. Respiratory system (18 Lec.)

Anatomy, physiology of respiratory diseases, Clinical features of respiratory systems, Bronchial asthma, Chronic obstructive pulmonary disease, Brochioectasis, Upper respiratory tract infection, Pneumonia, Tuberculosis, Bronchial tumors. Disease of pleura , diaphragm and chest wall, Pulmonary vascular disease , Interstitial lung disease, Disease of pleura ,diaphragm and chest wall.

6. Bacterial infections (12 Lec.) including: introductions, investigations, classifications, streptococcal infection, infection caused by Staphylococci, Toxic shock syndrome, tetanus, clostridia infections, tetanus, leptospirosis, listeria monocytogen infections enteric fever, Brucellosis, gram negative infections, gonococci, Syphilis , leprosy

Behavior science
Fourth stage

Theory: 30 hours/year
Practical: no practical hours

Units: two units annually
Teaching methods(overview):theoretical large group lectures
Objectives:to introduce behavioral sciences and basics of behavioral medicine to medical students
Assessment:written examinations and short quizzes
Text books approved: 1-Text book of behavioral sciences2-Kaplan's text book of behavioral science and psychiatry

Week no.	Lecture title	objective
1	personality	Defining the concept of personality and approaches to it
2	Psychoanalytic view Of personality	How variable components of personality is developed And psychosexual development
3	perception	Definition,sense organs,consistency and down top processing
4	Social psychology	Introduce students to the fundamentals and concepts of social psychology
5	attitudes	Definition,function and formation
6	emotion	Definition,theory and clinical implications
7	thinking	Types ,creative thinking,concret thinking,neurological net work
8	memory	Definition ,classification,biological basis
9	Basic motives	Classification,definition,satisfaction and basic needs
10	Human development	Stages,approaches and tasks
11	Neuropsychiatric tests	Background,types,application and clinical uses
12	Patient doctor relation	Theories,types,implications
13	Communication skills	Basis,types and implications
14	Normality concept	Definition,types,statistics

15	Sick role and illness behavior	Background,components,clinical implication
16	neurochemistry	Receptors,neurotransmitters,synapsis
17	catecholamines	Dopamine,adrenaline,metabolism,pathways,functions,dysfunctions
18	Serotonine,Acetylcholine	Distribution,metabolism,function and dysfunction
19	neuropeptides	Synthesis,receptors,behavioral role
20	neuroanatomy	Basic organization,prefrontal cortex,limbic system,thamus,brain stem
21	neurophysiology	EEG,VEP,biofeed back,
22	Psychoanalytic theory	Basic terms,Ego,Id,Superego,structural model,psychoanalysis
23	Learning theory	Assumptions, trail and error,reinforcement,punishment,reward
24	Cognitive behavioral theory	Modeling,learning by observation
25	Evalution of mental disorders	Neuroimaging,biochemical evalution
26	Genetics of behavior	Introduction,family studies,twin studies,genetics of common mental disorsdrs
27	Sleep	Physiology,biology,REM,non-REM,sleep hygiene
28	psychopharmacology	Principles,antipsychotics,antidepressants,mood stabilizing agents
29	intelligence	Definition,types,IQ
30	Human sexuality	Development,biological correlates,phases

Surgery

Fourth year

I- Urology (24 hours)

II- General surgery(66 hours)

1-Hernias (3hrs)
2-Breast surgery (3hrs)
3-Thyroid surgery (4 hrs)
4-Biliary surgery(4hrs)

5-bowel surgery (8hrs)
6-Appendix (3 hrs)
7-Anorectal surgery (6 hrs)
8 -Diabetic foot (1 hr)
9–Trauma (blunt and penetrating)& ATLS (3 hrs)
10-Tongue mass & ulcer (1hr)
11-oesophageal surgery (4 hrs)
12-Gasteric surgery(4 hrs)
13-Pancreas(3 hrs)
14-Spleen (2 hrs)
15-liver surgery (3 hrs)
16-Peritonium (2 hrs)
17-Head & neck surgery (6 hrs)
18-hand infection (1 hr)
19-Cervical LAPs (2 hrs)
20-Salivery glands (3hrs)

Fifth Stage

Subject			Didactic Hours		No. of weeks (clinical training)	No. * of units
			Theoretical	Clinical		
1	Surgery**		45	60		5
	A	General surgery	-	10	2	1
	B	Urosurgery				
	C	Neurosurgery	5	10	2	-
	D	Cardiovascular surgery	10	10	2	-
	E	Anesthesiology	8	10	2	-
	F	Plastic surgery	5	10	-	-
	G	Pediatric surgery	4	-	2	-
	H	War surgery	3	-	-	-
	I	Orthopedics	10	10	3	4
2	Medicine		60	75		7
	A	Hematology	20	10		1
	B	Neurology	20	30	2	-
	C	Respiratory	15	30	2	-
	D	Rehabilitation	5	5	-	5
	E	Geriatrics	8	-	-	1
3	Psychiatry		60	30	3	5
4	Dermatology		30	30	3	3
5	Ophthalmology		30	30	3	3
6	ENT		30	30	3	3
7	Pediatrics		60	60	2	6
8	Gynecology		60	60	3	6
9	Radiology		30	30	3	3
Total			450	420	-	44

*** The units of practical/clinical hours for fifth stage is calculated by dividing the No. of practical hours on 22.5.**

**** The total No. of unit of Surgical branches= 11**

unit of Ophthalmology branches= 3

unit of E.N.T branches= 3

المقررات الدراسية للنظام السنوي للمرحلة الخامسة

أصناف المواد الدراسية	المادة	الساعات		الوحدات
		عملي	نظري	
العلوم السريرية	الاشعة	30	30	3
	كسور	30	30	3
	نفسية	30	60	5
	جلدية	30	30	3
	ENT	30	30	3
	عيون	30	30	3
	طب باطني	60	75	7
	جراحة	60	45	5
	النسائية و التوليد	60	60	6
	أطفال	60	60	6
مجموع الوحدات الدراسية		420	450	44

Paediatrics

Fifth year

Week no.	Lecture title	Objective
1	Introduction to neonate	How you deal with neonate
	Birth asphyxia &meconium aspiration	Types ofasphyxia.management .risk of meconium aspiration and outcome
2	RDS & apnea	Risk of RDS .management ,types of apnea &management &prognosis
	Neonatal jaundice	Types &risk with management of NNJ

