URUK UNIVERSITY

COLLEGE OF DENTISTRY

1ST YEAR

CURRICULUM

First year curriculum (1st academic year, 30 weeks)

Subject	*1st Semester hours/week*		*2nd Semester hours/week*		*Total hours*	
	Theory	*Practical*	*Theory*	*Practical*	*Theory*	*Practical*
1. Medical Physics	**2**	**2**	**2**	**2**	**60**	**60**
2. Medical Chemistry	**2**	**4**	**2**	**4**	**60**	**120**
3. Medical Biology	**2**	**2**	**2**	**2**	**60**	**60**
4. Dental Anatomy	**2**	**2**	**2**	**2**	**60**	**60**
5.Computer Science	**1**	**2**	**1**	**2**	**30**	**60**
6-General Anatomy	**2**	**4**	**2**	**4**	**60**	**120**
7-Human Rights & Democracy	**2**	**--**	**2**	**--**	**60**	**--**
8-Medical Terminology	**2**	**-**	**2**	**-**	**60**	**-**
Total	**15**	**16**	**15**	**16**	**450**	**480**

MEDICAL PHYSICS

No.	Subjects	Hours
1-	Forces on & in body: a- Static forces: (type of levers with medical examples). b- Dynamic forces * (Centrifuge).	2
2-	Physics of the skeleton: a- Bones : (Function of bones, Composition of bone, bone remodeling, b- Compact and trabecular bone. c- Stress-strain curve: (compressive and tensile stress, young modulus). d- Bone Joints: (synovial fluid, coefficient of friction of a joint).	3
3-	Heat and cold in medicine: Temperature scales, thermography, cold in medicine and cryosurgery.	2
4-	Energy, Work and Power of the body: First law of thermodynamic. Energy change in the body (Met, Basal metabolic rate (BMR). Work and power. Efficiency heat losses from the body. Anaerobic phase and aerobic phase. Hypothalamus (body's thermostat). Heat lost by (radiation, convection, evaporation of sweat and respiration).	3
5-	Pressure: a- Definition, absolute pressure, gauge pressure, negative pressure, unit of Pressure. b- Measurement of pressure in the body(Manometer). c- Pressure inside the skull. d- Eye pressure. e- Pressure in the skeleton. f- Pressure in the urinary bladder. g- Boyle's law: (pressure while diving).	4

	HOT (hyperbaric oxygen therapy).	
6	Physics of the lung and breathing: a- Function of the breathing system. b- The airways (the alveoli, the function of airways). c- Gases exchange in the lungs (ventilation, perfusion, Dalton law, Henry law, diffusion of gases, oxygen saturation curve). d- Measurement of lung volumes (spirometer). e- Pressure airflow volume relationship of the lungs. f- Compliance. Surface tension (physics of alveoli, Laplace law). g- Eating mechanism, airways resistance, work of breathing. h- sics of lung diseases.	5
7	Physics of cardiovascular system: a- Work done by the heat. b- Blood pressure and its measurement (indirect measurement, sphygmomanometer). c- Pressure across the blood vessel wall (Laplace wall). d- Bernoulli's principle applied to the cardiovascular system. e- Poiseuilles equation, laminar and turbulent flow, viscosity, Renyolds number. f- Physics of cardiovascular diseases.	5
8	Electricity within the body: a- Electrical potential of nerves (resting potential, action potential in myelinated and unmyelinated nerves). b- Electromyogram (EMG). c- Electrical potential in the heart (electrocardiogram ECG). d- Electroencephalogram (EEG). f- Biofeedback. g- Cardiovascular instrumentation (electrodes, amplifiers, monitoring,	5

