

1. Medical biochemistry

Objective (Theory)	Hour(s)	Objective (Practical)	Hour(s)	Notes
Inorganic and Analytical Chemistry 1. Chemical bonding, (ionic , covalent). 2. Acid-base balance, pH and salts of medical interests 3. Solutions, solubility, formation, solution concentration units.	3	Laboratory safety and specimens collection pre-analytical variables , instrumentation methods and quality control.	2	
1. Osmosis and osmotic pressure. 2. Buffers and buffering systems of physiological importance. 3. Ions in living system and their medical importance. .	3	Titrimetric analysis. Preparation and standardization of approximately of each 0.1 N HCl ; 0.1 NaOH	2	
1. Radioactivity and medical uses of radioactive isotopes	2	Determination of melting points and boiling points of organic compounds.	2	
1. Alkanes and cycloalkanes. 2. Alkenes and structure of alkenes and addition reaction 3. Aromatic compounds substitution reaction and aromatic compounds in nature.	2	Preparation of an organic compound. Analysis of the prepared organic compound	2	
1. Alcohols , physical properties and preparation of alcohols. 2. Aldehyde and ketones	2	Purification , extraction , and analysis of organic compounds	2	
1. Carboxylic acids and some of their derivatives 2. Amines and amides	2	Unknown Examination	2	
Isomerism , stereoisomerism chiral (optical isomerism and geometrical isomerism), relationship to medical activity of organic compounds and living system	2	Qualitative analysis of carbohydrates (Part I)	2	
Chemistry of Carbohydrates 1. Introduction and biomedical importance. 2. Chemical nature and classification. 3. Monosaccharides, properties and derivatives. 4. The three dimensional structures of monosaccharides 5. The cyclic structures of monosaccharides.	3	Qualitative analysis of carbohydrates (Part II)	2	
1. Disaccharides, polysaccharides, types and properties 2. Mucopolysaccharides and connective tissues. 3. Bacterial cell walls	2	Qualitative analysis of fatty substances	2	
Chemistry of Lipids 1. Definitions and biomedical importance 2. Classification and chemical properties. 3. Biological roles of lipids 4. Glycerol and its medical importance	3	Qualitative analysis of amino acids and proteins	2	
1. Fatty acids, classification and reactions 2. Lipoproteins 3. Phospholipids, sphingolipids and their properties 4. Cholesterol 5. Biochemistry of Cell Membrane	2	Unknown Examination	2	
Chemistry of Amino Acids and Proteins 1. Introduction and biomedical importance. 2. Nomenclature and classification of amino acids. 3. Acid – base properties and titration curves of amino acids. 4. Reactions of amino acids	3	Normal and abnormal urinalysis	2	
1. Biomedical importance of peptides and proteins. 2. Biological activity of peptides. 3. Determination of amino acids sequences of polypeptides 4. Structural levels of proteins. Globular and fibrous proteins.	2	Unknown Examination	2	
1. Simple and compound proteins 2. Protein folding and associated diseases. 3. Biochemical techniques used for protein separation	2	Quantitative assays of glucose in urine	2	

Chemistry of Nucleic acids 1. Definition and biomedical importance. Chemical properties of nitrogen bases, nucleotides and nucleic acids. Role of nucleic acids in protein synthesis. 2. Nucleic acids and viruses. Structure of chromosomes, chromatin , nucleosomes 1. Organization of DNA in chromosome, coding , non-coding , repetitive , non-repetitive. Genome, human (somatic and mitochondrial), bacterial , viral.RNA, types and functions.	2	Blood glucose determination	2	
Enzymes, Kinetics and Regulation 1. Definition and classification. 2. Catalytic activity and active sites of enzymes. 3. Factors affecting enzymatic reactions. 4. Enzymes specificity. 5. Measurement of enzyme activity.	3	Glucose tolerance test	2	
1. Enzymes kinetics. Mechanism of action. 2. Regulation of metabolic pathways. 3. Enzymes inhibition 4. Isoenzymes	2	Lipid profiles (Serum total cholesterol)	2	
Clinical Enzymology 1. Functional and non-functional plasma enzymes 2. Enzymes as a reagents, as indices of diseases, as a therapeutic agents.	2	Lipid Profile (Serum triglycerides)	2	
Vitamins and Coenzymes 1. Nomenclature and classification of vitamins. 2. Biochemical function of water-soluble vitamins , their deficiencies. 3. Vitamin antagonist 4. Hyper and hypo-vitaminosis.	3	Lipid Profiles (Serum HDL-cholesterol , VLDL-C and LDL-C)	2	
1.Fat-soluble vitamins 2. Roles of fat-soluble vitamins with their deficiencies. 3. Biochemical effect of starvation. Nutritional deficiency. Vegetarian and energy	3	Unknown Examination	2	
The Respiratory Chain and Oxidative Phosphorylation 1. Electron transport chain, cytochrome chain, structure , complexes and organization. 2. Enzymes and coenzymes in oxidative phosphorylation	2	Renal function test (blood urea)	2	
1. Inhibitors of respiratory chain.	2	Renal function test (serum creatinine	2	
2. Uncouplers, and inhibitors of oxidative phosphorylation , dinitrophenol, valinomycin, thermogenin.		and clearance test)		
Digestion and Absorption 1. Digestion and Absorption of Carbohydrates , Lipids and Amino Acids (Lecture No. I) 2. Digestion and Absorption of Carbohydrates , Lipids and Amino Acids (Lecture No. II) 3. Digestion and Absorption of Carbohydrates , Lipids and Amino Acids (Lecture No. III)	3	Unknown examination	2	
Metabolism and bioenergetics Introduction to metabolism, overview of metabolic pathways, energetic and regulation. Bioenergetics	2	Blood inorganic phosphate	2	
Carbohydrate Metabolism Glycolysis, Oxidation of other Monosaccharides, Fructose Intolerance, Galactosemia. Oxidative decarboxylation of pyruvate. Citric Acid Cycle. Gluconeogenesis, Glycogen Metabolism, Pentose Phosphate Pathway , role of NADPH in metabolism	3	Serum uric acid	2	
	2	Serum calcium	2	
Lipid Metabolism Transportation , β -Oxidation of Fatty acids , hormonal regulation. Ketone Body Metabolism. Ketogenesis, site, steps. Ketolysis, site, steps for utilization, ketonemia, ketonuria. Starvation and ketosis. Fatty Acid Biosynthesis , hormonal regulation , elongation	3	Liver function test (serum ALT and AST)	2	
Amino acid Metabolism Essential and non-essential amino acids. Amino acid biosynthesis. Transamination reactions, role of pyridoxal-5-phosphate. Amino acid catabolism.	2	Liver function test (serum direct and indirect bilirubin)	2	
Urea cycle, transport of urea and excretion, regulation Deficiency of urea cycle enzymes. Ketogenic and glucogenic amino acids. Metabolic fate of some amino acids, amino acids and TCA cycle. Biosynthesis of some important of amino acids derivatives: - Tyrosine - derived neurotransmitters. - Tryptophan-derived neurotransmitters. Creatine, glutathione, polyamines, biosynthesis and functions.	3	Liver function test (serum alkaline phosphatase)	2	