3	Hemolytic disease of newborn &treatment of jaundice	Risk of ABO &Rh ,treatment &outcome
	Birth injuries	Types ,management &outcome
4	Pre&post maturity ,IUGR	Definition ,management &prognosis
	Neonatal sepsis &seizure	Types &sequel &management
5	Infant of DM mother &hypoglycemia	Complication &management
	N.anemia and polycythemia	Management & outcome
6	Introduction to renal disease	Renal physiology.investigation ,congenital anomalies
	Pediatric nephrosis	Definition ,criteria of DX.treatment .outcome
7	AGN(nephritis)	Etiology .treatment .prognosis
	UTI in children	Risk factors.presentation.follow up
8	Hemolytic ureamic syndrome	Pathogenesis.presentation.bad prognosis
	Acute renal failure	Types .treatment .prognosis
9	Chronic renal disease	Pathogenesis presentation ,out come
	Ped. Infectious diseases ,viral ,bacterial &parasitic(introduction)	How to deal with infectious diseases
10	IMN, hepatitis A	Presentation &management
	Typhoid fever &brucellosis	Pathogenesis,presentation,management.complication
11	Tuberculosis	Pathogenesis ,presentation ,DX &treatment
	v. cholera	Presentation ,complication & treatment
12	Giardia &E.histolytica	DX.treatment .complication &prevention
	Kala azar &enterobiasis	Presentation .complication &treatment
13	Cardiac disease	Evaluation of cardiac dis.investigation

	CHD (ASD.VSD.PDA.AS)	Evaluation of different acyanotic CHD with management
14	Heart failure	Pathophysiology ,presentation and management
	Cyanotic CHD (TOF.TGA.truncus arteriosus)	Pathophysiology ,presentation .natural history of disease
15	Rheumatic fever	Criteria of diagnosis ,complication &long term prophylaxis
	Introduction to hematooncology in pediatrics	Evalution of blood disease ,investigation
16	Iron deficiency anemia	Etiology ,staging ,management
	Hemolytic anemia(Hb,pathies spherocytosis&G6PD)	Etiology ,inheritance of hemoglobinopathies SCA,thalassemia ,outcome and sequel
17	Coagulation disorder (factors VIII,IX. VWD)	Evaluation .investigation ,complication and outcome)
	ITP	Pathogenesis, presentation, and treatment modalities
18	Leukemia and lymphomas in children	Presentation .diagnosis and treatment modalities of cytotoxic drugs
	Introduction to respiratory system	Remind the candidate about anatomy and embryology of res .system
19	FB& vascular ring	Presentation and urgent management
	URTI (crop &epiglottitis)	Presentation .DX and management
20	Lower respiratory tract disease(pneumonia ,bronchiolitis ,hydrocarbon ,bronchiectasis &lung abscess)	
	Near drawing	Urgent evaluation

21	Bronchial asthma ,CF,alph 1 antitrypsine deficiency ,	Pathophysiology ,classification ,management ,education and long term treatment
	Pneumothorax and respiratory failure	Urgent treatment .evaluation of respiratory failure and long term therapy
22	Introduction to GIT disease (anatomy and embryology)GEARD &achalasia	Evaluation and common investigation) Treatment of achalasia and GEARD
	Disease of stomach(infantile pyloric stenosis &peptic ulcer)	Presentation and management policy
23	Malabsorption (celiac disease .constipation ,encoporesis &Hirschsprung disease)	Evaluation ,education and treatment modalities
	Inflammatory bowel disease (crohn disease &ulcerative colitis)	Pathogenesis , presentation and treatment short and long term .
24	Poisoning (general principle)	General evaluation and measures for all poisoning materials
	Some specific types of poisoning (iron ,paracetol,atropine ,OPP,opoied ,,,,etc)	Common presentation ,urgent measures and specific antidotes .
25	Rheumotological diseases(introduction for rheumatolgical disease I general)	General evaluation and investigation
	SLE &JRA	Criteria of diagnosis ,treatment modalities
26	Endocrine (introduction)with adrenal gland ,physiology of puberty disorder {CAH}	General approach .investigation and treatment
	Thyroid disorder	Investigation of hypo & hyperthyroidism including treatment

27	Type 1 DM &DI	
	CNS (introduction)	Investigation of CNS disease
28	Epileptic disorders	Presentation of different types of epilepsies ,treatment and long term follow up
	Cerebral palsy	Types ,treatment ,sequel
29	Infection of CNS (meningitis &encephalitis)	Common presentation and treatment and later complication
	Medical genetics (introduction & types of family pedigree	Common investigation of genetic disorder
30	Common genetic disorders(trisomy 21,13,18, turner ,klinfilter)	Common presentation of these common diseases ,investigation ,and associated complications
	Evaluation &revision of some lectures and pre exam instructions	Candidates guidance and pre exam evaluation and assessment

Gynecology 5th stage

Theory : 60 hr/year

Units : 6

Objective: to learn the basic &the physiology of gynecology &how can deal with the pathological disorders .

Assessment: a quarterly exam (10 marks).mid year exam (30 marks),final exam. (60 marks)

Text book approved: Ten teachers of gyn.

Week	The 4th years lectures	Objective

1 2	emberology and anatomy of female genital tract Intersex L1.2	**to understand the genital tract from external to internal and this is considering as the base line for understanding gynecological pathology and its subsequent management** **for early diagnosis and trying to improve outcome regarding feasibility of inducing pubertal changes, marriage and pregnancy**
3	Cong. Abnormalities of genital tract L1,L2	**Understand the classification of Mullerian anomalies. Know about the first line investigations for Mullerian anomalies and treatment available.**
4	Puberty physiology Puberty disorders	**Understanding the normal changes in puberty genital tract during** **Delayed & early puberty**
5	Menstrual cycle L1,2	**It is important to have an understanding of the physiology of the normal menstrual cycle to understand the causes of any abnormalities , and also to tackle problems , such as infertility and the prevention of unwanted pregnancy . This lecture aims to describe the mechanisms involved in the normal menstrual cycle , with emphasis on the clinical relevance of each phase .**
6	Dysfunctional uterine bleeding and heavy menstrual loss Primary amenorrhea	**to confirm this bleeding is really abnormal and to learn what are the measures to reduce blood loss and treating under lying pathology** **causes ,management**
7	Secondary amenorrhea PCOS syndrome	**causes ,management**
8	Miscarriage L1,2 Ectopic pregnancy	**How can differentiate the miscarriage from other early pregnancy complications .** **Aetiological factors.** **Pathological-Anatomy.** **Clinical varieties of miscarriage &their management** **The lecture discuss the definition ,risk factors, diagnosis and lines of management of ectopic pregnancy**
9	Gestationl trophoblastic disorders L1,2	**Understand the pathogenesis.** **Have good knowledge of gynecological diagnosis and management.**

