University of Basrah
College of medicine
Department of anatomy ,histology and embryology

ت	اسم المادة	عدد الساعات النظري	عدد الساعات العملي	عدد الوحدات
1	التشريح البشري	60	90	7
2	الأحياء الطبية	60	90	6

Syllabus of anatomy for the first year

A total of 40 lectures and 90 practical are given in the first year

Topics	Lectural	Hours
INTRODUCTION		
1. Importance of anatomy , definition of anatomy	**Dr. Hassna**	**1hr**
Anatomical position ,sub group of anatomy		
2. Terminology, terms of position ,terms of movement,planes.	**Dr Hassna**	**1hr**
3 . Body cavities &regions Dorsal cranial cavity ,thoracic cavity Abdominal and pelvic cavity.	**Dr. Hassna**	**1hr**
4 .Fascia &skin appendages Fascia ,deep fascia ,function of fascia . Skin ,epidermis ,dermis skin appendages, nail ,hair follicles ,sebaceous gland and sweat gland	**Dr.Salih**	**1hr**
5. Muscles ,tendons & ligaments Types ,function .	**Dr. Salih**	**1hr**
6. Joints ,bones and cartilages Joint definition ,classification ,synovial ,fibrous & cartligeneous ,features of synovial joint . Bones ;definition ,structures ,types . Cartilages ;definition ,structures ,types	**Dr. Hassna**	**1hr**
7. Outline of preservation of human cadavers (embalming & plastination) Chemical used ,steps , advantage and disadvantage	**Dr. Hassna**	**1hr**

UPPER LIMBS

8.Pectoral region : **Dr. Hassna** **1hr**

Surface anatomy, superficial fascia Cutaneous nerves &vessels,deep fascia ,types ,pectoral muscles ;origin , insertion , action ,blood &nerve supply .

9. Axilla **Dr. Hassna** **1hrs**

Boundaries ,walls of axilla ,contents ;axillary artery , branches of axillary artery ,relation of axillary artery axillary vein ,brachial plexus ;roots ,trunks ,divisions , cords and branches , axillary lymph nodes .

10.Muscles attaching scapula to shoulder **Dr. Hassna** **1hr**

Superficial ,deep extrinsic and intrinsic muscles ; origin ,insertion ,action ,blood and nerve supply .

11.Shoulder joint **Dr. Hassna** **1hr**

Glenohumeral joint ,articulation,capsule ,ligament , movement ,relations.Sternoclavicular joint, articulation ,capsule ,ligament movement . Anastomosis around scapula and shoulder

12.Arm **Dr. Mubdir** **2hrs**

Anterior fascial compartment ,muscles, origin ,insertion , action ,nerve and blood supply
Posterior fascial compartment, muscles ,origin ,insertion , action nerve and blood supply

13. Cubital fossa (boundaries & contents). **Dr. Mubdir** **1hr**

Elbow joint, proximal &distal radioulnar joint

15.Forearm **Dr.Hassna** **3hrs**

Osteology ,fascia cutaneous nerve ,venous drainage
Anterior fascial compartment ;muscles, origin ,insertion action ,blood and nerve supply
Posterior fascial compartment ;muscles ,origin ,insertion, action ,blood and nerve supply .
Lateral fascial compartment; muscles ,origin ,insertion , Action,nerve and blood supply .
Peripheral nerves injury.

16. The wrist **Dr.Salih** **1hr**

Flexor retinaculum, flexor synovial sheath ,
extensor retinaculum ,extensor synovial sheath ,
anatomical snuff box ,wrist joint.

17. The hand **Dr.Salih** **2hrs**

The palm ,muscles,thenar and hypothenar ,small muscles
Arteries, Nerves, dorsum of the hand ,
Joints of the hand ,carpal bones.

LOWER LIMBS

18.Gluteal region **Dr.Mubdir** **2hrs**

Skin ,fascia, muscles ,vessels , nerves.
lateral rotator of the thigh at hip joint.
Trochantric anastomosis.
Hip joint.

19. The thigh **Dr. Mubdir** **3hrs**

The back of the thigh ,hamstring compartment
Skin, muscles ,origin ,insertion ,action ,blood and
nerve supply ,
The front of the thigh ,muscles ;origin ,insertion ,action ,
blood and nerve supply .
Femoral hernia, femoral sheath and femoral triangle .
Adductor compartment ;muscles ,origin ,insertion ,action ,
Blood and nerve supply . Adductor canal .