Nitric oxide , biosynthesis and functions				
Hormones Classification of hormones, mechanism of hormone. Second messenger : cAMP , adenylatecyclase, cGMP , guanylatecyclase.	3	Cardiac biomarkers (Serum troponin and CK activity)	2	
Nucleotides Metabolism Biosynthesis of purine nucleotides, de novo and salvage pathways. Regulation of purine biosynthesis, degradation of purines. Biosynthesis of pyrimidine nucleotides, regulation, oroticaciduria. Degradation of pyrimidine nucleotides. Deoxyribonucleotide biosynthesis.	3	DNA Extraction and Polymerase chain reaction	2	
Free Radicals and Anti-oxidants Free radicals, reactive oxygen and nitrogen species, generation, damage. Scavenger mechanism, anti-oxidant systems (enzymatic and non-enzymatic)	3	Unknown Examination	2	

Total theoretical hours 90

Practical hours 60

Total credit hours 8

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2. Human biology

<i>Time</i>	<i>Topic</i>
	Exploring Life and Science
1 hour	1. The Characteristics of Life
1 hour	2. Humans Are Related to Other Animals
1 hour	3. Science as a Process
1 hour	4. Making Sense of a Scientific Study
1 hour	5. Science and Social Responsibility
2 hours	<i>Laboratory</i> Understanding the development of medical science
	Chemistry of Life
1 hour	1. From Atoms to Molecules
1 hour	2. Water and Living Things
1 hour	3. Molecules of Life
1 hour	4. Carbohydrates
1 hour	5. Lipids
2 hours	<i>Laboratory</i> Biological samples (blood, urine)
1 hour	6. Proteins
1 hour	7. Nucleic Acids
	Cell Structure and Function
1 hour	1. What Is a Cell?
2 hour	2. How Cells Are Organized
2 hours	<i>Laboratory</i> Determination of carbohydrates, lipids and proteins in biological samples (simple demonstration) -Instruments required -Clinical relevance
	Cell Structure and Function
2 hour	3. The Plasma Membrane and How Substances Cross It
1 hour	4. The Nucleus and Endomembrane System
1 hour	5. The Cytoskeleton, Cell Movement, and Cell Junctions
1 hour	6. Mitochondria and Cellular Metabolism
2 hours	<i>Laboratory</i> Use of light microscope
	Organization and Regulation of Body Systems

2 hour	1.Types of Tissues
1 hour	2.Connective Tissue Connects and Supports
1 hour	3.Muscular Tissue Moves the Body
1 hour	4.Nervous Tissue Communicates
2 hours	<i>Laboratory</i> Identify basic cell structure (slides) Identify cell movement(videos)
	Organization and Regulation of Body Systems
1 hour	5.Epithelial Tissue Protects
1 hour	6.Integumentary System
1 hour	7.Organ Systems, Body Cavities, and Body Membranes
2 hour	8.Homeostasis
2 hours	<i>Laboratory</i> Identify the different types of tissues (slides ,videos)
	Cardiovascular System: Heart and Blood Vessels
1 hour	1.Overview of the Cardiovascular System
1 hour	2.The Types of Blood Vessels
1 hour	3.The Heart Is a Double Pump
1 hour	4.Features of the Cardiovascular System
1 hour	5.Two Cardiovascular Pathways
2 hours	<i>Laboratory</i> -Understanding the basic anatomy of C.V.S -Identify the histology of blood vessels
1 hour	6.Exchange at the Capillaries
1 hour	7.Cardiovascular Disorders
	Cardiovascular System: Blood
1 hour	1.Blood
1 hour	2.Red Blood Cells and Transport of Oxygen
1 hour	3.White Blood Cells and Defense Against Disease
2 hours	<i>Laboratory</i> -Identification of major blood components
1 hour	4.Platelets and Blood Clotting
1 hour	5.Blood Typing and Transfusions
1 hour	6.Homeostasis
	Lymphatic System and Immunity
1 hour	1.Microbes, Pathogens, and You
1 hour	2.The Lymphatic System
2 hours	<i>Laboratory</i> -Determination of CBC
	Lymphatic System and Immunity
1 hour	3 Innate Defenses

1 hour	3.Innate Defenses
1 hour	4.Acquired Defenses
1 hour	5.Acquired Immunity
2 hour	6.Hypersensitivity Reactions
2 hours	<i>Physics laboratory</i> -Basics of ELISA
	-Agglutination test
	Infectious Diseases Supplement
2 hours	1.AIDS and Other Pandemics (Epidemiology)
1 hour	1.AIDS and Other Pandemics (Epidemiology)
1 hour	2.Emerging Diseases
1 hour	3.Antibiotic Resistance
2 hours	<i>Laboratory</i> Infectious Diseases Supplement
	Digestive System and Nutrition
1 hour	1.Overview of Digestion
1 hour	2.First Part of the Digestive Tract
1 hour	3.The Stomach and Small Intestine
1 hour	4.The Accessory Organs and Regulation of Secretions
1 hour	5.The Large Intestine and Defecation
2 hours	<i>Physics laboratory</i> -Basic anatomy of G.I.T
2 hours	6.Nutrition and Weight Control
	Respiratory System
1 hour	1.The Respiratory System
1 hour	2.The Upper Respiratory Tract
1 hour	3.The Lower Respiratory Tract
2 hours	<i>Physics laboratory</i> -Videos of vitamins deficiency
1 hour	4.Mechanism of Breathing
1 hour	5.Control of Ventilation
1 hour	6.Gas Exchanges in the Body
2 hour	7.Respiration and Health
2 hours	<i>Physics laboratory</i> Basic anatomy and physiology of respiratory system

	Urinary System
1 hour	1.The Urinary System
1 hour	2.Kidney Structure
1 hour	3.Urine Formation
1 hour	4.Kidneys and Homeostasis
1 hour	5.Kidney Function Disorders
2 hours	<i>Laboratory</i> -Understanding the basic anatomy of urinary system -Urine Analysis
	Skeletal System
1 hour	1.Overview of Skeletal System
1 hour	2.Bone Growth, Remodeling, and Repair
1 hour	3.Bones of the Axial Skeleton
1 hour	4.Bones of the Appendicular Skeleton
1 hour	5.Articulations
2 hours	<i>Laboratory</i> Anatomy Lab. (Skeletal System)
	Muscular System
1 hour	1.Overview of the Muscular System
1 hour	2.Skeletal Muscle Fiber Contraction
1 hour	3.Whole Muscle Contraction
1 hour	4.Muscular Disorders
1 hour	5.Homeostasis
2 hours	<i>Laboratory</i> Anatomy Lab. (Muscular System)
	Nervous System
2 hours	1.Overview of the Nervous System
2 hours	2.The Central Nervous System
1 hour	3.The Limbic System and Higher Mental Functions
2 hours	<i>Laboratory</i> Nerve conduction studies (tutor- Lab)