		Have an appreciation of the need for monitoring and medical intervention
10	Persistence Gestationl trophoblastic disorders L1,2	**Be able to counsel woman with Gestationl trophoblastic disorders** **Be able to recognize the clinical features of Persistence Gestationl trophoblastic disorders.** **Know the different modalities of treatment which available.**
11	Fertility control L1,2	**Type of contraceptive &how can use ,advantage &disadvantage**
12	Lower genital tract infection L1,2	**Revise the cause of pelvic pain.** **Understand the pathological course of sexually transmitted infections (STIs).** **Understand how to investigate and manage(STIs) when encountered in the gynecological setting.**
13	Upper genital tract infection pelvic inflammatory diseases(PID). Chronic pelvic pain	**Revise the cause of pelvic pain.** **Know the evidence for diagnosing , treating and following up pelvic inflammatory diseases(PID).** **Know which infections of genital tract are transmitted sexually.** **Know the etiology of Chronic pelvic pain.** **Know the different strategies of management of Chronic pelvic pain**
14	Subfertility L1,2	**This lecture explain the definition ,types, causes, investigations and lines of treatments for both male and female infertility**
15	Assisted reproductive technology Menopause L1	**The lecture discuss definitions and types of assisted reproductive technology .Ovarian stimulation and follow up of patient** **The menopausal consultation.** **Management options.** **Risks & benefits of each option.** **Practical considerations for prescribing HRT.** **New developments.**
16	Menopause L2 Post menopausal bleeding	**The menopausal consultation.** **Management options.** **Risks & benefits of each option.** **Practical considerations for prescribing HRT.** **New developments.** **The definition of the menopausal bleeding (PMB) .** **Underlying aetiology .** **Its management (History ,examination ,investigations ,treatment**

17	Pelvic organs prolapsed L1,2	**The aetiology, presentation,diagnosis**
18	Pelvic organs prolapsed L3 Primary and Secondary dysmenorrhea	**Management &prevention to exclude underlying pathology, how to reassure the patient, reduce the pain and improve the quality of life**
19	Premenstrual tension syndrome Benign disease of uterus	**Know the definition of PMS.** **Know the prevalence of PMS.** **Understand the assessment used in PMS.** **Be aware of alternative therapies.** **Know the non hormonal approaches to management.** **Know the hormonal approaches to management** **Types, presentstion ,management**
20	Endometriosis adenomyosis	**Understand the pathogenesis and clinical presentation of endometrosis.** **Know the principal medical therapies used in endometriosis associated pain.** **Know the surgical principles underlying the conservative and medical approaches to endometriosis surgery.** **Be able to recognize the histological appearance of adenomyosis.** **Be aware of clinical features and epidemiology.** **Know the diagnostic techniques.** **Understand the principles of medical and surgical treatment**
21	Endometrial cancer L1,2	**Revise your knowledge of pelvic anatomy.** **Understand the epidemiology and etiology of endometrial cancer.** **Understand the principles of carcinogenesis and pathology.** **Be able to describe the diagnostic and staging techniques of endometrial cancer.** **Be able to describe the management of early and advanced, recurrent disease.**
22	Pre malignant dis. Of cervix L,2	**Types ,grades ,screening, treatment**
23	malignant dis. Of cervix L,2	**Risk factors ,presentation, management**

24	Benign dis.of overy L1,2	**Classification&management**
25	Malignant dis.of overy L1,2	**grades ,screening,staging, treatment**
26	Benign dis.of vulva L1,2	**Types, presentation, management**
27	Malignant dis.of vulva HRT L1	**grades , ,staging, treatment presentatio** **The aim of sex hormone therapy. (types ,indications, routes, side effects).**
28	HRT L2 Hirsutism and virilizatio	**The aim of sex hormone therapy. (types ,indications, routes, side effects).** **to assess the etiology of the condition and correlate its severity with underlying causes and varies hormonal level**
29	5.Urogynaecology L1,2	**Objective: common presentation to gynecology so we have to know how to reach to underlying pathology and differentiate different types of incontinence &management**
30	Endoscopy in gynecology	**to learn the safe practice of endoscopic surgery**

Internal Medicine
Fifth year

A. Theoretical teaching:

The total number of lectures is 180 which cover the following:

1. Central nervous system (30 Lec.) including: introductions, investigations, common signs and symptoms, headache, migraine, epilepsy, cerebrovascular accident, multiple sclerosis, motor neuron diseases, neuromuscular disorders, myopathies, peripheral neuropathy, extrapyramidal systems diseases, Parkinson disease, involuntary movement, cerebellar diseases,meningitis, encephalitis, brain tumors, comma.
2. Nephrology (15 Lec.) including, introductions, signs and symptoms, investigations, renal biopsy, glomerular disorders, glomerulonephritis, Nephrotic syndrome, urinary abnormalities, interstitial nephropathy, urinary tract infections, cystic kidney diseases, renal tumors, Acute renal failure, prerenal, acute tubular necrosis, post renal failure, chronic renal failure, renal replacement therapy, dialysis therapy, renal transplantiation.
3. Haematology (18 Lec) including: introduction, common presentations, investigations, blood film morphology, anemias, types, classifications,

clinical presentations, management, leukemia's, classifications, clinical presentations, diagnosis, management, lymphoma, myeloprolifrative disorders, multiple myeloma, platelet disorders, bleeding tendencies, coagulation disorders,

4. Viral infections (12 lec.) including: introduction, classification, investigations, Mumps, Herpes simplex infections, Herpes zoster, Infectious mononucleosis, cytomegalo virus infection, Rabies, HIV infections, AIDS.

