Subject curriculum

First year: Semester (1) & (2)

Code	Course Title	Lecture hours	Laboratory hours	Credit hours	Page
LARAB0101	Arabic language	2	0	2	1
MPHYS0101	Medical Physics (1)	2	3	3	2
MPHYS0102	Medical Physics (2)	2	2	3	3
CYTOL0101	Cytology (Cell Biology)	2	2	3	3
BIOLO0101	Human Biology	2	3	3	4
HGENS0102	Human Genetics	2	2	3	5
MEMBR0102	Medical Embryology	2	2	3	7
CHEMG0101	General Chemistry	2	3	3	7
CHEMO0102	Organic Chemistry	2	2	3	9
HISTO0102	Introduction in Histology (1)	1	0	1	10
FIZIO0102	Introduction in Physiology (1)	2	0	2	11
HANAT0102	Human Anatomy (1)	4	2	5	11
THINK0101	Scientific thinking	2	0	2	12
LENGL0101	English Language (1)	3	0	3	12
LENGL0102	English Language (2)	3	0	3	12

Arabic Language

1- رؤية عامة عن الادب العربي.
2- مصطلحات أدبية.
3- الضمائر.
4- الفاعل.
5- الامثال.
6- قصائد للحفظ (نزار قباني – أمل دنقل – جورج جرداق).
7- قطع نثرية للحفظ (رسالة الخليفة عمر بن الخطاب).
8- المبتدا والخبر.
9- التشبيهة والاستعارة.
10- النواسخ (كان واخواتها – وان واخواتها – كاد واخواتها).
11- المعجم.
12- المنصوبات.
13- الهمزة.
14- الاخطاء الشائعة.
15- تطبيقات نحوية.
16- تطبيقات بلاغية.

عميد كلية الطب البشري
أ.د نزار الضاهر

مصدق
رئيس الجامعة
أ.د نزير ابراهيم

Medical Physics (1)

1. **Terminology, Modeling & measurement (2 hrs)**
- Accuracy and precision.
- Subdivisions of the field of medical physics .
- Kinds of models.
- Systems of measurement.
- Physical quantities.

2. **Forces on & in body (2 hours)**
- Static forces: (type of levers with medical examples).
- Frictional force .
- Dynamic forces .
- Centrifuge , Effective acceleration .

3. **Physics of the Skelton (3 hours)**
- Bones : (function of bones , composition of bon , bone remodeling , compact and trabecular bone).
- Stress – strain curve: (compressive and tensile stress , young modulus).
- Bone joints: (synovial fluid , coefficient of friction of a joint).
- Measurement of bone mineral in the body .

4. **Heat and cold in medicine (4 hours)**
- Temperature scales , Types of thermometer , Thermography , Cold in medicine , Cryosurgery.
- Physical methods of producing heat in the body.
- The techniques of freezing the blood.

5. **Energy , work and power of the body (4 hours)**
- First law of thermodynamic . Energy change in the body . Work and power . Efficiency heat losses from the body .
- Heat lost by (radiation ,convection , evaporation of sweat , respiration)

6. **Pressure (3 hours)**
- Absolute pressure , Gauge pressure , Negative pressure , Units of pressure .
- Measurement of pressure in the body (manometer).
- Pressure inside the skull .
- Eye pressure .
- Pressure in the Skeleton .
- Pressure in the urinary bladder .
- Boyles law : (pressure while diving).
- Hyperbaric Oxygen Therapy (HOT) .

7. **Physics Of The Lungs And Breathing (4 hrs)**
- Function of the breathing system .
- The airways : (the alveoli, the function of airways) .
- Gases exchange in the lunge : (Ventilation , perfusion , Dalton law , Henry law , Diffusion of gases , Oxygen saturation curve) .
- Measurement of lung volumes (Spirometer) .
- Pressure air flow relationship of the lungs .
- Compliance .
- Surface tension (physics of alveoli , Laplace's law) .
- The breathing mechanism .
- Airways resistance .
- Work of breathing .
- Physics of lung diseases .

8. **Physics of cardiovascular system : (4 hours)**
- Work done by the heart .
- Blood pressure and it's measurement (direct and indirect method) .
- Bernoullis principle applied to the cardiovascular system : (Poiseuilles Equation , Laminar and turbulent flow , Viscosity , Renyolds number) .
- Physics of some cardiovascular diseases .

9. **Electricity Within The Body: (4 hours)**
- The nervous system .
- Electrical potential of nerves:(resting potential, action potential in myelinated & unmyelinated nerves).
- Electromyogram (EMG) .
- Electrical potential in the heart :(ECG).
- Electroencephalogram (EEG) .
- Biofeedback .
- Cardiovascular instrumentation :(electrodes , Amplifiers , Monitoring , Defibrilators , pacemakers) .
- Application of electricity : (Electrical shock , "macro &micro electrical shock " , High frequency electricity in medicine .
- Short wave diathermy (Capacitance and inductance method) .
- Microwave diathermy (characteristics , interaction with tissues) .