20. Knee joint **Dr. Hassna** **1hr**

Osteology , articulation ,capsule ligament,intra and
extra capsular ligament , menisci ,synovial membrane ,
bursa ,nerve supply ,anastomosis around knee joint , movement .
Popliteal fossa ; boundaries and content.
Tibiofibular joint ;proximal 7 distal ,type ,articulation
Capsule ,ligaments ,nerve supply ,movements .

21. The leg **Dr. Hassna** **3hrs**

Surface anatomy ,superficial fascia ,cutaneous nerve ,
superficial vein ,deep fascia .
Fascial compartment ;
Anterior compartment ;muscles ,origion ,insertion ,
action ,nerve and blood supply .
Posterior compartment :muscles ,origin ,insertion ,
action ,blood and nerve supply .

Lateral compartment ; muscles ,origin ,insertion ,
action ,blood and nerve supply.
Calf pump mechanisms, varicosity of vein of lower limb .
Peripheral nerve injury ,foot drop .

21. The ankle **Dr. Salih** **1hr**
Rretinaculum;flexor ,extensor and peroneal retinaculum
Ankle joint ;Articulation ,relation ,ligaments ,movement .

22. The foot **Dr Hassna** **2 hrs**
Dorsum of the foot ;muscles ,origin ,insertion ,action ,
blood and nerve supply .
Plantar aponeurosis
Layers of the sole of the foot ;muscles, arteries , veins and
nerves.
Subtalar joint
Joint of the foot ;calcaneocuboid ,cuneonavicular ,
cuboidonavicular joints .
Arches of foot .

23. THORAX **Dr.Mazin** **8 hrs**
Surface anatomy ,ribs true ,false ,flouting,typical
and atypical ribs
The mediastinum;superior , inferior and contents
Pericardium ;fibrous and serous ,pericardial sinuses
Heart chambers , papillary muscles ,valves ,skeleton of
the heart, conductive system , coronary arteries ,veins
of the heart .
The lung ,parietal and visceral plura ,surfaces
Lymphatic.
The diaphragm; parts ,openings ,function.

Lectures of Medical biology

A- **Molecular Cell biology**

1- Introduction to cell biology, Types of cell, cell theories.

2- Living status of the cell, living properties of the protoplasm, and General structure of a cell.

3- Chemistry of the cell (inorganic & organic molecules).

4- The organic materials of the cell
Proteins, Lipid, Carbohydrates, and Nucleic acids.

5- Molecular organization of plasma membrane & functions.

6- Modification of the plasma membrane.

7- Molecules crossing the plasma membrane.

8- Structure and functions of cytoplasmic organelles (ribosome, endoplasmic reticulum, Golgi complex, mitochondria, lysosome, peroxisomes, centrioles, cilia and flagella).

9- Cytoplasm (cytoskeleton, cytosol and cytoplasmic inclusions).

10- Structure and functions of the nucleus (nucleolus, nuclear membrane, chromatin and nucleoplasm).

11- Cell cycle and cell division.

12- Gametogenesios

13- Cellular energy.

14- Cellular activity

15- Cellular differentiation.

16- Cellular specialization.

17- Cellular aging.

B- Molecular genetics

1- Genetic terminology.

2- Mendel's 1st law and 2nd law.

3- Mode of Mendelian inheritance.

4- Deviation from Mendelian laws.

5- Linkage and sex-linked inheritance

6- Molecular basis of crossing over

7- Human chromosomes

8- Numerical aberrations

9- Structural aberrations

10- DNA structure and replication

11- RNA structure and translocation

12- Protein synthesis and gene regulation

13- Mutation and its molecular basis

14- Genetic control of metabolism and Gene expression

15- Genetic engineering and biotechnology

16- Recombinant DNA technology

17- Gene cloning

18- Medical application of genetic engineering

C- **Basic histology**

1- Introduction

2- Epithelial tissue

3- Classification of epithelial tissue

4- Glandular epithelium

5- Cell junctions

6- Connective tissue

7- Classification of connective tissue

8- Blood tissue

9- Cartilage

10- Bone tissue

11- Development and growth of bone

12- Muscle tissue

13- Regeneration of muscle tissue

14- Nervous tissue

15- Synapses

Syllabus of Medical Physics

. Terminology, Modeling, and Measurement 1 hours

1. Terminology
2. Modeling
3. Measurement

.Forces on and in the Body 1 hour

1. Static
2. Frictional Forces
3. Dynamics

.Physics of the Skeleton 1 hour

1. What is Bone Made of?
2. How Strong Are Your Bones?
3. Lubrication of Bone Joints
4. Measurement of Bone Mineral in the body