5. Geriatric medicine (8 Lec.): introduction, terminology, normal physiological changes, aging, common clinical problems, investigations, special care, polypharmacy, frequent falls, postural hypotension, acute confusion, drippling,

6. Toxicology (8 Lec.): introduction, general presentations, general principles of management, paracetamol intoxications, digoxin toxicity, aspirin toxicity, organophosphorus intoxications, opiate over use, kerosene poisoning, snake bite

7. Clinical Pharmacology (14 Lec.); introduction, basic information, drug prescriptions, drug dosage, drug interactions, special situations ((pregnancy, renal failure, hepatic insufficiency)) , corticosteroid therapy, immunosuppressant,

Surgery

Fifth year

A) Surgical subspecialities

1-Thoracic surgery (5 hrs)
3- Cardiovascular surgery (5hrs)
4-Neurosurgery (6 hrs)
5-Anasthesia (6 hrs)
6-Maxillofacial surgery(3hrs)
7-plastic surgery (5 hrs)
8-Peadiatric surgery (5hrs)
9- War surgery (5hrs)

Dermatology & venereology

Overview:

The unit of dermatology teaches medical students in their fifth year of our college, the program extends through the whole year, focusing on the common & important skin diseases in our country.

Objective: The whole curriculum is designed so that students should be able to gain the following aims by the end of the course:

1. Accurately describe skin lesions including morphology, configuration and distribution.
2. Recognize the clinical manifestations of common dermatologic conditions.
3. Demonstrate familiarity with common diagnostic procedures.
4. Identify 1st and 2nd lines of treatment for common dermatologic conditions.
5. Demonstrate understanding of basic epidemiology and risk factors for malignant and benign common skin conditions.
6. Emphasize on distributing better health standards in our society by appraising the importance of infections & infestations that prevail in our community.
7. Gaining the ability to identify common sexually transmitted diseases & the measures taken to prevent them.

The teaching staff:

1-Assist Prof Dr. Hadaf Abdulamir

2-Dr. Kadhem A. Kadhem

3-Dr. Alaa A. Naif

4-Dr. Ahmed A. Kawen

units: three units annually

hours: 30 theory

30 practical

Methods of teaching:

1-large group; in the lecture room for all students as theoretical lectures one hour weekly, supported by data show & relevant photos.

2- small group: in the consulting clinic, daily two-hour clinical sessions, where students are divided into small groups of around 10, they are shown the common skin diseases, encouraged to take history, examine the patients & even attend minor surgical procedures done in the unit.

Assessment:

Examination at the end of course	Midyear examination	Quiz & daily activity	Final examination
20%	25%	5%	50%

References:

Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology.

Time table of lectures: for large group teaching

Week no.	Lecture title	Objective
1st week	Anatomy of the skin	Prepare the student to deal with skin layers & be ready to study the skin diseases
2nd week	Diagnosis of skin diseases	To teach him how skin diseases can present and the best ways to reach a correct diagnosis of a skin disease,
3rd week	Dermatosis resulting from physical factors	enables the student to identify the effects of environmental factors on the skin, the risks & hazards of the environment & the proper methods of protection from them
4th week	Skin in systemic diseases	to identify the skin manifestations of the common systemic diseases
5th week	Papulosquamous disorder	throws light on the most common scaling dermatoses which allows the student to recognize them from other diseases.
6th week	psoriasis	the student should be able to be familiar with this relatively common condition in our country
7th week	Acne vulgaris	To help the student understand how acne develops, how can we prevent acne induced by drugs & cosmetics, to effectively treat acne & reduce the disfiguring permanent scarring.
8th week	Genodermatosis	Th to enable the student recognizing the common ccccongenital skin diseases & help educating patients & their families about their prevention
9th week	Bacterial infections	lecture the student should be able to diagnose the common bacterial infections, their method of diagnosis & treatment, together with their prevention.
10th week	Mycobacterial infections	these rare; but still present in our country, by this lecture the student would be familiar with their main feature manifestations, the proper investigations for diagn diagnosis & the best regimens of treatment.
11th week	Viral infections	students should know: Classification, clinical presentations, complications and management of common viral infections.

12th week	Parasitic infections	the students should know the Cause, lifecycle, clinical features and treatment outlines and options of common parasitic infestation like scabies, leshmanaisis and pediculosis.
13th and 14th week	Eczema and dermatitis	students should know: Definition and classification of dermatitis, general clinical features in all types of eczema and Common complications and general treatment outlines of dermatitis.
15th week	Autoimmune bullous diseases	students should know the Classification, level of separation, and responsible antigen(s) of the major autoimmune bullous skin diseases
16th and 17 week	Hair problems	students should know the Types of hair and phases of hair cycle and Causes and clinical presentations of scarring and non-scarring alopecia.
18th week	Diseases of nail	students should know the Components of the nail unit and common nail disorder
19th week	Yeast infections	To make the student able to make a diagnosis of yeast infections by knowing the distinguishing features of each one
20th week	Fungal dermatophytosis	To enable the students to list the dermatophyte infection In differential diagnosis of annular lesions
21 th week	Connective tissue diseases	To make the student familial with a such diseases and how to deal with it and differentiated from other problems
22 th week	Urticaria	To make the students familiar with clinical features of urticaria 2.To enable the students recognize the warning features of life-threatening urticaria
23th week	Disorders of pigmentation	1.To make the students aware of common causes of hyper and hypopigmentation that he/she might encounter during his career 2.To teach the students how to make a diagnosis of vitiligo or at least suspect the vitiligo in appropriate clinical setting
24th & 25th week	Skin tumors	1. To make the students familiar with the common malignant skin tumors and their prognosis and behavior 2. To make the student suspect a skin lesion as a malignant skin tumor in appropriate clinical setting and consequently referring the patients with a suspected malignant skin tumors to the dermatologists
26th & 27th week	Sexually transmitted infections	1-To shed light on this common, preventable and serious diseases specially in this age group of student.

		2-To teach him for advising our people in locality after graduation.
28th week	Genital ulcer	1-To shed light on this common, preventable and serious diseases specially in this age group of students. 2-To teach him for advising our people in locality after graduation.
29th week	Mouth & mucous membrane diseases	The most important diseases involving the oral cavity, lips & anogenital region
30th week	Drug eruptions	The mechanism of drug rash & specific patterns like FDE

Time table for clinical small group teaching:

day	Teaching staff
Sunday	Dr. Kadhem
Monday	Dr. Hadaf
Tuesday	Dr. Alaa
Wednesday	Dr. Ahmed
Thursday	Alternating between the teaching staff

Psychiatry (30 Lec.)