Medical Physics (1): Practical

Title	Exp.	Title	Exp.
Viscosity of Liquid	**1**	Refractive index of water	**9**
Speed of Sound	**2**	Cathode Ray Oscilloscope	**10**
Focal Length of a Convex Lens	**3**	Spiral Spring	**11**
The Water Equivalent of a calorimeter	**4**	Radius of Gyration of a Rolling Cylinder	**12**

Electronic Measurements	**5**	Measurement of the Length of a very Long wire using resistivity method	**13**
Ohm's Law	**6**	Magnetic field generation in a solenoidal coil	**14**
Kirchhoff's Law	**7**	Determination of the Inductance of a Coaxial cable	**15**
The Acceleration due to Gravity by means of a simple pendulum	**8**	Errors of Observations & Measurements	**16**

Medical Physics (2)

1. SOUND IN MEDICINE (2 hours)
- Properties of sound .
- Stethoscope (including heart sound) .
- Ultrasound : (A – scan , B – scan , M – scan & Doppler effect) .
- Physiological effects of ultrasound in therapy .

2. Physics Of The Ear And Hearing (3 hrs)
- Structures of the ear (Outer ear , middle ear , inner ear) .
- Sensitivity of the ears .

3. Light In Medicine (4 hours)
- Properties of light .
- Measurement of light and it's units .
- Applications of visible light in medicine (Endoscopes) .
- Applications of ultraviolet and infrared light in medicine .
- Lasers in medicine .
- Applications of microscopes in medicine .

4. Physics Of Eyes And Vision (4 hours)
- Focusing elements of the eye (Cornea , lens) .
- Element of the eye (Pupil , aqueous humor , vitreous humor , sclera)
- Retina : (Size of image in retina , Rods and cones , Dark adaptation)
- Visual acuity , Snellen chart , Optical density .
- Faulty vision and its correction : (Short sight , Long sight , Old sight, Astigmatism , Contact lenses , Glasses prescription) .
- Color vision and chromatic aberration : (Color blindness, Purkinje effect, chromatic aberration).
- Ophthalmoscope .

5. Physics Of Diagnostic X – Rays (4 hours)
- Properties of X – rays .
- Production of X – rays .
- Absorption of X – rays .
- X – ray image .
- Radiation to patients from X – rays .
- Radiographs without film .

6. Physics Of Nuclear Medicine (4 hours)
- Radioisotopes , decay constant , Half life , Units .
- Basic instrumentation and it's medical applications: (GM-tube , Photo-multiplier tube , Scintillation detector , Solid state detector , Liquid scintillation detector) .
- Therapy with radioactivity .
- Radiation doses in nuclear medicine .
- Nuclear medicine imaging devices .

7. Physics Of Radiation Therapy (4 hours)
- The dose units : (Rad and Gray) .
- Principle of radiation therapy .
- Brachy therapy (short – distance radiotherapy) .

8. Radiation Protection In Medicine: (3 hours)

Medical Physics (2): Practical

Title	Exp.	Title	Exp.
Water equivalent of a calorimeter	**1**	Melting point of naphthalane	**7**
Variation of time with length vibration	**2**	Latent heat of fusion of ice	**8**
Vibration of a stretched string	**3**	Refractive index of glass	**9**
Viscosity of water	**4**	Acceleration due to gravity by spiral string	**10**
Refractive index	**5**	Resistance of electric light bulb variation with current	**11**
Determination of EMF	**6**	Acceleration due to gravity by simple pendulum	**12**

Cytology (Cell Biology)

Lecture	Hrs	Lecture	Hrs
Cell Structure & Function * Cellular Level of Organization * Prokaryotic Cells * Enkaryotic Cells	**2**	Meiosis & Sexual Reproduction * Halving the Chromosome Number * Genetic Variation * The Phases of Meiosis: Compared to Mitosis	**1**
Membrane Structure & Function * Membrane Models * Plasma Membrane Structure & Functions * Permeability of the Plasma Membrane	**2**	Microbiology & Evolution * Viruses * Bacteria * Archaea	**1**

* Modification of Cell Structure			
The Cell Cycle & Cellular Reproduction * The Cell Cycle * Mitosis & Cytokinesis * The Cell Cycle & Cancer	**1**	The Chemistry of Organic Molecules * Organic Molecules * Carbohydrates; * Lipids * Proteins * Nucleic Acids	**1**