	Nervous System
1 hour	4.The Peripheral Nervous System
1 hour	5.Drug Therapy and Drug Abuse
	Senses
1 hour	1.Overview of Sensory Receptors and Sensations
1 hour	2.Proprioceptors, Cutaneous Receptors, and Pain Receptors
1 hour	3.Senses of Taste and Smell
2 hours	<i>Laboratory</i> Examination of special sense (vision, hearing and taste)
	Senses
1 hour	4.Sense of Vision
1 hour	5.Sense of Hearing
1 hour	6.Sense of Equilibrium
	Endocrine System
1 hour	1.Endocrine Glands
1 hour	2.Hypothalamus and Pituitary Gland
2 hours	<i>Laboratory</i> Review Lab.
	Endocrine System
1 hour	3.Thyroid and Parathyroid Glands
1 hour	4.Adrenal Glands
1 hour	5.Pancreas
1 hour	6.Other Endocrine Glands
1 hour	7.Homeostasis
2 hours	<i>Laboratory</i> Determination of hormones in biological samples (biochemical tests)
	Reproductive System
1 hour	1.Human Life Cycle 2.Male Reproductive System
1 hour	3.Female Reproductive System 4.The Ovarian Cycle
1 hour	5.Control of Reproduction
2 hours	6.Sexually Transmitted Diseases
2 hours	<i>Laboratory</i> Identify the basic anatomy of male and female reproductive systems

	Development and Aging
1 hour	1.Fertilization
1 hour	2.Pre-Embryonic and Embryonic Development
1 hour	3.Fetal Development
1 hour	4.Pregnancy and Birth
1 hour	5.Development After Birth
2 hours	<i>Laboratory</i> -Anatomy Lab. -Histology Lab. -Embryology Lab.
	Patterns of Chromosome Inheritance
1hour	1.Chromosomes 2.The Cell Cycle
1hour	3.Mitosis
1hour	4.Meiosis
1hour	5.Comparison of Meiosis and Mitosis
1hour	6.Chromosome Inheritance
2 hours	<i>Laboratory</i> Determine the process of cell division (slides ,videos)
	Patterns of Chromosome Inheritance
1 hour	6.Chromosome Inheritance
	Cancer
1 hour	1.Cancer Cells
1 hour	2.Causes and Prevention of Cancer
1 hour	3.Diagnosis of Cancer
1 hour	4.Treatment of Cancer
2 hours	<i>Laboratory</i> Identify the histopathology of malignant cells
	Patterns of Genetic Inheritance
1 hour	1.Genotype and Phenotype
1 hour	2.One- and Two-Trait Inheritance
1 hour	3.Inheritance of Genetic Disorders

1 hour	4.Beyond Simple Inheritance Patterns
1 hour	5.Sex-Linked Inheritance
2 hours	<i>Laboratory</i> Karyotyping Lab.
DNA Biology and Technology	
1 hour	1.DNA and RNA Structure and Function
2 hours	2.Gene Expression
1 hour	3.DNA Technology
1 hour	4.Genomics
2 hours	<i>Laboratory</i> Nucleic Acids Amplification Techniques (PCR as an example)
Global Ecology and Human Interferences	
3 hours	1.The Nature of Ecosystems 2.Energy Flow 3.Global Biogeochemical Cycles
Human Population, Planetary Resources, and Conservation	
2 hours	1.Human Population Growth 2.Human Use of Resources and Pollution 3.Biodiversity

Total theoretical hours 120

Practical hours 60

Total credit hours 10

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3. Human rights and democracy

<i>Time</i>	<i>Topic</i>
1 hour	نشأة ومفهوم حقوق الإنسان وحياته
1 hour	رسالة الحقوق للإمام زين العابدين عليه السلام (الحق الالهي والحق الشخصي)
1 hour	حقوق الغير عند الامام زين العابدين عليه السلام
1 hour	وصية الامام علي لابنه الحسن عليهما السلام
1 hour	عهد الامام علي عليه السلام الى مالك الاشتر
1 hour	اعلان حقوق الانسان والمواطن الفرنسي
1 hour	الاعلان العالمي لحقوق الانسان ١٩٤٨
1 hour	العهد الدولي للحقوق المدنية والسياسية ١٩٦٦
1 hour	العهد الدولي للحقوق الاقتصادية والاجتماعية والثقافية ١٩٦٦
1 hour	اتفاقية القضاء على جميع أشكال التمييز ضد المرأة

1 hour	اعلان الامم المتحدة لحقوق الطفل
1 hour	قانون حماية حق المؤلف رقم ٣ لسنة ١٩٧١ المعدل بموجب امر سلطة الائتلاف المؤقتة رقم ٨٣ لسنة ٢٠٠٤
1 hour	قانون براءات الاختراع رقم ٦٥ لسنة ١٩٧٣ المعدل بموجب امر سلطة الائتلاف المؤقتة رقم ٨١ لسنة ٢٠٠٤
1 hour	حقوق الانسان في العراق في العهد الملكي
1 hour	حقوق الانسان في الدستور العراقي لسنة ٢٠٠٥

<i>Time</i>	<i>Topic</i>
1 hour	مفهوم الديمقراطية وتعريفها
1 hour	خصائص النظام الديمقراطي
1 hour	الديمقراطية التوافقية / ارنست ليبهارت
1 hour	الديمقراطية التقليدية
1 hour	الديمقراطية الاغريقية
1 hour	انواع الانظمة الديمقراطية / النظام الرئاسي / الولايات المتحدة الامريكية انموذجاً
1 hour	النظام السياسي البرلماني / بريطانيا انموذجاً
1 hour	نظام حكم الجمعية / سويسرا انموذجاً
1 hour	التداول السلمي للسلطة

1 hour	التحول الديمقراطي / العراق انموذجاً
1 hour	المشاركة السياسية للمرأة
1 hour	الانتخابات هي الطريق الى الديمقراطية
1 hour	مفهوم الحقوق السياسية وطبيعته القانونية
1 hour	الاحزاب السياسية نواة الديمقراطية
1 hour	الاحزاب السياسية في العراق بعد عام ٢٠٠٣