Theory: 30 hours/year
Practical: 30 practical hours
Units: three units annually
Teaching methods(overview):theoretical large group lectures,clinical small group teaching
Objectives:to introduce psychiatry,dignosing and managing the common psychiatric disorders, doing mental state examination and learning the interviewing tecniques
Assessment:written examinations , short quizzes,clinical examination and oral exam
Text books approved: 1-Kaplan's text book of behavioral science and psychiatry2-Davidson's principals of internal medicine

Week no.	Lecture title	objective
1	Classiffication and history	Definition of mental health,psychosis,neurosis,DSM-V,ICD-10

2	Acute confusional state	Definition,clinical features,causes,epidemiology,management,prognosis,minimental state examination
3	Mood disorders	Definition,classification,bipolar and unipolar ,dysthymia
4	Depreesion mania	Clinical features,epidemiology,etiology
5	Treatment of mood disorders	Antideprassants,SSRI,TCA,ECT,mood stabilizers
6	Anxiety disorders	Overview,classification,generalzed anxiety ,panic,clinical features,management
7	Panic disorder,phobias ,obsessive compulsive disoder	Definition,classification,clinical presentation,management
8	Schizophrenia and psychotic disorders	Definition ,classification,epidemiology,etiology
9	Schizophrenia and psychotic disorders	Clinical features,Schniderian's first rank symptoms,differential diagnosis
10	Schizophrenia and psychotic disorders	Treatment,prognosis,family and patient education
11	Somatiform disorder	Background,definition,classification,epidemiology,common features,somatization disorder
12	Somatiform disorders	Hypochondriasis,conversion,clinical presentation,management
13	Impulse control disorders	Classification,definition,clinical presentation,management
14	Factitious disorders	Definition,types,statistics,by proxy,management
15	Sexual disorders	Background,types,causes,management
16	signs and symptoms of mental disorders	Studying of normal and psychopathology of psychiatry
17	disorders of stream of thoughts	-Studying of content of thoughts disorder like delusion (classification according to theme, being primary or secondary, formal thought disorder like (preservation, flightening of thought , echolalia)).
18	Reaction to a stressful experiences	-It shows response of human being for major events life according to its duration severity, in edition adjustment disorder , PTSD, acute stress reaction.

19	Dissociative disorders	-Lecture expose for isolation of part or all of the consciousness leading to automatic behavior graduated from depersonalization to multiple personality disorder.
20	Causes of catatonic stupor	-Stupor characterize rigidity of body muscle plus intact consciousness like psychotic Catatonia, depressive Catatonia, historical Catatonia
21	suicide	-Intentional due to either mental disease like depression or multiple social pressure. It has multiple risk factors like social pressure, family disharmony, genetic cause.
22	dementia	-Iparement of memory most common type are Alzheimer second multi infracted, Alzheimer and others types.
23	Sleep disorders	Lecture expose for different disturbance of sleep cyclic rhythm, early morning wakenss.
24	Eating disorders	This is the modernize eating disturbance either A.N. which characterize by severe deprivation, repeating vomiting, using of laxatives. Either eating disorder like binj
25	Child psychiatry	-Group of mental and behavioral disorder starting since early life of age and gradually regress like ADHD,PDVD, Nocturnal enuresis, thumb sucking, tick disorder, ETC.
26	Attention deficit hyperactivity disorder	Its clinical features subdivided into A-attention deficient B-over activity C-combine type D-impulsive type.
27	Substance related disorders	-Subject expose for different group of psychoactive agent like first- Diazepam second- SNS depressant Third CNS stimulant fourth Hallucinogen drugs, Hashish, Opiate drug.
28	Bereavement	-It is sadness feelings for loss a loved one characterize by man stages like first denial stage second anger stage third …. Fourth accepting stage. Grief may deviate into prolong, inhabited grief
29	Suicide prevention	Methods used to prevent suicide
30	Psychiatry in primary care	Epidemiology,identification,mangement

Orthopedics(30 hrs)

Theory : 60 hours / year
Practical : 30 hours / year
Units : 3 units annually

Teaching method (overview) : lecture method , with interactive teaching way.

Objective : Make the student aware of common and important orthopedic and trauma conditions , enabling them to make a proper plan for management and prevetion of complicaitons.

Assessment :

Textbook approved : Apply's textbook of orthopedics

Week no.	Lecture title	Objective
1	Basic sciences:	Brief revision of musculoskeletal anatomy , histology and physiology Understanding fracture healing .
2	Introduction to fractures	Clarification of the general principles of fracture classification , description and assessment.
3	Management of fractures	Training the students how to deal with multitrauma patients. Understanding the general AO prenciples of fracture management. Classification and management of open fractuers. Understanding the various methods of fracture management.
4	Complications of fractures	Understanding the systemic approach to the complications of fractures.

		Training the students about the prevention and the early detection of complications and its management.
5	Hip Dislocation & Femur neck Fractures:	Stressing the importance of hip fractures as their high mortality and morbidity. Understanding the basic methods of management hip fractures.
6	Inter & subtrochanteric fractures	Stressing the importance of hip fractures as their high mortality and morbidity. Understanding the basic methods of management hip fractures.
7	Supracondylar tibial plateau & patellar fractures	Understanding and developing basic skills to diagnose injuries around the knee and providing the early supportive measures , definitive treatment and rehabilitation programs.
8	Patellar Dislocation, Knee Dislocation and tibial shaft fracture	Stressing the significance of knee dislocation as a serious limb threatening condition. Understanding the general outlines of management of tibial shaft fractures including identification and treatment of open fractures.
9	Ankle injuries	Stressing the importance of ankle injuries as being the most common lower limb injuries. Focusing on general prenciples of assessment and treatment.
10	Foot injuries	Training the students to acquire the basic skills of managing foot injuries including diagnosis , management and prevention of complications.

11	Injuries of spine	Understanding the basic principles of classifying spine injuries as being the key for proper management. Focusing on associated neurological injuries.
12	Shoulder and upper arm injuries	Stressing the significance of determining the plan of management of shoulder and upper arm injuries. Understanding the indications for surgical and non surgical treatments
13	Elbow and forearm injuries.	Developing basic skills to diagnose injuries around the elbow and providing the early supportive measures, and planning for definitive treatment.
14	Wrist and hand injuries	Stressing the importance of wrist injuries as being a common injuries with significant morbidity. Understanding the surgical and non surgical treatments with indications of each.
15	osteoarthrosis	Stressing the importance of studying osteoarthrosis as being the most common type of joint disease. Training the students to be familiar with the XR features of osteoarthrosis. General outlines of management.
16	Introduction and benign bone tumours	Stressing the importance of the bone tumours radiographic description and diagnosis. Emphasizing the general outlines of treatment including the medical and surgical lines.
17	Malignant bone tumours	Stressing the importance of the bone tumours radiographic description and diagnosis.