Cytology (Cell Biology) *Cont…..*

Lecture	Hrs	Lecture	Hrs
DNA Structure & Function * The Genetic Material * The Structure of DNA * Replication of DNA	**1**	Metabolism : Energy & Enzymes * Cells & the follow of Energy * Metabolic Reactions & Energy Transformation * Metabolic Pathways & Enzymes * Oxidation – Reduction & Flow of Energy	**2**
Gene Activity : How Genes Work * The Function of Genes * The Genetic Code * Transcription * Translation	**2**		

Cytology (Cell Biology): Practical

Lab.	Hrs	Lab.	Hrs
Microscopy Today * Compound Light Microscope * Transmission Electron Microscope * Scanning Electron Microscope * Magnification * Resolution * Illumination * Viewing * Recording	**2**	Meiosis & Sexual Reproduction * Genetic Variation * Crossing Over * Independent Assortment	**1**
Processing of Biological Material * For Light Microscopy * For Electron Microscopy * Fixation * Dehydration * Embedding * Sectioning * Staining	**2**	Structure & Function of Organic Molecules * Carbohydrates * Lipids * Proteins * Nucleic Acids	**2**
Drawing Examination & Discussion of Cell Structure & Function	**1**	Virus Structure & Anatomy	**1**
* Prokaryotic Cells * Eukaryotic Cells	**1**	Gene Activity * The Genetic Code *Transcription *Translation	**1**
* Membrane Structure * Flouid Mossaic Model * Membrane Function	**1**	Metabolism * Cells & Flow of Energy * Metabolic Pathways & Enzymes * Oxidation – Reduction & Flow of Energy	**1**
The Cell Cycle & Cellular reproduction * Cell Cycles * Mitosis * Cytokinesis * The Cell Cycle & Cancer	**2**	Cellular Respiration * Glycolysis * Fermentation * Metabolic Pool	**1**

Human Biology

Week	Lecture
1st	The Cell structures & functions:- Prokaryotic cells, Eukaryotic cells, cell differentiation, adaptation, cell components – cytoplasm, plasma membrane, nucleus, and nucleolus. Some types of cellular transport across the cell membrane.
2nd	Cell Organelles – Mitochondria, DNA, RNA, endoplasmic reticulum (RER) & (SER), Golgi complex,

	Lysosomes, cytoskeleton, cell deposits (pigments, Lipids, Carbohydrates), Serous cells, Mucus cells, Myoepithelial cells.
3rd	Steroid cells, Epithelial derived tumer cells, Types of epithelial cells (Tissues), Basement membranes (Tissues), types of intercellular junctions.
4th	Specialization of the cell surface: Steriocilia, microvillus, Cilia, Flagella, Cell polarity, Renewal of epithelial cells, Metaplasia, General biology of epithelial tissues, endocrine & Exocrine.

Human Biology *Cont…..*

Week	Lecture
5th	Muscular Tissues:- Types of muscles, Skeletal, Cardiac, Smooth, Structure and morphology of the skeletal muscle, Organization of the skeletal muscle, striations. Examples of skeletal muscles.
6th	Sarcoplasmic Reticulum and the Transverse tubular system, Mechanism of contraction, Innervations, Action potential, system of energy production.
7th	Cardiac Muscle, the heart function and its circulatory structures and functions, heart excitation & its pacemaker.
8th	Smooth muscles, structures and functions, examples of the smooth muscles in different hollow organs like the intestine, ureter, and blood vessels. Muscular disorders: - spasm and injuries, strain, sprain, myalgia.
9th	Mid – Term Exam.
10th	Nervous system:- 1) Peripheral nervous system, neuron structure & Functions, types of neurons, Myelin sheath and schwann cell, axons and nodes of Ranvier, disorder of myelin sheath.
11th	Nerve Impulse, resting potential, Action Potential, spinal nerves, somatic system, and function of the spinal cord.
12th	Cranial nerves, sympathetic and parasympathetic systems.
13th	The Brain:- Functions of the different parts, The lobes of a cerebral hemisphere.
14th	The processing Centers of the Brain.
15th	Central white matte, Basal nuclei, Diencephalons cerebellum, Brain stem.
16th	Limbic system and higher Mental function, Degenerative Brain disorders.