Theoretical hours 30

Credit hours 2

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4. Medical education

<i>Time</i>	<i>Topic</i>
1 hour	Introduction to medical education
2 hours	Practical Foundation of medicine
1hour	What is expected from medical graduate?
2 hours	Practical Foundation of medicine
1 hour	Paradigm shift in medical education
2 hours	Practical Foundation of medicine
1 hour	Adult learning theories
2 hours	Practical Practicing Medical Education-Microteaching
1 hour	Adult learning theories
2 hours	Practical Practicing Medical Education-Microteaching
1 hour	Microteaching
2 hours	Practical Microteaching
1 hour	Critical thinking
2 hours	Practical Microteaching
1 hour	Knowing your learning style
2 hours	Practical Microteaching
1 hour	Using mind and concept map
2 hours	Practical Concept mapping
1 hour	Using mind and concept map
2 hours	Practical Concept mapping

1 hour	Portfolio and reflection
2 hours	Practical Building portfolio
1 hour	Prevention of burn out
2 hours	Practical Building portfolio
1 hour	Assessment of medical student
2 hours	Practical Models of student assessment
1 hour	Assessment of medical student
2 hours	Practical Models of student assessment
1 hour	Leadership and management
2 hours	Practical Models of student assessment

1 hour	Learning in small group
1 hour	Practical-1 Practicing small group teaching I
1 hour	Practical-2 Practicing small group teaching II
1 hour	Learning in large group: interactive lecture
1 hour	Practical-1 Practicing small groups in large group teaching I
1 hour	Practical-2 Practicing small groups in large group teaching II
1 hour	Problem based learning (PBL)
1 hour	Practical-1 Practicing PBL I
1 hour	Practical-2 Practicing PBL II
1 hour	Student role in PBL
1 hour	Practical-1 PBL tutorial session I (CVS)
1 hour	Practical-2 PBL tutorial session II (CVS)

1 hour	Steps in PBL
1 hour	Practical-1 PBL tutorial session I (GIT)
1 hour	Practical-2 PBL tutorial session II (GIT)
1 hour	Deriving learning issue from the problem
1 hour	Practical-1 PBL tutorial session I (Resp.)
1 hour	Practical-2 PBL tutorial session II (Resp.)
1 hour	Searching for resource data
1 hour	Practical-1 PBL tutorial session I (Renal)
1 hour	Practical-2 PBL tutorial session II (Renal)
1 hour	Role of feedback in PBL
1 hour	Practical-1 PBL tutorial session I (CNS)
1 hour	Practical-2 PBL tutorial session II (CNS)
1 hour	Team based learning (TBL)
1 hour	Practical-1 Practicing TBL I
1 hour	Practical-2 Practicing TBL II
1 hour	Program evaluation: student role
1 hour	Practical-1 TBL session I (IRAT)
1 hour	Practical-2 TBL session II (GRAT)
1 hour	Feedback skill for improving learner performance
1 hour	Practical-1 Grand TBL session I
1 hour	Practical-2 Grand TBL session II

1 hour	Inter professional education
1 hour	Practical-1 Practicing feedback skills I
1 hour	Practical-2 Practicing feedback skills II
1 hour	Quality in medical education: accreditation system
1 hour	Practical-1 Audiovisual Learning I
1 hour	Practical-2 Audiovisual Learning II
1 hour	Time management
2 hour	Practical-1 Practicing clinical skill lab. I
1 hour	Time management
2 hour	Practical-2 Practicing clinical skill lab. II

Theoretical hours 30

Practical hours 60

Credit hours 4

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5. Medical English

<i>Time</i>	<i>Topic</i>
1 hour	Word Building Rules
1 hour	Prefixes
1 hour	Suffixes
1 hour	Whole Body Terms
1 hour	Integumentary System
1 hour	Cardiovascular System
1 hour	The Blood And Lymphatic Systems
1 hour	Digestive System
1 hour	Respiratory System
1 hour	Urinary System

1 hour	Skeletal System
1 hour	Muscles And Joints
1 hour	Nervous System
1 hour	The Special Senses
1 hour	Endocrine System

1 hour	Male Reproductive System
1 hour	Female Reproductive System
1 hour	Obstetrics
1 hour	Child Health
1 hour	Radiology And Diagnostic Imaging
1 hour	Oncology
1 hour	Pharmacology
1 hour	Mental Health
1 hour	Gerontology
1 hour	Common Medical Abbreviations
1 hour	Listening comprehension

1 hour	Listening comprehension
1 hour	Listening comprehension
1 hour	Listening comprehension
1 hour	Listening comprehension

Theoretical hours 30

Credit hours 2

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6. Medical physics

<i>Time</i>	<i>Topic</i>
1 hour	Terminology , Modeling and Measurement
2 hours	<i>Laboratory</i> Measurement tools
1hour	Forces on and in the body 1.Describe how muscles and bones operate to produce body movements.
2 hours	<i>Laboratory</i> Simple pendulum
1hour	2.Gives examples of levers in the muscular-skeletal system of the body.
2 hours	<i>Laboratory</i> Simple pendulum Review
1 hour	3.Provide a simple analysis of: (a) the forces involved in standing , lifting and bending. (b) the interactions of the body with the ground in walking and running.
2 hours	<i>Laboratory</i> Skill lab-skeleton
1 hour	Physics of skeleton 1.What is the bone made of?
2 hours	<i>Laboratory</i> Tutor lab –measure bone tension
1hour	2.How strong are your bones?
2 hours	<i>Laboratory</i> Tutor lab –measure bone tension Review
1 hour	3.Lubrication of bone joints. 4.Measurements of bone mineral in the body.
2 hours	<i>Laboratory</i> Skill lab-bone joints
1 hour	Energy , Work ,and Power of the Body 1.Estimate the power typically provided by muscle. 2.Describe how the body maintains a constant temperature , and give examples of how this may be assisted.
2 hours	<i>Laboratory</i> Specific heat capacity
1hour	3.Conservation of Energy in the Body
2 hours	<i>Laboratory</i> Specific heat capacity Review

1 hour	Pressure
	1. Give a simple description of the human circulatory system, including typical blood pressures and flow rates, and give examples of the diagnostic importance of their measurement. 2. Describe the use of the sphygmomanometer to measure blood pressure.
2 hours	<i>Laboratory</i> Boyle's law
1 hour	3. Give examples of other fluid pressures within the body. 4. Give examples of invasive methods of measuring blood pressure, including those using resistance, capacitance and inductance transducers.
2 hours	<i>Laboratory</i> Skills – B.P different methods
1 hour	5. Give examples of other fluid pressures within the body.
2 hours	<i>Laboratory</i> Skills – B.P different methods Review
1 hour	The physics of Cardiovascular System
	1. Describe the action of the heart as a pump to the circulation system. 2. Ohms law
2 hours	<i>Laboratory</i> Stock law (viscosity)
1 hour	3. Blood flow 4. Blood viscosity
2 hours	<i>Laboratory</i> Stock law (viscosity) Review
1 hour	5. How fast dose your blood flow? 6. Poiseuilles law 7. Work done by the heart
2 hours	<i>Laboratory</i> Poiseuilles law
1 hour	Electricity within the Body
	1. Give an illustrated account of the origin of biopotentials in the human nervous system. 2. Describe the method of measuring an electrocardiogram (ECG), recall its main features , and explain its use in diagnosis .
1 hour	3. Give examples of other measurements of the body's electrical activity, and of the therapeutic use of electricity.
2 hours	<i>Laboratory</i> Tutor lab-nerve conduction (AP)