		Emphasizing the general outlines of treatment strategies .
18	Disorders of spine 1	Emphasizing the importance of spine disorders as being a common source of morbidity. Training the students to acquire the basic skills for radiological diagnosis of spine disorders. General outlines of management including the medical and surgical options.
19	Disorders of spine 2	Emphasizing the importance of spine disorders as being a common source of morbidity. Training the students to acquire the basic skills for radiological diagnosis of spine disorders. General outlines of management including the medical and surgical options.
20	Disorders of hip 1	Training the students to acquire the basic skills of XR interpretation in case of hip disorders. Training the students to run proper clinical examination of the hip. Emphasizing the general outlines of management of hip disorders
21	Disorders of hip 2	Training the students to acquire the basic skills of XR interpretation in case of hip disorders. Training the students to run proper clinical examination of the hip.

		Emphasizing the general outlines of management of hip disorders
21	Disorders of the knee	Training the students to acquire the basic skills of proper clinical examination of the knee disorders. General outlines of management including the medical and surgical options.
22	Disorders of ankle and foot 1	Stressing the significance of foot and ankle disorders as being a common cause for morbidity. Training the students to develop the skills of the XR interpretation. General outlines of management including the medical and surgical options.
23	Disorders of ankle and foot 2	Stressing the significance of foot and ankle disorders as being a common cause for morbidity. Training the students to develop the skills of the XR interpretation. General outlines of management including the medical and surgical options.
24	Skeletal dysplasias	Give a general understanding of common dysplastic skeletal disorders , their clinical features and management.
25	Low back pain	Stressing the importance of the subject of back pain as being a common source of morbidity . Drawing the attention to the dangerous causes(malignancy & infection).

		Training the students to acquire the basic skills of proper clinical examination and management of common back problems.

Ophthalmology (30 hrs)

Theory : 30 hours /years
Practical : 30 hours /years
Units : 3 units annually
Teaching methods: large group teacher based theory lectures with small group teaching practical clinical sessions

Objective:

The general objectives of the department are to teach medical students sufficient ophthalmology to enable recognition of common eye complaints and their etiology as well as recognition of less common but life or sight threatening emergencies presenting as eye findings. The student should be able to take the appropriate action to safeguard the patient's life, vision and overall function.

Given a presenting eye sign or symptom the student shall be able to:

- Take an accurate History
- Perform an appropriate Physical examination including use of the Slit Lamp and Ophthalmoscope
- Be able to differentiate normal from abnormal eye findings
- Outline a logical program of investigation and possible management

Assessment:

mid year and final year theory examination through multiple choice questions and short assay questions.

Practical examination through OSCE, short cases examination and oral face to face questions.

Text books approved : Kanski's Clinical Ophthalmology

Lecture no.	Title	Objectives
1	Introduction	Introduction for the ophthalmology, anatomy, physiology and functions of the eye in addition to the protective mechanisms of the eyes.
2	Ocular examination techniques	Details of clinical ocular examination with different types of instruments used for evaluation of ocular abnormalities including visual acuity tests, fundus examination techniques, retinal function tests and electrophysiological tests.
3	The eye lid	Anatomy, function, congenital anomalies and the diseases of the eye lid (blepharitis, inflammation of the glands of the lid, disorders of eyelashes, malpostion of the eyelid) with their clinical evaluation and treatments .
4	The lacrimal system	Anatomy of the lacrimal system, Precorneal tear film secretion and function, watery eye, Epiphora, dacryocystitis
5	The Orbit	The anatomy of the orbit, Clinical signs of orbital diseases, Orbital infections including Preseptal cellulitis, Bacterial orbital cellulitis, Rhino-orbital mucormycosis.
6	The Orbit	Orbital inflammatory diseases (types, clinical features, and managments) , Thyroid eye diseases (pathogenesis, clinical manifestations and managements).
7	The conjunctiva	Anatomy, Histology, function, Clinical features of conjunctival inflammation, Bacterial conjunctivitis, Adult chlamydial conjunctivitis.
8	The conjunctiva	Trachoma, ophthalmia neonatorum, Viral conjunctivitis, Allergic conjunctivitis and conjunctival degenerations.
9	The cornea	Applied anatomy, function, Causes of corneal transperancy, Signs of corneal diseases, Microbial keratitis Bacterial Keratitis, Fungal keratitis, Acanthamoeba keratitis with their treatment.
10	The cornea	Viral keratitis, Herpes simplex keratitis, Herpes Zoster ophthalmicus, Keratoconus, clinical signs and Management of keratoconus, Keratoplasty (types, indications and complications).
11	The sclera	Anatomy, function, Episcleritis (types and treatment), Scleritis (Anatomical classification of scleritis, clinical presentations, complications and managements of each type).
12	The lens	Macroscopic and microscopic anatomy, functions of the lens, Cataract classification, Congenital cataract (Etiology, types and management), Methods of surgical removal of congenital cataract.
13	The lens	Senile cataract (types and management) Surgical techniques, Indications and timing of operation, Complications of cataract surgery, Traumatic cataract

		(etiology and management), ectopia lentis (etiology and management).
14	glaucoma	Anatomy of the anterior chamber angle, physiology of the aqueous secretion and outflow, types of glaucoma, congenital glaucoma (diagnosis and management).
15	glaucoma	Closed angle glaucoma (types, clinical presentation and management), open angle glaucoma, visual field defects in glaucoma.
16	The uvea	Anatomy, function, and the diseases of the uveal tract with their treatment.
17	The retina	Anatomy, function, retinal vascular disorders (retinal vein occlusion, retinal artery occlusion), hypertensive retinopathy.
18	The retina	Diabetic retinopathy (types, clinical picture and management), retinal detachment (types, clinical picture and management), retinal degeneration.
19	The vitreous	Anatomy, physiology, function, vitreous hemorrhage, Musca Volitans, posterior vitreous detachment.
20	The refractive errors	Types, diagnosis and management.
21	strabismus	Anatomy, physiology of extraocular muscles, Types of paralytic squint with their management.
22	strabismus	Accommodative esotropia (types, diagnosis and management), essential esotropia, intermitant exotropia.
23	neurophthalmology	Anatomy of the Visual pathway, neuro-ophthalmic manifestation of brain lesions, abnormal pupillary reactions, abnormalities of pupil size.
24	neurophthalmology	Optic nerve diseases, ocular motor nerves, reflexes, neurological diseases with ocular manifestations and their management.
25	Eye trauma	Types of ocular trauma and their management.
26	Ocular tumors	Types, clinical presentation, diagnosis and treatment.
27	Red eye	Causes, differential diagnosis, management.
28	Lasers in ophthalmology	Production of laser energy, laser modes, effects of laser energy on tissue, lasers used in ophthalmology, investigational applications of lasers in ophthalmology, laser safety.