Human Biology: Practical

Week	Experiment
1st	General directions and practical applications with the important precautions for the use of microscope in human tissues.
2nd	The Urinary system: - Anatomical and functional study of the kidney. ((General)).
3rd	The Cardiovascular system:- Anatomical and functional study of the heart, ((General))
4th	The Nervous system:- General study of the anatomy and function of the Brain.
5th	Peripheral Nervous system:- As an illustrated in the dissected Frog.
6th	Dissection of the ALBENO Rat to study the Digestive and Respiratory systems.
7th	Special senses:- study the general anatomy and function of the Eye.
8th	Mid – Term Exam.
9th	Haematology: Microscopic study of the Red Blood Cell (RBC) and the White Blood Cells (WBC). The types and Morphology.
10th	Male Reproductive system:- a- The Testis (C.S) b- The spermatozoa.
11th	Female Reproductive system:- a- The Ovary (C.S). b- The Ova.
12th	Osmotic Pursuer and Blood.
13th	The Bacteria – Prepared Slides, types and shapes, Bacteria Plantation (Demonstration).
14th	Circulation, application in the Rat Ear and in the Frog Web.

Human Genetics

Items	Hours	Items	Hours
Applications of Mendel's Principles:- * The Punnett Square Method * The Forked – Line Method	2	Mendelian Principles in Human Genetics:- * Pedigrees * Mendelian Segregation in Human Families	2

* The Probability Method		* Genetics Counseling	
Formulating & Testing Genetic Hypotheses:- * The Chi – Square Test	**2**	**Extensions of Mendelism:-** Allelic Variation & Gene Function * Incomplete Dominance & Codominance * Multiple Alleles * Allelic Series	**2**

Human Genetics *Cont…..*

Items	**Hours**	**Items**	**Hours**
Gene Action from Genotype to Phenotype: * Influence of the Environment * Environment Effects on the Expression of Human Genes * Gene Interactions * Epistasis	**2**	**The Genetic Basis of Cancer:** Cancer: A Genetic Disease * The Many Forms of Cancer * Cancer & the Cell Cycle * Cancer & the Programmed Cell Death * A Genetic Basis for Cancer	**2**
The Chromosome Theory of Heredity: * Experimental Evidence Linking Inheritance of Genes to Chromosomes * The chromosomal Basis of Mendel's Principles of Segregation & Independent Assortment	**2**	**Oncogenes:** The Tumor Suppressor Genes * Genetic Pathways to Cancer	**1**
Sex – Linked Genes in Human Beings: * Hemophilia, an X – Linked Blood Clotting Disorder * Color Blindness , an X – Linked Vision Disorder * Genes on the Human Y Chromosome * Genes on Both the Human X & Y Chromosomes	**2**	**Techniques of Molecular Genetics:** Basic Techniques Used to Identify, Amplify, & Clone Genes: * The Discovery of Restriction Endonucleases * The Production of Recombinant DNA Molecules in Vitro * Amplification of Recombinant DNA * Molecules in Cloning Vectors.	**2**
Sex – Chromosomes & Sex Determination: * Sex Determination in Human Beings * Sex Determination in Other Animals	**2**	**Applications of Molecular Genetics:** Molecular Diagnosis of Human Diseases DNA Fingerprints: * Paternity Tests * Forensic Application	**2**
Dose Compensation of X – Linked Genes: * Inactivation of X – Linked Genes in Female Mammals	**1**	Production of Eukaryotic Proteins in Bacteria: * Human Growth Hormone * Protein with Industrial Applications	**2**
Variation in Chromosome Number & Structure: Cytological Techniques: * Analysis of Mitotic Chromosomes * The Human Karyotype * Cytogenetic Variation	**2**	The Molecular Analysis of Genes & Chromosomes: * Physical Maps of DNA Molecules Based on Restriction Enzyme Cleavage Sites * Nucleotide Sequences: The Ultimate Fine Structure Maps	**2**

Human Genetics: Practical

Lab.	**Hrs**	**Lab.**	**Hrs**
The Science of Genetics **Basic Exercises** Illustration of Basic Genetic Analysis **Testing Your Knowledge** Integration of Different Concepts & Techniques	**2**	**Questions & Problems** Extensions of Mendelism	**2**
Questions & Problems Enhancement of Understanding & Development of Analytical Skills	**2**	**Basic Exercises** Illustration of Basic Genetic Analysis **Testing Your Knowledge**	**2**

Mendelism: The Basic Principles of Inheritance.		Integration of Different Concepts & Techniques	
Basic Exercises Illustration of Basic Genetic Analysis **Testing Your Knowledge** Integration of Different Concepts & Techniques	**2**	**Questions & Problems** Enhancement of Understanding & Develop Analytical Skills **Variation in Chromosome Number & Structure**	**2**

Human Genetics: Practical *Cont*…..