	defibrillators, pace makers). h- Application of electricity (macro and micro electrical shock, high frequency electricity in medicine). i- Short wave diathermy (capacitance and inductance method). j- Microwave diathermy (characteristics, interaction with tissues).	
9	Sound in medicine: a- Properties of sounds. b- Stethoscope (including heart sound). c- Ultrasound (A-scan, B-scan, M-scan and Doppler effect). d- Physiological effects of ultrasound in therapy.	4
10	Physics of the ear and hearing: a- Structure of the ear (outer ear, middle ear, inner ear). b- Sensitivity of the ears.	3
11	Light in medicine: a- Properties of light, measurement of light and its units. b- Applications of visible light in medicine (endoscope). c- Applications of ultraviolet and infrared light in medicine. d- Laser in medicine. e- Applications of microscopes in medicine.	4
12	Physics of eyes and vision: a- Focusing elements of the eye (cornea, lens). b- Element of the eye (pupil, aqueous humor, vitreous humor, sclera). c- Retina (size of image in retina, rods and cons, dark adaptation). d- Visual acuity, Snellen chart, optical density. e- Defective vision, audits correlation (short and long sight, Astigmatism, contact lenses, glasses prescription. f- Color vision and chromatic aberration (color blindness, Purkinje effect, and ocular chromatic aberration).	5

MEDICAL CHEMISTERY

Subjects

Inorganic chemistry:

a- Acid-Base and salts. b- Ions in body fluids.

c- Buffer - PH and acid-base balance. d- Solutions colloidal system.

e- Concentrations (preparation of solutions). f- Chelating and medical interest. g- Pollution.

h- Radiochemistry.

Organic chemistry:

a- A short introduction to the nature of the carbon atom and the properties of organic compounds.

b- Hydrocarbons, alkanes, alkenes and alkynes (aliphatic).

c- Isomerism, stereoisomerism(optical isomerism and Geometrical isomerism) a relationship to medical activity. d- Alkyl halide.

e- Aromatic hydrocarbons. f- Ethers.

g- The chemistry of carbonyl compounds.

h- Carboxylic acids and their derivatives (amides, esters, …etc).

Bio chemistry:

a- Carbohydrates. b- Lipids.

c- Proteins.

d- Nucleic acids.

MEDICAL BIOLOGY

No.	Subjects	Hours
1-	General introduction:	10
	a- Branches of biology, general characteristics of prokaryotes, fungi, Protista, Anamilia and Plantae.	
	b- General characteristics of viruses , Rickettsiae, general structure of bacteria, basic morphological forms of bacteria.	
	c- Methods of nutrition of bacteria, reproduction methods of bacteria, genetic exchange of Bacteria ,gram positive and gram negative bacteria, bacteria and disease.	
	d- Characteristics of immune system, type of immune response in higher animals.	
2-	Parasitology:	12
	a- Type of relationship between organisms , type of parasites, type of hosts.	
	b- Morphology, life cycle and clinical manifestation of Entamoeba c-Histolytica, Entamoeba coli and Entamoeba gingivitis .	
	d- Morphology, life cycle and clinical manifestation of Giardia lamblia, e-Trichomonas vaginalis Trichomonas tenax and Leishmania tropica.	
	f- Morphology, life cycle and clinical manifestation of plasmodium vivax and Toxoplasma gondi.	
	g- Morphology, life cycle and clinical manifestation of Fsciola hepatica and Schistosoma spp.	
	h- Morphology , life cycle and clinical manifestation of Taenia saginata, Taenia solium and Echinococcus granulosus.	
	i- Morphology, life cycle and clinical manifestation of Ascaris lubricoides, Ancylostoma duodenale and Enterobus vermicularis.	

3- Cell Biology: 15

a- Introductory concept of cell Biology, cell theory, shape of cells, size of cells, types of microscopes.

b- Structure and functions of macromolecules (carbohydrate , lipids and proteins) .

c- Structure and function of nucleic acids, system of protein synthesis. d- Structure and function of plasma membrane.

e- Diffusion , facilitated diffusion , osmosis, active transport, endocytosis, Exocytosis , inter cellular junction, extracellualr matrix.

f- Structure and function of endoplasmic reticulum, mitochondria, golgi apparatus and lysosomes.

g- Structure and function of centrosomes cytoskeleton, non -living inclusions.

h- Structure and nuclear membrane , types of chromatin, Nucleoplasm.

i- Structure and function of nucleolus, life cycle of cell, mitotic division. Meiotic division.

j- Oogensis and spermatogenesis, structure of sperm.

k- Laws of thermodynamics, bioenergetics, sources of cell energy, energy, release in the cell.