1 hour	4.Type of nerve fibers (myelinated and unmyelinated nerves) 5.Factors affect speed of action potentials 6.Electromyogram (EMG).
1 hour	7.The heart beat 8.Whats a dipole ? 9.Measurment of the voltage associated with a dipole. 10.Electrical events of a heart cycle
2 hours	<i>Laboratory</i> Cathode ray oscilloscope (CRO)
1 hour	Sound in Medicine
1 hour	Physics of Hearing
2 hours	<i>Laboratory</i> Velocity of sound
1 hour	Light and vision in Medicine 1.Use the following scientific terms correctly :total internal reflection, coherent, numerical aperture ,resolution , laser.
1 hour	2.Explain the principles of the transmission of light by optical fibers.
2 hours	<i>Laboratory</i> Refractive index
1 hour	3.Describe how the fiber optic endoscope is constructed ;compare the operation of the video endoscope which uses a charge couple devise. 4.Give examples of the use of endoscope in diagnosis and treatment.
1 hour	5.Explain the principles of operation of the laser and give examples of its medical application.
2 hours	<i>Laboratory</i> Visual acuity
1 hour	Heat and cold in medicine
1 hour	The Physics of Lungs and Breathing 1.The airways. 2.Lung volumes.
2 hours	<i>Laboratory</i> Focal length
1 hour	3.Pressure airflow volume relationships of the lungs.
1 hour	4.Physics of the alveoli. 5.The breathing mechanism 6.Airway resistance.
2 hours	<i>Laboratory</i> Surface tension
1 hour	7.Work of breathing. 8.Physics of some common lung diseases.
1 hour	Radiation (introduction)
2 hours	<i>Laboratory</i> Tutor lab –PFT

1 hour	1. Physics of diagnostic x-ray (x-ray production)
1 hour	2. X-ray interaction with matter
2 hours	<i>Laboratory</i>
1 hour	3. Using x-ray in diagnosis
1 hour	Physics of Nuclear Medicine (Radioisotopes in Medicine)
	1. Terminology
	2. Properties of alpha, beta and gamma radiations. 3. Give an example of production of radionuclides.
2 hours	<i>Laboratory</i> Gamma ray
1 hour	4. Production and use of technetium-99 and iodine-131. 5. Uses of radioisotopes for diagnosis and therapy.
1 hour	6. Introduction to MRI & PET-Scan
2 hours	<i>Laboratory</i> Hospital visit (MRI)
1 hour	Radiation Protection in Medicine
	1. Define, know the units of, and use in calculations, the following terms: activity, exposure, absorbed dose, dose equivalent, exposure rate constant.
	2. Use the following terms correctly: committed dose equivalent, effective dose equivalent, collective dose equivalent, linear energy transfer, quality factor, relative biological effectiveness.
2 hours	<i>Laboratory</i> Radiation Dose measurement
2 hour	3. Recall the background levels of radiation, and give examples of some common medical doses, such as chest X-ray.
	4. Discuss, in general terms, and by giving examples, the relationships between radiation levels and the incidence of damage or disease.
2 hours	<i>Laboratory</i> Laser 1
2 hour	5. Recall the general principles under which the use of radioisotopes is permitted, and give examples of maximum permitted dose levels.
2 hours	<i>Laboratory</i> Laser 2

Theoretical hours 45
Practical hours 60
Credit hours 5

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7. Fundamentals of medicine

1 hour	Principles of interpersonal communication
1 hour	Factors affect communication and Techniques to improve it
1 hour	Rumors and misinformation
1 hour	How to give effective presentation, using PowerPoint
1 hour	History of medicine\ Pre-Islamic Era
1 hour	History of medicine\ Islamic Era
1 hour	History of medicine\ Contemporary history of health services in Iraq
1 hour	Definition of Health, Disease, and public health
1 hour	Ecology of health
1 hour	Natural history of disease
1 hour	Levels of prevention
1 hour	Primary Health Care and Medical care
1 hour	Health and the Millennium Development Goals
1 hour	Five Stars Doctor

1 hour	Alternative medicine 1
1 hour	Alternative medicine 2
1 hour	Library and information technology 1
1 hour	Library and information technology 2
1 hour	Medical terminology \ Epidemiology
1 hour	Medical terminology \ Health administration
1 hour	Medical terminology \ Health economics
1 hour	Man and environment\ Definition of terms
1 hour	Environmental health: relevance and scope
1 hour	Sanitation
1 hour	History of psychology & Biological basis of behavior
1 hour	Sensation , Perception & Consciousness
1 hour	Learning motivation & emotion

1 hour	Memory Intelligence 4
1 hour	Personality & stress 5
1 hour	Developmental theory

Theoretical hours 30

Credit hour 2

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8. Computer science

عدد ساعات العملي	المنهاج العملي	عدد ساعات النظري	المنهاج النظري
2	-Applied working on Personal Computer and its main functions	1	- Introduction to Computer and Information technology Personal Computer
4	Applied working on the main parts of a computer - Input / output ports	2	- Hardware ; The main part of a computer - Input/output ports, motherboard, and power supply
4	Internal Devices of computer Connecting Peripheral devices	2	Types of Memory Memory capacity measurement Representing Data in Computer, Internal Processing
4	Applied working on Storage System, Storage Media Input/output Devices	2	Storage System Storage Media Input/output Devices
2	Dos commands Windows Operating System Windows elements Exercises	1	- Operating System - Disk Operating System, Limitation of DOS Graphic User Interface, Advantages of GUI
2	Explain the requirements to connect and interact with the network Exercises	1	Looking at Network Types of Network Features and benefits Connecting to a Network Interacting with Network Downloading and uploading to a Network
2	Practical test Applied safety precautions when using a computer	1	Ergonomics , Health Issues Ways to Ensure a User's Wellbeing Safety precautions when using a Computer
2	Installing / uninstalling program Using control panel exercises	1	Using Control Panel Program Setup Adding / Removing Program Drives Information
4	Applied working about Computer management by My computer	2	Computer management by My computer. Viewing file, folder properties Recycle Bin
	Viewing file, folder properties Recycle Bin		
4	Applied working about Microsoft word window elements	2	Microsoft word 2007 Definition Starting word processing Window and elements
عدد ساعات العملي	المنهاج العملي	عدد ساعات النظري	المنهاج النظري
4	Applying Creating new file , insert text Insert, merge and split paragraph Saving document Closing Microsoft word	2	Microsoft word elements Creating new file , insert text Insert, merge and split paragraph Saving document Closing Microsoft word