Lab.	Hrs	Lab.	Hrs
Analysis of Mitotic Chromosomes polyploidy The Human Karyotype Formulation & Testing of Genetic Hypothesis	**2**	**Application of Molecular Genetics** * Human Gene – Therapy * DNA Fingerprints	**2**
Application of Chi – Square Test * Monohybrid Cross * Dihybrid Cross	**2**	* Paternity Testing * Forensic Application	**2**
Human Fingerprint * Identification * Classification * Left Vs Right * Inheritance	**2**	**Human Genetic Engineering** Physical Maps of DNA by Restriction Enzymes	**2**
Recombinant DNA Technology * Isolation of DNA * Gel – Electrophoreses of DNA * Polymerase Chain Reaction (PCR) * Gene Cloning * Cloning Vectors	**2**	**Nucleotide Sequencing of DNA** * DNA sequencing by 2,3 – dideoxynucleoside triphosphate chain – termination * Large – Scale DNA sequence by Automated DNA sequencing machines. machines.	**2**

Medical Embryology

1- Introduction
2- Gametogenesis and Fertilization
3- Implantation
4- Bilaminar Germ disc
5- Trilaminar Germ disc
6- Embryonic period
7- Fetal period + Congenital malformation
8- Fetal membrane + placenta
9- Skeletal and muscular system
10- Body Cavity + Cardiovascular System
11- Cardio vascular system
12- Digestive system
13- Respiratory system
14- Urogenital system
15- Head and neck
16- Central nervous system

Medical Embryology: Practical

Week	Lab.	Week	Lab.
1st	Male and female the productive system	7th	Chick embryo sections in 33 hours
2nd	Fertilization and cleavage.	8th	Chick embryo 48 hours
3ed	Chick embryo 18 hours	9th	Chick embryo sections in 48 hours
4th	Chick embryo 24 hours	10th	Chick embryo 72 hours
5th	Chick embryo sections in 24 hours	11th	Placenta and umbilical cord
6th	Chick embryo 33 hours		

General Chemistry

Lecture	Hours	Lecture	Hours
Introduction of chemistry • Definition of chemistry. • Why we do study chemistry in Medicine College. • Classification of chemistry.	**1**	**Matter:** • Definition of matter; properties of matters. • Classification of matter; composition of matters. • State of matter; physical & chemical changes. • Energy & life.	**2**
Chemistry & Life • The scientific method	**2**		

• The international system of units (SI) - SI prefixes. - Length. - Mass. - Volume. - Equivalent united started and SI units. • Density & specific gravity.		• Conservation of mass – energy. • Units of energy. • The body & heat transfer.	

General Chemistry *Cont*…..

Lecture	Hours	Lecture	Hours
Atoms: • Definition; elements: their name & symbols. • Periodic table; parts of atom; atomic number. • Isotopes; mass No. & relative atomic masses. • Electron arrangement.	3	**Aqueous solution & Colloids:** • Types of solutions. • Solubility. • Concentration of solution (a. wet. /wet. Percent b. vol. /vol. percent c. wet. /vol. percent d. ppm & ppb e. molar con. F. melli equivalents per liter) • Electrolytes & Non. Electrolytes. • Osmosis & Osmotic pressure. • Colloids & Colloidal dispersions. • Dialysis & Living system.	4
Radioactivity & nuclear chemistry: • Discovery of radioactivity. • Types of radiation. • Detecting ionizing radiation. • Nuclear reaction. • Artificial radioactivity. • Units of radiation. • Isotopes; half – life. • Medical uses of radioactive. • Isotopes. • Biological effects of radiation.	3	**Chemical reactions in aqueous solutions:** • Solubilities of salts in water. • Ionic reaction. • Ions in living system; chemical equilibrium. • The lechatelier principles. • Ionization of water. • Introduction to acids & bases. • Neutralization. • Reaction of acids & bases with carbonic acid & its salts. • Aqueous solution of salts.	3
Chemical bonds: • Octet rule. • Ions. • Ionic bonds. • Covalent bonds. • Polar covalent bonds. • Bonding capacity of atoms.	3	**Acid & Base:** • Acids – definition. • Classification of acids. • Properties of acids. • Uses of acids. • Bases – definition. • Properties of bases. • Uses of bases. • Ionization constant of acids & bases. • Salts – definition. • Uses of salts.	3
Chemical reactions: • Chemical formulas. • Chemical equation. • Gram molecular weight & moles. • Weight relations in chemical reactions. • Energy & chemical reactions. • Oxidation – reduction reactions.	4	**The PH concept:** • Definition. • The – PH scale. • Measurement of PH. • The PH of some common body fluids. • Acid – base titration. • Normality	4

• Catalysis.		• Buffer solutions; buffer definition. • Blood buffers (Bicarbonate buffer, phosphate buffer & haemoglobin buffer). • Acid – Base balance in blood. • Acidosis. • Alkalosis.	