Radiology (30 hrs)

Theory: 30 hours/year

Practical: 20 hours/year

Units: 3 units annually

Teaching methods (overview):

- Student-centered learning
- Active student interaction
- Lectures
- Site visit
- Practical

Educational Objective:

There are two types of educational objectives: general and specific. General objectives address the goals of the discipline in terms of the types of knowledge or skills students should acquire, and are not usually measurable or necessarily observable. Specific or behavioral objectives, on the other hand, are statements about the observable and measurable behaviors through which students' achievement of the desired knowledge and skills can be assessed.

The general objectives are listed below:

1. Students should know the basic principles of radiation physics, including image production, radiation protection, effects of radiation on tissues, and types and purposes of contrast materials.

2. Students should know the basic principles of ultrasound, computed tomography, MRI, nuclear medicine, and special procedures.

3. Students should be able to order radiologic examinations appropriately and judiciously.

4. Students should be able to distinguish normal from abnormal findings in selected emergencies and common conditions on plain radiographic examinations of the chest, abdomen, and head.

5. Students should be able to recognize gross abnormalities on examinations of bones, joints, and soft tissues.

6. Students should be able to interpret a radiologist's report.

7. Students should be able to use radiologic findings to narrow differential diagnoses or to develop a tentative diagnosis.

8. Students should be able to identify strengths and weaknesses of a radiology department & strength & weakness of each diagnostic modality.

9. Students should understand the role of the radiologist on the health care team and the relationship of radiology to other clinical disciplines; they should be able to use the services of a radiology department appropriately.

10. Students should appreciate the radiologist's need for adequate clinical history and a clear statement of the indications for the examinations being requested.

Examples of **specific objectives** for the first general objective include listing the organs that need protection from radiation, describing how various densities appear on plain radiographs, outlining patient preparation for various procedures, and listing side effects or dangers associated with procedures and contrast media. Similar specific objectives were written for the other general objectives.

I) Thirty hours lectures: 1 hr. /week including following topics:

Week No.	Lecture title	Objectives
Week 1	Introduction 1	Students should know the basic principles of radiation physics, including image production, radiation protection, effects of radiation on tissues, and types and purposes of contrast materials.
Week 2	Introduction 2	- Students should know the basic principles of ultrasound, computed tomography, MRI, nuclear medicine, and special procedures. - Students should be able to order radiologic examinations appropriately and judiciously.
Week 3	Respiratory system 1	students should know : - The radiological procedures used for chest pathology, their indications and

		strength and weakness of each procedure. - interpretation of normal chest radiograph including technical quality factors assessment -end of the lecture : interactive discussion of technically errors in few radiographs
Week 4	Respiratory system 2	-Start of the lecture: Short review of previous lecture. -lecture : interpretation of the abnormal chest radiograph -End of the lecture: summary of important points in the lecture.
Week 5	Respiratory system 3	- Main topics: pleura, mediastinum & diaphragm. - Students should know the emergency and common diseases e.g. Pleural effusion and pneumothorax with chest radiograph. - Students should know what is the next requested radiological procedure for details analysis of such diseases.
Week 6	Respiratory system 4	- Main topics: pulmonary collapse, pneumonia, lung abscess, pulmonary TB, hydatid disease, air way diseases, respiratory distress in newborns and pulmonary emboli and infection. - objective :to learn the students about the common radiological signs in such diseases with chest radiograph " x- ray cases review " and what to order next.
Week 7	Respiratory system 5	Min topics : Ca bronchus , metastatic lung diseases , lymphoma , chest trauma Objective : common presenting radiological signs in short , with cases radiographs review
Week 8	Cardiovascular system	- Student should know the imaging modalities used for CVS - Students should recognize cardiomegaly on chest X-ray. - Short review on common diseases e.g. pulmonary edema & heart failure.

		* end of the lecture : interactive discussion of some cases
Week 9	Plain abdomen	How to approach to normal plain abdominal film assessment How to approach to abnormal abdominal film assessment * end of the lecture : interactive discussion of emergency cases like intestinal obstruction and pneumoperitoneum
Week 10	GIT 1	Esophagus common diseases and how to radiologically approached
Week 11	GIT 2	Small intestine common diseases and how radiologically approached
Week 12	GIT 3	Large bowel common diseases and how radiologically approach
Week 13	Hepato-biliary system1	- Short review of hepato-biliary radiological investigation methods and their indications. - starting knowledge how common diseases radiologically appear.
Week 14	Hepato-biliary system2	- complementary lecture - common diseases
Week 15	Hepato-biliary system3	- complementary lecture - common diseases
Week 16	Breast imaging	Review the mammographic technique , screening mammography protocols and differentiate benign from malignant breast lesions on mammographic and ultrasound bases
Week 17	Urinary tract 1	- Review of Imaging techniques used and their indications - Common urinary tract problems: calculi and obstruction, Renal parenchymal disease.
Week 18	Urinary tract 2	- Complementally lectures for common urogenital problems: Renal tumor, infection, congenital anomalies, urinary bladder, prostate, urethra, and scrotal pathology. * end of the lecture : interactive review of some cases

Week 19	Female genital tract	Imaging techniques, pelvic masses, gynecological infections, obstetrical imaging.
Week 20	Peritoneal cavity and retroperitoneum	Anatomy, imaging techniques, adrenal, aortic aneurysm, retroperitoneal and psoas abscess.
Week 21	Bones 1	Imaging techniques, solitary bone lesion: bone tumor, osteomyelitis.
Week 22	Bones 2	Multiple focal lesions, causes of altered bone density, changes of bonne shape
Week 23	Joints	Imaging techniques, arthritis, infection, some congenital disorders.
Week 24	Spine	Tumors, infection, trauma, degenerative, spinal cord lesions.
Week 25	Skeletal trauma	Imaging techniques, specific injuries.
Week 26	Skull and brain 1	Imaging techniques, plain X-ray, CT, MRI, ultrasound.
Week 27	Skull and brain 2	Brain tumor, stroke.
Week 28	Skull and brain 3	Infections, head injuries.
Week 29	Sinus, orbit, neck	Related pathology, imaging techniques and injuries.
Week 30	Vascular radiology	Diagnostic angiography, Doppler study, interventional radiology