.Heat and Cold in Medicine 1 hours

1. Physical Basis of Heat and Temperature
2. Thermometry and Temperature Scales
3. Thermograph-Mapping the Body's Temperature
4. Heat Therapy
5. Use of Cold in Medicine
6. Cryosurgery
7. Safety with Cryogenics

.Energy, Work, and Power of the Body 1 hour

1. Conservation of Energy in the Body
2. Energy Changes in the Body
3. Work and Power
4. Heat Losses from the Body

.Pressure 3 hour

1. Measurement of Pressure in the Body
2. Pressure inside the Skull
3. Eye Pressure
4. Pressure in the Digestive System
5. Pressure in the Skeleton
6. Pressure in the Urinary Bladder
7. Pressure affects While Diving

8. Hyperbaric Oxygen Therapy (HOT)

.The Physics of the Lungs and Breathing 4hour

1. The Air ways
2. How the Blood and Lungs Interact
3. Measurement of Lung Volumes
4. Pressure-Airflow-Volume Relationships of the Lungs
5. Physics of the Alveoli
6. The Breathing Mechanism
7. Airway Resistance
8. Work of Breathing
9. Physics of Some Common Lung Diseases

.Physics of the Cardiovascular System 5hour

1. Major Components of the Cardio-vascular System
2. O_2 and CO_2 Exchange in the Capillary System
3. Work Done by the Heart
4. Blood Pressure and Its Measurement
5. Pressure across the Blood Vessel Wall (Transmutable Pressure)
6. Bernoulli's Principle Applied to the Cardiovascular System
7. How Fast Does Your Blood Flow?
8. Blood Flow-Laminar and Turbulent
9. Heart Sounds
10. The Physics of Some Cardiovascular Disease
11. Some Other Functions of Blood

.Electricity Within the Body 5 hour

1. The Nervous System and the Neuron
2. Electrical Potentials of Nerves
3. Electrical Signals From Muscles- The Electromyography
4. Electrical Signals from the Heart- The Electrocardiogram
5. Electrical Signals from the Brain –The Electroencephalogram
6. Electrical Signals From the Eye - The Electroretinogram and the Electrooculogram
7. Magnetic Signals from the Heart and Brain- The Magnetocardiogram and the Magnetoencephalogram
8. Current Research Involving Electricity in the Body

.Cardiovascular Instrumentation 4 hour

1. Biopotentials of the Heart
2. Electrodes
3. Amplifiers
4. Patient Monitoring
5. Defibrillators
6. Pacemakers

Application of Electricity and Magnetism in the Medicine. Hour4

1. Electrical Shock
2. High-Frequency Electricity in Medicine
3. Low-Frequency Electricity and Magnetism in Medicine
4. Current Research Involving Electricity Applied to the Body

.Sound in Medicine 4 hour

1. General Properties of Sound
2. The Body as a Drum (Percussion in Medicine)
3. The Stethoscope
4. Ultrasound Pictures of the Body
5. Ultrasound to Measure Motion
6. Physiological Effects of Ultrasound in Therapy
7. The Production of Speech (Phonation)

.Physics of the Ear and Hearing 3 hour

1. The Outer Ear
2. The Middle Ear
3. The Inner Ear
4. Sensitivity of the Ear
5. Testing Your Hearing
6. Deafness and Hearing Aids

.Light in Medicine 4 hour

1. Measurement of Light and Its Units
2. Applications of Visible Light in Medicine
3. Applications of Ultraviolet and Infrared Light in Medicine
4. Lasers in Medicine
5. Applications of Microscopes in Medicine

.Physics of Eyes and Vision 5 hour

1. Focusing Elements of the Eye
2. Some Other Elements of the Eye
3. The retina- The Light Detector of the Eye
4. How Little Light Can You See?
5. Diffraction Effects on the Eye
6. How Sharp Are Your Eyes?
7. Optical Illusions and Related Phenomena
8. Defective Vision and Its Correction
9. Color Vision and Chromatic Aberration
10. Instruments Used in Ophthalmology

.Physics of Diagnostic X-Rays 5 hour

1. Production of X-Ray Beams
2. How X-Rays Are Absorbed
3. Making an X-Ray Image
4. Radiation to Patients from X-Rays
5. Producing Live X-Ray Images – Fluoroscopy
6. X-Ray Slices of the Body
7. Radiographs Taken Without Film

.Physics of Nuclear Medicine (Radioisotopes in Medicine)
hour4

1. Review of Basic Characteristics and Units of Radioactivity
2. Sources of Radioactivity for Nuclear Medicine
3. Statistical Aspects of Nuclear Medicine
4. Basic Instrumentation and Its Clinical Applications
5. Nuclear Medicine Imaging Devices
6. Physical Principles of Nuclear Medicine Imaging procedures.
7. Therapy with Radioactivity
8. Radiation Doses in Nuclear Medicine