General Chemistry: Practical

1. Safety & Laboratory Instructions
2. Sliver Group Analysis
3. Standardization; Standardization of Hydrocholoric Acid
4. Standardization of NaOH solution using standardized HCl solution.
5. Heat of Neutralization
6. Hess's Law
7. Chemical Kinetics : Dependence of Reactions Rate on Concentration
8. Chemical Kinetics: Half life of a 1st order reaction.
9. Solubility Product Constant
10. Stoichiometry
11. Collegative Properties: Lowering of freezing point
12. Hydrolysis
13. Le Chatelier's Principle.
14. Gravimetric analysis of water of crystallization.

Organic Chemistry

Lecture	Hours
Alkanes: alkanes; structure formulas • Conformation of alkanes .IUPAC naming system for alkanes. • Classifying carbon atoms in hydrocarbons. • Alkyl groups in branched alkanes. • Naming branched-chains alkanes. • Drawing structural formulas. • Haloalkanes. • Cycloalkanes • Physical properties of alkanes of cycoalkanes. - Solubility & density; melting & boiling points; some uses of alkanes; crude oil. • Chemical properties of alkanes and cycloalkanes. -Combustion; halogenation of alkanes.	5
Alkenes & Alkynes (unsaturated Hydrocarbons) • Naming alkenes. • Structures of alkenes & geometric isomers. • Importance of geometric isomers in living system. • Addition reaction of alkenes. -Addition of Hydrogen. -Addition of Halogens. -Addition of Acids. -Addition of Water. • Polymerization. • Polymers formed by living systems. • Alkynes: structure; naming of alkynes.	4
Aromatic compounds • Structure of benzene. • Naming aromatic compounds -Aromatic compounds in Health & medicine. • Substitution reactions of aromatic compound. • Properties of aromatic compounds. • Aromatic compound in nature.	4
Alcohols, Phenols, Ethers and Thiols • Structure and classification of alcohol. • Physical properties. • Preparing alcohols. • Oxidation of alcohols in living system. • Phenols. • Ethers. • Thiols.	4
Aldehydes & Ketones. • Introduction. • Naming of Aldehyde & Ketones. • Addition reactions of Aldehyde & Ketones: - Addition of Water.	5

• Physical properties. • Preparing Aldehyde & Ketones. • Tests for Aldehyde. • Condensation reaction in living systems. • Acidity of alpha – Hydrogens.	- Addition of Alcohol. - Addition of Ammonia & its derivatives (Schiff base); reduction of Aldehyde & Ketones. • Addition reaction of Aldehydes & Ketones in living systems.	

Organic Chemistry *Cont*…..

Lecture		Hours
Amines & Amides: • Classifying & naming Amines. • Physical properties. • Preparing Amines in living system. • Reactions of Amines. • Oxidative dealkylation of Amines.	• Heterocyclic Amines & Alkaloids. • Structures & names of Amides. • Amides in health & medicine. • Hydrolysis of Amides.	**5**
Carboxylic Acid & their Derivatives • Carboxylic Acids. • Naming of Carboxylic Acids. • Physical properties. • Preparation of Carboxylic Acids. • Acidity of Carboxylic Acids. • Carboxylic Acids in metabolism.	**Esters** • Preparation . • Reaction. • Naming of Esters. • Properties of Esters. • Preparation & Hydrolysis of Esters in living systems. • Carboxylic Acids Anhydrides • Phosphoric Acid & its derivatives.	**5**

Organic Chemistry: Practical

1. Determination of melting point (M.P.).
2. Recrystalization.
3. Sublimation.
4. Simple Distillation.
5. Fractional Distillation.
6. Extraction.
7. Caffien Extraction.
8. Preparation of Acetyl salicylic Acid “Aspirin”.
9. Esterification “Preperation of ethyl acetate”.
10. Separation of mixture of drugs by thin larger chromatography.
11. “CiS - Trans” Isomerism.
12. Preparation of Benzoic acid (Oxidation of the side chain).
13. Functional group analysis.
14. Soponification of estar.

Introduction in Histology (1)

Classification of tissues

1- Epithelial tissue

- Covering epithelia or Lining epithelia.
  - Simple
  - Stratified
  - Pseudostratified
  - Transitional.
- Glandular epithelia
  - Acini
  - Mucus glands
  - Serous glands

2- Connective tissue

- Cells (Fixed & migratory)
- Fibers (Collagen , Elastic & Reticular fibers)
- Ground substance (Loose & dense)
- Fat
- Cartilage (Hyaline , Fibrous & Elastic)
- Bone (Osteoblasts,osteocytes & osteoclasts , Woven bone & lamellar bone)

3- Muscular tissue :

-Smooth muscle.Histological unit)
- Skeletal muscle
- Cardiac muscle.

4- Nervous tissue :

Neurons structure , types ,glial cells .
Gray matter & white matter .
Peripheral nerves.