4	Applying about view a document Text management , formatting text. Inserting table, picture, clipart, smartart, shapes ,symbol, object, chart etc Page setup: page break, header and footer, Page numbering	2	Ways to view a document Text management , formatting text Inserting table, picture, clipart, smart art, shapes ,symbol, object, chart etc. Page setup: page break, header and footer, Page numbering
4	Paragraph orientation Table Applied exercises	2	Inserting table into a document Entering text in a table inserting , deleting Rows and columns ting text in a table moving table Adjusting column width, and row height Border and shading. Merging, splitting cells Splitting a table resizing graphics Moving graphics format an image
4	Applied working about Using the Browser Opening a webpage Copying picture, and text from a webpage Downloading files Search engine Online Encyclopedias Online dictionaries Creating , sending a message File Attachment Message priority Saving draft copy of an Email Receiving , forwarding , replying, and printing message	2	The Internet and Communications Basic concepts . Internet , E-mail Web search Network Etiquette Email Addresses , Advantages of using Email
4	Applied Microsoft excel window and elements Applied exercise	2	Microsoft Excel 2007 Spread sheet definition Starting Microsoft excel Window elements
4	Applied Mathematical formula Statistical functions Charts, and table	2	Mathematical formula Statistical functions Charts, and table
4	Applied working about Microsoft power point window and elements Applied exercise	2	Microsoft Power Point 2007 Definition Presentation Applications Power point window elements
2	Saving presentation Slide processing Start a slide show	1	Saving presentation Slide processing Start a slide show

Theoretical hours 30
Practical hours 60
Credit hours 4

Unit one & unit two

Curriculum of Biochemistry for Integrated System

Second year

Weeks	Objective (Theory)	Hour(s)	Objective (Practical)	Hour(s)	Notes
1	1. Discuss the principles of osmolarity and ion balance. 2. How and why cells and tissues regulates own concentration.	1	-----	-----	
3	1. Discuss the biochemical structure of nucleic acids, DNA, and RNA. 2. Identify steps of DNA synthesis (key enzymes that play role). 3. Outline principles associated with gene and chromosome organization	2	-----	-----	
4	1. Discuss the underlying concept of inborn errors of metabolism (galactosemia and phenylketonuria as examples). 2. Discuss the metabolic enzymes deficient in galactosaemia and the effect	3	-----	-----	

	on the metabolic pathways in which they are involved. 3. RNA synthesis: • The role of RNA in expressing genetic information • Regulation of gene expression • The process of transcription • Post-transcription modification 4. Protein synthesis: • Steps of protein synthesis • Post-translation modifications of proteins				
5	1. Discuss alcohol metabolism and its effect on liver. 2. Discuss the medical consequences of alcoholism. 3. Describe how cytochrome P ₄₅₀ system of enzymes deals with xenobiotic.	1	-----	-----	
Total Hours		7			
Credits		0.4662			

Second Year : Unit Two (Human Environmental)

Weeks	Objective (Theory)	Hour(s)	Objective (Practical)	Hour(s)	Notes
3	1. Discuss purine metabolism disorders in relation to primary immune-deficiency	2	Discuss the principle and use of PCR for viral diagnosis (with lab skills)	2	
Total Hours Theory		2	Total Hours (Practical)		2
Credits		0.1332	Credits		0.0666

Weeks	Problem	Objectives/theory	Hours	Objectives /practical	Hours
Week 6	Pesticide poisoning	1. Describe the gross and sectional anatomy of spinal cord 2. Describe the organization of the autonomic nervous system 3. Histology of nervous tissue and neuro-muscular junction	1 hour (anatomy)	Functional anatomy of joints	2 hours

Weeks	Problem	Objectives/theory	Hours	Objectives /practical	Hours
Week 1	Nadia burns hand	1. Describe the primary tissue types and functions-epithelial tissue Outline layers of the skin	1 hour (histology)		
Week 5	Smoking with chronic cough	Describe the primary tissue types and functions-connective tissue	1 hour (histology)		
Week 6	Pesticide poisoning	1. Histology of nervous tissue and neuro-muscular junction	1 hour histology		

Unit No.	subject	Topic	duration
1	Genetics	1- Explain the genetic basis of all types of Down's syndrome. 2- Describe the clinical features of Down syndrome. 3- Discuss the structure, number and function of chromosomes. 4- Describe how chromosomal abnormalities occur (classification and common types). • Note: (In addition to above objectives, all general concepts of genetics should be covered within this week)	4 hrs
	Lab-Genetics	Cytogenetics (Human Karyotype Analysis): 1-Explain how chromosomal abnormalities arise. 2-Understand the process of obtaining a chromosome spread from a human sample and the traditional method of Giemsa stain. 3-Identify different human chromosomes and prepare a karyotype from a given patient chromosomal spread to provide a diagnosis.	2 hrs
	Genetics	1- Discuss the modes and molecular basis of inheritance with emphasis on Mendelian law 2- Describe the mechanism of gene expression 3- Outline the common types of genetic defects	3
	Lab-Genetics	Molecular Genetics (DNA Extraction): • Extract DNA from leukocytes. • Identify and explain the key steps in the extraction procedure.	2 hrs
2	Microbiology	1. Outline the microorganisms of medical importance 2. Describe concept of microbial pathogenicity and virulence factors 3. Describe modes of transmission of infectious organisms 4. Define normal microbiota 5. Describe signs of wound infection 6. Discuss principles of antibiotic therapy and mechanism of resistance	1hr
	Immunity	1. Outline the function of immune system 2. Discuss the innate immune system 3. Describe cells of the immune system 4. Describe the process of acute inflammation mediated by the immune cells	1hr
	Micro Lab	1. Describe principles of Gram staining. Specimen collection. Normal microbiota.	2 hrs