.Physics of Radiation Therapy 3 hour

1. The Dose Units Used in Radiotherapy- the Rad and the Gray
2. Principles of Radiation Therapy
3. A Short Course in Radiotherapy Treatment Planning
4. Megavoltage Therapy
5. Short Distance Radiotherapy or Brach therapy
6. Other Radiation Sources
7. Closing Thought on Radiotherapy

.Radiation Protection in Medicine 3 hour

1. Biological Effects of Ionizing Radiation
2. Radiation Protection Units and Limits
3. Radiation Protection Instrumentation
4. Radiation Protection in Diagnostic Radiology
5. Radiation Protection in Radiation Therapy
6. Radiation Protection in Nuclear Medicine
7. Radiation Accidents

منهاج تدريس مادة الحاسبات / المرحلة الاولى

عدد الساعات النظرية 30 ساعة

عدد الساعات العملية 60 ساعة

الموضوع	عدد الساعات النظرية	عدد الساعات العملية
تعريفية بالحاسبات ، اجيال الحاسبات	2	
حاسبات الجيل الخامس والتطبيقات الطبية	2	
مكونات الحاسبة	2	
نظام التشغيل Ms_Dos	1	
شبكات الحاسبات ، شبكة الأنترنت	1	
فيروسات الكمبيوتر	1	
محاكاة بالحاسوب والتطبيقات الطبية	1	
البرمجة بلغة فيجوال بيسك	10	20
Visual Basic		
ويندوز Windows، فيستا Vista	3	10
الأوفيس Office 2007	7	30
برنامج الطباعة word 2007		
برنامج الجداول Excel 2007		
برنامج العروض power point		
2007		

مفردات منهج الكيمياء الطبية / الصف الاول

اسم المادة	المرحلة	عدد الساعات النظري	عدد الساعات العملي	مناقشة	المجموع	الوحدات
الكيمياء الطبية	الاولى	60	60	-	120	6

I. Inorganic and analytical Chemistry (15 hours)

1. **Radioactivity and medical uses of radioactive isotopes**
2. **Acids, bases and salt of medical interests**
3. **The International system of units (S I U)**
4. **The pH concept, acid-base balance**
5. **Solutions and methods of expressing concentrations**
6. **Buffers and buffer systems of physiological importance**
7. **Colloidal Chemistry and biological systems, Dialysis and living systems.**
8. **Chelation and possible applications in medicine**
9. **Ions in living system and: their importance**
10. **Pollution**
    1. Air pollution , 2. Aerosoles , 3. Smoke
    4. Prevention and cure of air pollution.

II. Organic Chemistry (15 hours)

1. Hydrocarbon (AIKANE, ALKENE, ALKYNE) cycloalkane. Steroids, Isomerism. Stereoisomerism, chirality (optical isomerism and geometrical isomerism). A relationship to medical activity of organic compounds and living system.

2. **Alcohols (Oxidation and toxicity to (human). Aromatic Hydrocarbons.**
3. **The chemistry of carbonyl compounds (aldelydes & ketones)**
4. **Carboxylic acids and some of their derivatives (urea, amides, esters, anhydride ….. etc)**
5. **Alkaloids and heterocylic compounds**
6. **Ethers, amines**
7. **Sulphur compounds (sulpha drugs)**
8. **Pollution. Includes:**
   - **Gases used in chemical warfare.**
   - **Pollution due to hospitals and industrial wastes.**
   - **Physiological effects of chemical materials on living system.**
   - **Hydrocarbons pollution.**

III. Biochemistry (30 hours)

1. Carbohydrates (6 hours)

Classification

The three dimensional structures of monosaccharidas.

The cyclic structures of monosaccharides.

Disaccharides , polysaccharides
Mucopolysaccharides and connective tissues. Bacterial cell walls.
Biological importance of carbohydrates

2. Lipids (6 hours)
Classification
Biological roles of lipids
Fatty acids, classification and reactions
Prostaglandins, thromboxanes and leukotrienes
Phospholipids, Steroids

3. Proteins and amino acids (6 hours)
Classification
Reactions of amino acids
Biological activity of peptides
Determination of amino acids sequences of polypeptides
Structural levels of proteins
Globular and fibrous proteins

4. Nucleic Acids (4 hours)
Classification , Nitrogenous bases, nucleosides and nucleotides
Role of nucleic acids in protein synthesis, Nucleic acids and viruses