Routine histological methods.

Haematoxylin & eosin staining
Special stain, Immunohistochemistry.

Introduction in Physiology (1)

Week	The Lectures Title
1st	Fundamental cell physiology Human body composition
2nd	Body water balance in male and female a- Osmosis b- Diffusion c- Ficks low of diffusion, PH, buffers tonicity and plasma concentration.
3rd	The cell membrane, structure and the main functions. The different cell organelles
4th	Intracellular connection and molecular motors Structure and function of DNA and RNA
5th	Apoptosis and protein folding Quality of protein production by the cell
6th	Coats and vesicles transport Rafts and caveolae
7th	Na^+ -K^+ ATP ase function Oncotic pressures
8th	Intracellular communication by messenger transmition Receptors and neurotransmitters
9th	Intracellular Ca^{+2} regulation Calcium binding protein
10th	Cyclic AMP and ATP, growth factors Body homeostasis
11th	The excitable tissue, CNS and peripheral nerves structures and functions Arresting and action potential in axons
12th	The fluxes during the potentials Properties of mixed nerves
13th	Types of neuralgias Excitable tissues – the muscles, types and function
14th	Electrical characteristic of muscle fibers
15th	Energy sources and metabolism The synapses, excitatory and inhibitory synaptic potential propagation
16th	Functional anatomy and types of synapsis Neurotransmitters, types and functions.

Human Anatomy (1)

Upper Limb:

1- Introduction: Terminology, Anatomical position, Bones, Muscles, Blood vessels, venous system, 5 hours
2- Surface anatomy of the upper limb,1 hours
3- Pectoral region, 2 hours
4- Axilla & Brachial plexus, 3 hours
5- Scapular region, 2 hours
6- The arm, 1 hour
7- The forearm, Cubital fossa, 3 hours
8- Joints: Introduction, Classification, individual joints, 3 hours
9- The hand, 3 hours
10- Applied anatomy, 2 hours

Lower Limb:

1- Introduction to the lower limb, Bones, 2 hours
2- Front of the thigh & adductor compartment, 3 hours
3- Lumbosacral plexus, 1 hour
4- Gluteal region, 1 hour

5- Posterior aspect of the thigh & popliteal fossa, 2 hours
6- Posterior aspect of the leg, 2 hours
7- Anterior aspect of the leg, 1 hour
8- Joints of the lower limb, 2 hours
9- The foot, 2 hours
10- Applied anatomy, 1 hour

Human Anatomy (1): Practical

1. Introduction
2. Bones of the upper limb
3. Pectoral region
4. Scapular region "shoulder region", Arm (back)
5. Axilla, Arm (front)
6. Forearm (front)
7. Forearm (back), dorsum of hand
8. Hand (palm)
9. Bones of lower limb
10. Front of the thigh, adductor compartment
11. Gluteal region
12. Popliteal fossa+back of the thigh
13. Front of the leg and dorsum of the foot
14. Lateral , back of the leg
15. Sole of the foot, Knee joint

Scientific thinking

ITEMS	Hours	ITEMS	Hours
Definitions & Applications Science Scientific Thinking Justified Result	4	Central Components Empirical Evidence Logical Reasoning Skeptical Attitude	4
Scientific Research (Scientific Method) Data – Hypothesis – Law – Theory	4	Characters of Scientific Thinking Accumulation Arrangement Justification Comprehension Accuracy	4
Intellect Power Health Body Health Intellect	4	Scientific Thinking Obstacles Superstition Fame Submission Fanaticism Intellect Power Denial Unquilified Mass Media	4
Evidence Based Medicine (EBM) Clinician's Expertise Patient Values Recent Publications	4	A Project Related to Profession	4

English Language (1)

TextBook: - John and Liz Soars, ***New Headway English Course***
Pre- intermediate + workbook and 3 cassettes.
Unit One: - Getting to know you: Tenses, Questions, Using a bilingual dictionary, Social expressions1.
Unit Two: - The way we live: present tenses, have/have got, Collocation – daily life, Making conversation.
Unit Three:- It all went wrong: past tenses, Word formation, Time expressions.
Unit Four:- Let's go shopping: much/many, some/any, a few, a little, a lot of/ Articles / shopping / Prices.
Terminology: English for specific purposes.
Textbook:- Ethel and Martin Tiersky, ***The Language of Medicine.***
*Introduction
*Major systems of the body,
* Medical specialties,
* Human Anatomy,
*Disease: - Its symptoms and Treatments
Any relevant material in the above textbook.