4- Histology: 13

a- General characteristics and functions of epithelial tissues, ultra structure of basement membrane, classification of epithelial tissues. b- Type of simple and stratified epithelial tissues.

c- Classification of glandular epithelium simple and compound glands with examples.

d- Essential elements and function of connective tissues.

e- Classification of connective tissues, type of connective tissues. (loose

and dense connective tissues.

f- Structure of cartilage, type of cartilage, structure of bone, type of bone. g- Development of bone, blood.

h- Muscular tissues (smooth, striated and cardiac muscle). i- Nerve cell, classification of nerve cells, neuralgia cells. j- Nerve fiber and structure of peripheral nerve.

k- Synapse, nerve ending, structure of spinal cord.

5- Genetics:

a- Elementary genetics, terminology and Mandel's laws.

b- Modes of inheritance, linkage, crossing over sex linkage.

c- Genetic interactions, multifactorial inheritance, heredity and environment.

d- Structure of chromosome, structure of DNA, Replication of DNA. e- Normal human Kanyotype, abnormalities of the sex chromosomes, mutations and types of mutations.

f- Blood groups, Rhesus blood groups, genetic engineering, restriction enzymes, cloning

DENTAL ANATOMY

subjects

1-Introduction and nomenclature.
2-Numbering systems.
3-Anatomical landmarks.
4-Development of teeth, calcification and eruption.
5-General consideration in the physiology of the permanent dentition.
6-Physiologic form of the teeth and periodontium.
7-The permanent maxillary central incisors.
8-The permanent maxillary lateral incisor .
9-The permanent mandibular incisors.
10- The permanent canines maxillary and mandibular.
11- The permanent maxillary premolars.
12- The permanent mandibular premolars .
13- The permanent maxillary molars.
14- The permanent mandibular molars.
15- The deciduous teeth.
16- The pulp cavities of the anterior permanent teeth.
17- The pulp cavities of posterior permanent teeth.
18- Comparative dental anatomy.

Anatomy

Stage: 1

Topics Covered

1-Introduction
2-Vertebrae
3-Muscles
4-Nervous System
5-The Skull
6-Cranial base
7-Skull
8- Inferior surface Skull
9-Infratemporal Fossa
10-Orbit Orbit
11-Nasal Cavity
12-Palate
13-Mandible
14-Ptergopalatine Fossa
15-Thorax
16-Pleura
17-Diaphragm
18-Mediastinum
19-Heart Heart
20-Big vessels of thoracic cavity
21-Cranial nerves .

Medical Terminology

I- First Semester:

(15 hours)

1- Introduction to medical terminology
2 hours
   a- Overview
   b- Building medical terms from word parts
   c- Pronunciation, spelling, vocabulary
   d- Singular and pleural endings and abbreviations

2- Body structure
2 hours
   a- Overview
   b- Organization of the body
   c- Anatomical position, body planes, directional and positional terms
   d- Body cavities
   e- Word building, vocabulary and abbreviations relating to body structure

3- Musculoskeletal system 3 hours
   a- Skeletal system
      i- Overview
      ii- Anatomy and physiology of the skeletal system
      iii- Word building, vocabulary and abbreviations relating to skeletal system
   b- Muscular system
      i- Overview
      ii- Anatomy and physiology of the muscular system
      iii- Word building, vocabulary and abbreviations relating to muscular system

4- Cardiovascular system
2 hours
   a- Overview
   b- Anatomy and physiology of the cardiovascular system
   c- Word building, vocabulary and abbreviations relating to the cardiovascular system

5- Blood, lymphatic and immune system
2 hours
   a- Blood
      i- Overview

ii- Anatomy and physiology to the blood
iii- Word building, vocabulary and abbreviations relating to the blood

b- The lymphatic and immune system
i- Overview
ii- Anatomy and physiology of the lymphatic and immune system
iii- Word building, vocabulary and abbreviations relating to the lymphatic and immune system

6- Respiratory system 2 hours
a- Overview
b- Anatomy and physiology of the respiratory system
c- Word building, vocabulary and abbreviations of the respiratory system

7- Digestive system 2 hours
a- Overview
b- Anatomy and physiology to the digestive system
c- Word building, vocabulary and abbreviations relating to the digestive system

II- Second semester

(15 hours)

8- Urinary system 2 hours
a- Overview
b- Anatomy and physiology of the urinary system
c- Word building, vocabulary and abbreviations relating to the urinary system

9- Endocrine system 2 hours
a- Overview
b- Anatomy and physiology of the endocrine system
c- Word building, vocabulary and abbreviations relating to the endocrine system