		Culture	
	Microbiology	<ol style="list-style-type: none"> 1. Discuss the concept of bacteria as invaders 2. List the bacteria of medical importance 3. Describe the process of bacterial replication and growth 4. Describe the interactions between human host and microbes 5. Review the normal microbiota in the respiratory tract 6. Outline the microorganisms causing respiratory tract infections 7. Whooping cough; clinical presentation (outline) 8. Discuss principles of diagnosis of infectious diseases: Culture, antibiotic susceptibility testing (E test and disc diffusion) and serological diagnosis (ELISA and Latex) 9. Describe the process of sterilization and disinfection. 	2hrs
	Immunity	<ol style="list-style-type: none"> 1. Discuss and compare innate and acquired immune responses 2. Identify cells of the immune system- Types and functions 3. Describe the major classes of antibodies and their characteristics 4. Describe the structure of an antibody molecule 5. Identify the rationale for immunization 6. Discuss the types of vaccines 	2hrs
	Micro Lab	Antibiotic sensitivity test and culture	2 hrs
	Microbiology	<ol style="list-style-type: none"> 1. Introduction to virology 2. Describe the epidemiology and mechanism of HIV transmission 3. Discuss the microbiological properties of HIV.; the mechanism of viral entry and replication 4. Describe the natural history of HIV infection and the progression/definition of AIDS 5. Discuss the methods for HIV testing and diagnosis 6. Outline the management protocol and follow up in HIV infection 7. Discuss the common opportunistic infections associated with HIV/AIDS 	2hrs
	Immunity	<ol style="list-style-type: none"> 1. Discuss the role of cell-mediated immunity 2. Describe the activation of lymphocytes in CMI 3. Describe the process of viral infection of immune cells (HIV and HTLV) 4. Outline the chemokines involved in CMI 5. Enlist the process of ADCC 	3hrs
	Micro Lab	<ol style="list-style-type: none"> 1. PCR design 2. Serologic diagnosis 	2 hrs
	Immunity	<ol style="list-style-type: none"> 1. Describe the role of immune tolerance 2. Recall CMI 3. Outline the types of primary immune-deficiencies 	4hrs

		4. Outline the important components in the history and clinical findings in primary immune-deficiency 5. Discuss the principles of investigations and management of primary immune-deficiency 6. Enlist the various forms of SCID 7. Recall their underlying mechanisms 8. Recall the role of innate immune system 9. Describe the immunological concepts explaining the importance of matching and rejection in transplant	
	Immunity	1. Discuss the role of NK cells in tumor immunology 2. Describe the immune intervention in cancer therapies 3. Discuss the use of antibodies in treating cancer	1hr
	Microbiology	Food borne infection	1hr
	Complementary cases	Food-borne Infections	1hr
3	Microbiology	Infectious diseases of the peripheral nervous system	1 hr
	Immunology	Immunological basis of Rheumatoid arthritis	1 hr
	Genetics	Genetic bases of the muscle diseases (e.g. DMD)	1 hr
4	Nil		

Unit	Total hours/Theory	Total Hours/ Practical	Credits
I	7	4	0.6
II	17	6	1.3

undergraduate study of pathology starts from year 2, unit 2 and continues until the end of year 4

One: Curriculum of pathology for year 2, Unit 2: *Human Environment*.

week	Objectives/theory	hours	Objectives/practical	hours
1	Cell injury and cell death, acute inflammation	2	Morphology of acute inflammation	2
2	Chronic inflammation	1	Morphology of chronic inflammation	2
3	Pathology of tumors in HIV	1		
4	1. Autoimmunity: pathological changes. 2. Hypersensitivity reactions: pathological changes. 3. Transplant rejection: pathological Basis. 4. Graft versus host disease (GVHD): Mechanism.			
5	1. Outline the common carcinogens 2. Describe classification-differences between benign & malignant tumors 3. Discuss approaches for the diagnosis of tumors. 4. Outline the common tumor markers 5. Describe the mechanism of spread of tumors.	3	Morphology of tumors	2
6	1. Describe the pathogenesis of organ damage in poisoning 2. List the common poisons	1		

Pharmacology Curriculum - Unit 1: *Stations of life(stage2)e*

Objectives/Theory		Hours	Objectives/Practical	Hours
1- Understand how drugs act in the system and how they are eliminated. 2- Discuss pharmacodynamics (mechanisms of drug action, drug antagonism) 3- Discuss pharmacokinetics (drug absorption)		3	1- Classification and identification of substances of abuse potential 2- Discuss; tolerance, dependence, withdrawal, and addiction 3- Describe major symptoms and signs of drug abuse. 4- Outline steps of treatment of addiction.	2
	4- Discuss the concepts of drug use and abuse. 5- Explain the concepts of dependence, tolerance, and withdrawal. 6- Describe the risks involved with drug use and abuse.	1		
1- Discuss pharmacokinetics (drug kinetics, distribution, metabolism and elimination)		3	1. Identification of different drug dosage forms.	2
2- Outline the pharmacological changes that occur with aging 3- Discuss official prescription writing 4- Discuss practical problems associated with prescribing for the elderly 5- Outline common adverse drug events in the elderly		1	2. Skills of drug administration via; i.v., i.m., s.c. & inhalation routes.	
Total hours		8		4
Credits				0.666

Family & community medicine

Week	Problem	Objective of resource lectures	Hours
1	Inside the womb	1-Discuss the importance of routine antenatal and postnatal care at the MCH 2-Identify key health education / advice which should be given to pregnant women, including nutritional advice, preparation for labor and breastfeeding	2

		3-Outline the risk factors and alarming signs in pregnancy 4-Describe the role of family support in pregnancy 5-Outline the psychological changes that occur in pregnancy 6-Outline the advantages of breastfeeding	
2	Infancy and Childhood Care	1- Identify normal growth parameters at birth and in childhood 2- Outline the role of MCH in monitoring and ensuring normal growth and development in infancy and childhood 3- Identify the nutritional requirements from birth (emphasis on breastfeeding/breast milk), to infancy (including weaning methods) and childhood 4- Outline the Iraqi immunization schedule from birth to school age 5- Discuss the principles of water/ electrolyte replacement and the composition 6- of the oral rehydration solution.	3
3	Abnormal baby	1-Describe the social and rehabilitative support services available for persons with disability in Karbala. 2-Outline the factors that are associated with increased risk of having a child with chromosomal abnormalities. 3-Outline the antenatal screening/diagnostic tests available for Down's syndrome 4-Understand the difference between “Screening” and “Diagnostic” antenatal tests for Down’s syndrome.	1
4	A problem in the genes	1-Discuss the effect of consanguineous marriage on family and society 2-Discuss the role of screening in early detection of inborn error of metabolism 3-Appreciate the importance of screening and early detection of inborn error of metabolism	1
5	The dark tunnel	1-Identify the most common types of drugs abused in the Iraq. 2-Discuss the prevalence and/or incidence of drug abuse in the Iraq and neighboring countries. 3-Describe the social, cultural, and family issues related to drug use and abuse. 4-Describe the risk and protective factors	1

		(community, family, social, school, and individual) involved in drug use and abuse. 5-Identify the rehabilitation services available in Iraq.	
6	Retirement life	1-Describe the changing demographic trends with regards to aging 2-Discuss how demographic trends influence health policy planning 3-Outline the common problems and diseases seen in the elderly 4-Outline preventive and health promotion measures which target the aging population 5-Outline rehabilitative and community services available for the elderly in Iraq 6-Outline the risk factors for accidents in the elderly	2
Total			10

Epidemiology Objectives & hours (unit 1)