II) Twenty hours practical sessions: 8 small groups: 2Hrs/days for each group/2 weeks: including the following topics:

1. Visiting the radiology department to see each diagnostic imaging modality & observe several radiographic procedures.
2. Power point presentation, slide reviews & photographic films review of emergency cases & most common medical cases.
3. Each student is also given several previously unseen radiographs to interpret and present to the other students for discussion. This review session is not graded, but does provide an excellent opportunity to observe interpreting and reasoning skills.
4. Start to build up a teaching file which including most interesting radiology cases .All students are required to review a teaching file and to contribute two new cases to that file. This has the obvious advantage of building up the teaching file, but, more importantly, it requires the student to integrate a patient's history and physical and clinical data with radiologic data and to

present a reasoned diagnosis. Students are also required to write up three contrast-material procedures, describing the indications, patient preparation, and results of the procedure, and discussing how the procedure contributed to the diagnostic work-up.

5. Other contact with the students (e.g., discussions while interpreting radiographs) provides information to complete an assessment.
6. Course assessment (final quiz) & course evaluation form.

The educational objectives were also used to develop a **course evaluation form**. The form comprises three sections in which students are asked to rate general course characteristics, accomplishment of the general objectives, and usefulness of several learning activities. In addition, students are asked to write comments and suggestions for improvement.

These three formal student evaluations provide documentation on student achievement on almost all of the objectives. Examples from each section are shown in the **table** below.

TABLE: SAMPLE ITEMS FROM COURSE EVALUATION FORM

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
In general:						
1. The course objectives were well defined.	1	2	3	4	5	6
2. The course was well organized.	1	2	3	4	5	6
3. The required readings were appropriate in terms of content.	1	2	3	4	5	6
5. I saw an adequate number and variety of radiographs.	1	2	3	4	5	6
As a result of this course:						
1. I have developed a thorough approach to interpreting plain radiographs.	1	2	3	4	5	6
3. I can incorporate radiologic findings into a differential diagnosis.	1	2	3	4	5	6
6. I have a good sense of what a patient goes through in excretory urography.	1	2	3	4	5	6

Please indicate how helpful each of the following were in your learning about radiology:

	Not At All Helpful	Minimally Helpful	Reason-ably Helpful	Very Helpful	Maxi-mally Helpful	Did Not Attend/ Use
1. Staff lectures to students	1	2	3	4	5	0
2. Slide-tapes	1	2	3	4	5	0
3. Observing special procedures, excretory urography, fluoroscopy	1	2	3	4	5	0
4. Preparing cases for teaching file	1	2	3	4	5	0

Summary:

This approach has allowed the clerkship to be flexible enough to accommodate varying student abilities and interests while also assuring coverage of core concepts and materials.

Requirements to completely achieve instructional objective for diagnostic radiology course in our college:

1. Diagnostic radiology is a wide specialty deals with all medical branches & should not be included with surgical department but as a separate department dealing with all other departments.
2. The college should encourage weekly department conference activities. Students should attend all these interdepartmental conferences

Assessment:

- Summative and formative type.
- Written assessment (electronic correction system - OMR)
- Oral assessment (comments on radiological films or slides)
- Projects (collection of two interesting cases to build up the teaching file)
- Log book (documentation of the performance of the practical procedure)
- Written exam midyear = 25 degrees, final exam = 60 degrees, practical exam = 10 degrees, activities (logbook, teaching file cases) = 5 degrees.

Textbooks approved: Diagnostic imaging by Peter Armstrong, 7th edition, 2013.

Otolaryngology (30 hrs)
Fifth year

I- Intruduction (1 hours)
II-Rhinology (6 hours)
1. Anatomy &Physiology of Nose & Para-nasal sinuses.
2. Inflammation of Nose (Ext.Nose&Rhinitis).
3. Allergic Rhinitis.
4. Nasal Polyposis.
5. Sinusitis.
6. Epistaxes.

III- Otology (8 hours)
1. Anatomy of ear & physiology of hearing
2. Diseases of the external ear.
3. Non suppurative otitis media .
4. Suppurative otitis media.
5. Hearing loss
6. Anatomy &physiology of balance.
7. Vertigo.
8. Facial n. / anatomy & lesions.

IV- Laryngology (15 hours)
1. Anatomy & Physiology of Larynx.

2. Cong. Anomalies of Larynx.
3. Trauma of Larynx.
4.. Laryngitis.
5. Tumors of Larynx.
6. Management of Upper Airways Obstruction.
7. Anatomy & physiology of the pharynx.
8. Diseases of the tonsil.
9. Adenoid hypertrophy & adenoidectomy.
10.-Pharyngitis
11.-Anatomy & infection of the neck spaces
12.-Neck mass.
13.-Foreign bodies in otolaryngology .
14.-Salivary Glands diseases.
15.-Laser in E.N.T.

Sixth Stage

Course	Duration of clinical training	Details	No. of units
Internal medicine	12 weeks (360 hrs)	10 weeks of general medicine and 2 weeks in psychology and neurology. 40 tutorials (once daily)	12
General surgery	12 weeks (360 hrs)	Course includes general surgery, orthopedics and Urosurgery. 40 tutorials (once daily)	12
Obstetrics and gynecology	10 weeks (300 hrs)	10 weeks in the obstetrics and gynecology wards. 40 tutorials (once daily).	10
Pediatrics	10 weeks (300 hrs)	8 weeks in pediatrics wards and 2 weeks in primary health care centers. 40 tutorials (once daily).	10
Total	44 weeks	1320 hours	44 units

Notes:

1. The recommended weekly training hours are 30, so No. of clinical hours = No. of weeks of course X 30.
   e.g. course of medicine is 12 weeks, so No. of clinical hours:
   12 X 30 = 360 hours.
2. No. of clinical units for each course = $\frac{\text{No. of clinical Hrs. of the course}}{30}$
   e.g. No. of clinical units for medicine = $\frac{360}{30}$ = 12 units
3. The training in primary health care centers is crucial prerequisite of qualification from the college.