10- Nervous system 2 hours
a- Overview
b- Anatomy and physiology of the nervous system
c- Word building, vocabulary and abbreviations relating to the nervous system

11- Integumentary system 2 hours
a- Overview
b- Body membranes, skin and accessory organs
a- Word building, vocabulary and abbreviations relating to integumentary system

12- Reproductive system 2 hours
a- Female reproductive system
i- Overview
ii- Anatomy and physiology of the female reproductive system

iii- Word building, vocabulary and abbreviations relating to the female reproductive system

b- Male reproductive system

i- Overview

ii- Anatomy and physiology of the male reproductive system

iii- Word building, vocabulary and abbreviations relating to the male reproductive system

13- Special senses 2 hours

a- The eye

i- Overview

ii- Anatomy and physiology of the eye

iii- Word building, vocabulary and abbreviations relating to the eye

b- The ear

i- Overview

ii- Anatomy and physiology of the ear

iii- Word building, vocabulary and abbreviations relating to ear

14- Special topics 3 hours

b- Pharmacology

c- Mental health

d- Diagnostic imaging

e- Rehabilitation services

f- Surgery

g- Oncology

Humans Rights

الفصل(1)جذورحقوقالانسان تاريخا حقوق ةالانسان في الحضارات القديمة
المطلب(1)حقوق الانسان في الشرائع السماوية
المطلب14 حقوق الانسان في العصور الوسطئ
المبحث 4\حقوق الانسان في التاريخ الحديث المعاصر
المطلب 1\الاعتراف الدولي بحقوق الانسان من الحرب العالمية لعصبة الامم المتحدة
المطلب2\ الاعتراف الاقليمي بحقوق الانسان
مطلب3\الميثاق الافريقي –الميثاق العربي
مطلب3\المتطلبات غيرالحكوميةوحقوق الانسان اللجنة الدوليةللهلال الاحمر
منظمة مراقبة حقوق الانسان المنظمة العربية
المطلب4\حقوق الانسان في الدساتير العراقية
الفصل 2\حقوق الانسان \التحديات
المطلب1\في الاعلانالعالمي لحقوق الانسان
المطلب2\في الموازين الاقليميةوالدساتيرالوسطية
المبحث2\اشكالواصناف حقوق الانسان
1.حقوق الانسان الفردية والجماعية
2.حقوق الانسان الاقتصادية والاجتماعية والثقافية

حقوق الانسان المدنية والسياسية
حقوق الانسان الحديثة(الحق في التنمية)
(الحق في التضامن)(الحق في الاسلام)
المطلب\د\الترابط بين حقوق الانسان
الفصل 3\ضمانات احترام وحماية حقوق الانسان
الضمانات الدستورية
الضمانات في مبدا سيادة القانون
الضمانات في الرقابة الدستورية
الضمانات في حرية الصحافة والراي العام
دور المنضمات غير الحكومية في احترام وحماية حقوق الانسان
المطلب2\ضمانات احترام وحماية حقوق الانسان
دور الامم المتحدةووكالاتها المتخصصة
دور المنضمات الاقليمية \الجامعة العربية
الاتحاد الاوربي والاتحاد الافريقي
منظمة الدول الافريقة
دور المنضامات الدولية والاقليمية غير الحكومية والراي العام في احترام وحماية حقوق الانسان

COMPUTER

No.	**Subjects**	**Hours**
1-	Introduction about Computer: a- Hard ware. b- Software. c- Computer structure. d- Floppy magnetic disks. e- Operating System. f- CD-ROM. g- File & Folder. h- High level programming language. i- Constant and Variables. j- Library Function. k- Arithmetic Expression, (rule of precedence). l- Number of system. m-Type of monitor.	6
2-	Introduction about MS-DOS: a- Operating System. b- Dos drive. c- Key board. d- Dos command. 1- Internet command. 2- External command. Ex. A:C:,Dir,Time,Date,CD,MD,RD,Format,Copy,Edit, Tree,Deltree,Del,Ren,CLS,Type,Print. e- Application.	
3-	Introduction about windows.	
4-	Introduction about Microsoft word.	
5-	Introduction about Microsoft excel.	
6-	Introduction about Microsoft power point. 7- Introduction about internet and e-mail.	