5. Enzymes (8 hours)
Definition and Classification
Enzymes specificity, factors affecting enzyme activity
Enzymes kinetics and mechanism of action
Regulation of metabolic pathways
Enzymes inhibition
Enzymes in clinical diagnosis
Enzymes and genetic diseases

جدول الدروس العملية / الصف الاول / الفصل الاول

I. **Introduction to laboratory work and safety.**
II. **Cations:**
1. **Cations of Group I**
a. **Properties of the metals and ions.**
b. **Analysis of Group I.**
2. **Cations of Group II.**
a. **Properties of the metals and ions.**
b. **Analysis of Group II.**
3. **Cations of Group III.**
a. **Properties of the metals and ions.**
b. **Analysis of Group III.**

4. **Cations of Group IV.**
a. **Properties of the metals and ions.**
b. **Analysis of Group IV.**
5. **Cations of Group V.**
a. **Properties of the metals and ions.**
b. **Analysis of Group V.**

III. **Analysis of General unknown:**

IV. **Anions:**

1. **Anions of Group I.**
   Properties and Analysis of Anions.
2. **Anions of Group II.**
   Properties and Analysis of Anions.
3. **Anions of Group III.**
   Properties and Analysis of Anions.
4. **Anions of Group IV.**
   Properties and Analysis of Anions.
5. **Anions of Group V.**
   Properties and Analysis of Anions.

V. **Analysis of General unknown:**

منهاج الدروس العملية بمادة الكيمياء الطبية / الصف الاول / الفصل الثاني

I. Acid – Base Titrations:

1. **Preparation of 0.1 N hydrochloric Acid.**
2. **Preparation of 0.1 N Sodium Hydroxide.**
3. **Standardization of 0.1 N-HCl with sodium carbonate.**
4. **Standardization of 0.1 N-Na OH with potassium Hydrogen phthalate.**
5. **Determination of Carbonate.**
6. **Determination of the total acidity of Vinegar.**

II. Argeatometric Titrations.

1. **Preparation of 0.1 N $AgNO_3$.**
2. **Preparation and standardization of 0.1 N Potassium thiocyanate.**
3. **Determination of chloride by Mohr's method.**
4. **Determination of chloride by Volhard method.**

III. Permanganate Titration.

1. **Preparation of 0.1 N Potassium permanganate.**
2. **Standardization of 0.1 N Potassium permanganate with sodium oxalate.**

3. **Determination of Iron.**

IV. Iodine Methods in Titrimetry.

1. **Preparation of 0.1 N Sodium thiosulphate.**
2. **Standardization of sodium thiosulphate against potassium iodate.**
3. **Determination of Copper.**

V. EDTA Titrations.

1. **Preparation of 0.1 N EDTA Solution.**
2. **EDTA titration of magnesium.**
3. **EDTA titration of both calcium and magnesium.**

TEXTBOOK

1. **Quantitative Analytical chemistry: Vol. I Flaschka, Barnard and Sturrock.**
2. **Quantitative Analytical chemistry: Vol. II Flaschka, Barnard and Sturrock.**

V: Biochemistry:

1. **Carbohydrates Reactions:**
    a. **Molischs test.**
    b. **Benedict's test.**
    c. **Barfeod's test.**

2. **Carbohydrates Reactions:**
    a. **Bial's test.**
    b. **Seliwanoff's test.**
    c. **Iodine test.**

3. **Starch hydrolysis.**

4. **Proteins:**
    a. **Color reaction.**
    b. **PPt. reaction.**

5. **Emzymes**

a. **Enzymes: activity, Achromatic point**

b. **Enzymes: pH + activations.**

Syllabus for Foundation of Medicine

First year

Topics	Hours	Year	Dept.
History of Medicine (3 hours)			
	د0 طالب كاظم عكار		
- Pre-Islamic Era	1		Medicine
- Islamic Era	1		Medicine
- Contemporary history of health services in Iraq.	1		Com. Medicine
Health concepts & promotion (4 hours):	د. علاء خطار موسى		
-Definition of health disease, public health	1		
- Ecology of health	1	First	Com. Med.
- Natural history of disease	1		
- Health care and medicine care	1		
Man & Environment (3 hr):):	د. علاء خطار موسى		
- Definition of Terms	1		
- Environmental Health : relevance and scope.	1	First	Com. Med.
- Sanitation	1		
Alternative Medicine	3	First	Medicine د. علاء خطار موسى
Medical communication & interviewing skills.	3	First	Medicine د. حمدى صالح عبد القادر
Library & Information Technology	4	First	Medicine د. علاء خطار موسى
Medical Terminology	10	First	Medicine د. حمدى صالح عبد القادر