Week	Problem	Objective of resource lectures	Hrs
1	Inside the womb	Concepts of Health and Population Health Objectives and Uses of Population Health Studies	1
2	Infancy & Childhood Care	Definition of Demography Sources of demographic data Census, Vital Statistics	1
3	Abnormal baby	Definition of population density Stages of demographic cycle Three demographic processes	1
4	A problem in the genes	Growth rate and Doubling time Definition of dependency ratio Definition of life expectancy	1
5	The dark tunnel	Types of population pyramids Expansive, Constrictive, Near Stationary	1
6	Retirement life	Health indicators Natality measurement 1-Crude Birth Rate 2-General Fertility Rate	1
Total			6

Second year – Unit 2-Man & his environment

Week	Problem	Objective of resource lectures	Hours
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7		1-Outline approaches for prevention of accidents at home and in the work place 2-Discuss the public health implications of infection in food handlers and methods for prevention 3-Outline the causes of burn injuries 4-Outline the classification of burns 5-Outline the principles of management of burns Outline the complications of burns injuries	1
8		1-Discuss the concept of herd immunity 2-Outline childhood immunization schedule in Iraq 3-Describe the adverse reactions to immunization 4-Discuss the contraindications to immunization. Plan re-immunization 5-Describe modalities of complementary and alternative therapy and the composition 6-of the oral rehydration solution.	2
9		1-Discuss the approaches for prevention of HIV/AIDS 2-Define Notifiable diseases and outline Notifiable diseases in Iraq	1
10		1-Discuss the importance of counselling and obtaining proper consent from organ donors	1
11		1-Outline the risk factors for Cancer 2-Discuss the epidemiology of Cancer (outline) 3-Describe measures for prevention of Cancer 4-Discuss the role of cancer registries	1
12		1-Definition of research, 2-Importance of research 3-The research cycle aid 4-Autopsy 5-Recall the common house-hold poisons 6-Critical care management	1
Total			6

Epidemiology Lectures & hours (unit 2)

Week	Problem	Objective of resource lectures	Hours
7		Introduction to Epidemiology: Definition of epidemiology, Aims of epidemiology Concept of Disease Concepts of Causation Germ Theory Epidemiologic Triad Web of Causation Types of Epidemiology Descriptive Epidemiology	1

		Analytical Epidemiology Clinical Epidemiology	
8		Health Indicators Definition of Health Indicators Uses of Health Indicators Data Sources for Indicators Tools of measurement 1. Frequency 2. Proportion 3. Ratio 4. Rate	1
9		Categories of rates 1. Crude rates 2. Specific rates 3. Standardized rates	1
10		Types of Indicators 1. Health status indicators 2. Health Determinant indicators 3. Outcome indicators 4. Process indicators Characteristics of good indicator	1
11		Measures of Morbidity: Definition of Morbidity International classification of diseases (ICD-10) Value of morbidity data Measures of morbidity Incidence, Incidence rate, Attack rate and Secondary Attack rate Uses of Incidence	1
12		Prevalence, Point Prevalence, Period Prevalence Uses of Prevalence Relationship between Incidence Iceberg Phenomenon of Disease	1
Total			6

Objectives		Theory/hr
1- Selection of Antimicrobial drugs. 2- Classification of antibiotics, mechanism of action 3- Cell wall synthesis inhibitors (Penicillin).		3
Protein synthesis inhibitors (Macrolides).		1
Antiviral Drugs		2
General Principles of Cancer Chemotherapy.		1
1- Common drugs acting on synaptic sites/ Cholinergic agonist. 2- Anticholinergic drugs/ Management of organophosphorus poisoning. 3- Neuromuscular blocking drugs.		3
Total Hours		9
Credits		0.5994

Physiology Curriculum - Unit 1: Stations of life

Physiology Curriculum - Unit 1: Stations of life				
Weeks	Objectives/Theory	Hours	Objectives/Practical	Hours
1	1- Outline the stages and hormones of the female menstrual cycle 2- Outline the physiology of conception. 3- Outline the maternal physiological and hormonal changes that occur in pregnancy	2		
2	1- Describe the body water compartments, composition and the process of maintaining homeostasis. 2- Describe the structure and composition of biological membranes and transport mechanisms of molecules across these membranes	4	Body fluid//Osmatic and osmolarity	2
3				
4				
5	a- Describe the physiological changes that occur during puberty a. For males & b. For females	1		
6	1- Discuss the biological basis of aging 2- Describe the physiological changes that occur in the elderly 3- Address physical signs frequently observed during the examination of elderly people	2		
Total hours		9		2
Credits		0.6		0.07

	Physiology Curriculum - Unit 2: <i>Human Environment</i>			
Weeks	Objectives/Theory	Hours	Objectives/Practical	Hours
1				
2				
3				
4				
5				
6	1. Inter and intra-neuronal communication 2. Neurotransmitters and synaptic transmission 3. Nerve signaling in the ANS 4. General organization of the nervous system 5. Resting membrane potential 6. Action potential and its propagation in excitable cells	3	Autonomic function test	2
Total hours		3		2
Credits		0.2		0.07

Clinical resources

Year 2	Theory	practical
Unit I Stations of life	Week 1: Basic Obstetrics Skill Lab.: 1. Describe the symptoms and signs of pregnancy. 2. Describe the process of medical history taking in a pregnant woman. 3. Outline the routine investigations carried out in pregnancy including methods for assessment of fetal wellbeing. Calculate expected date of delivery (EDD). Week 2 1. Initial inspection of a baby at birth: (significance). Normal growth parameters at birth. Apgar score. 2. Normal Dentition. (Primary and Secondary) 3. Infantile colic: Definition, cause(s), significance Week 3 1. Down Syndrome: Clinical presentations, Life longevity, complications, Risk for future pregnancies etc.	

Unit II Human Environment	
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<p>Week 2</p> <ol style="list-style-type: none">1. Outline the classification of burns2. Outline the principles of management of burns <p>Outline the complications of burns injuries</p> <p>Week 4</p> <ol style="list-style-type: none">1. Outline the types of primary immune-deficiencies2. Outline the important components in the history and clinical findings in primary immune-deficiency	
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<p>Discuss the principles of investigations and management of primary immune-deficiency</p>	
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Skill lab

Year 2	Clinical sessions
Unit I Stations of life	
Week 1 4 hours	Introduction to communication skills: <ol style="list-style-type: none"> 1- Understand the teaching and learning objectives to be covered in clinical skills during semester one. 2- Introduction to the terms and concepts used in communication skills. 3- Self-assessment questionnaire of students' attitudes to communication skills. 4- Exercises and videoed examples of communication skills.
Week 2	1. Initial inspection of a baby at birth: (significance). Normal growth parameters at birth. Apgar score.
Week 3	1. Breaking bad news (outline)
Week 4	
Week 5	Ethics: doctor-patient confidentiality
Week 6	

Year 2	Clinical sessions
Unit II Human Environment	
Week 1	Injection 1
Week 2	Injection 2
Week 3	Vital signs
Week 4	Revision session
Week 5	Formative OSCE
Week 6	Examination of vital signs and first aid