English Language (2)

Textbook:- John and Liz Soars, New Headway English Course- Pre-intermediate. + Workbook and 3 cassettes.
Unit Five:- What do you want to do? Verb patterns 1 / Future forms/ Hot verbs / How do you feel?
Unit Six:- Tell me! What's it like? What …Like?/Comparatives & Superlatives/Synonyms & antonyms/Directions.
Unit Seven-: Famous Couples: Present perfect / for, since/ Adverbs, word pairs/ Short answers.

Unit Eight: - Do's and Don'ts, have (got) to/ should, must/ Words that go together/ At the doctor's.
Unit Nine:- Going Places / if / Hot verbs/ In a hotel.
Terminology:
Textbook:- Joan MacLean, ***English in Basic Medical Science.***

*The Compartments of the Body
*Sources of Energy.
*Gross Anatomy of the Trunk.
* Epithelial Tissue.
*The Heart.
* The Nervous System.

Second year: Semester (3) & (4)

Code	Course Title	Lecture hours	Laboratory hours	Credit hours	Page
MBIOC0201	**Medical Biochemistry (1)**	4	3	5	13
MBIOC0202	**Medical Biochemistry (2)**	4	3	5	14
HANAT0201	**Human Anatomy (2)**	4	3+3	6	15
HANAT0202	**Human Anatomy (3)**	4	3+3	6	16
FIZIO0201	**Physiology (2)**	4	3	5	16
FIZIO0202	**Physiology (3)**	4	3	5	17
HISTO0201	**Histology (2)**	2	3	3	18
HISTO0202	**Histology (3)**	2	3	3	19
LENGL0201	**English Language (3)**	3	0	3	19
COMPU0202	**Intro. to Computer Applications**	2	2	3	19

Medical Biochemistry (1)

Title	Short Notes		Hours
Introduction	Biochemistry and its Clinical importance		**1**
Carbohydrates	* Definition. * Classifying carbohydrates. * The three – Dimensional structure of Monosaccharide.	* The cycle structure of Monosaccharide. Mutarotation. * Reactions of Monosaccharide. * Disaccharide. * Polysaccharide.	**8**
Lipids	* Definition. * Fatty acids * Waxes. * Triacylglycerol (Triglycerides). * Phosphoglycerides. * Sphingolipids.	* Biological memberance. * Soaps. * Terpenes. * Steriods. * Steriods hormones. * Prostaglandirs.	**8**
Proteins	* Amino Acids. * Properties of α-Amino acids. * Reactions of Amio acids. * Peptide bonds.	* Primary, Secondary, Tertiary & Quaternary structures of proteins. *Denaturation of proteins.	**10**
Nucleic Acids	* Composition of Nucleic acids. * Structure of nucleosides and nucleotides. * Polynucleotide. * Structure of DNA. * Heredity and DNA replication.	* Transcription and RNA. * Protein synthesis. * Mutations. * Recombinant DNA and Genetic engineering.	**8**
Enzymes	* Enzymes as catalysts. * Naming and classifying enzymes. * Enzyme cofactors. * How enzymes catalyze reactions. * Lysozyme. * Enzyme inhibition.	* Control of enzyme activity. * Poisons. * Chemical compounds that fight infections diseases. * Diagnostic enzymology.	**8**

Vitamins	* a) Water soluble vitamins (folic acids, Vitamins C, B1, B2, B3, B6, & B12).	b) Fat soluble vitamins (vit. A, vit .D, vit. E, vit. K)	**8**
Biological Oxidation	* Introduction. * Definition. * Biological significance.	* Pathyway of electron transport. * Inhibitors of respiratory chain.	**5**
Digestion and absorption	* Digestion in mouth. * Stomach. * Duodenum.	* Bile and function of bile salts. * Absorption from Gastro intestinal tract. * Malabsorption.	**4**

Medical Biochemistry (2)

Title	Short Notes		Hours
Carbohydrates Metabolism	* Introduction. * Glycolytic pathway. * Conversion of pyruvatic to acetyl-coA. * TCA cycle. * Energy products from glucose metabolism.	* Pentose Phosphate pathway. * Galactose metabolism. * Glycogen synthesis. * Glycogenolysis. * Gluconeogenesis. * Glycogen storage diseases.	**12**
Amino acid metabolism	* Transamination. * Oxidative De-amination. * Urea cycle. * Enzymes deficiency in urea cycle. * Inborn errors of metabolism.	* Tyrosine metabolism. * Tryptophan metabolism. * Formation of specialized product from amino acids. * Amino uria.	**12**
Lipid metabolism	* Beta – oxidation. * Biosynthesis of fatty acids. * Ketone bodies. * Biosynthesis of triglycerides.	* Biosynthesis of cholesterol. * Lipoproteins. * Hyperlipidemia.	**8**
Chemistry of Hormones	* Introduction. * Mechanism of action. * Chemistry, functions, metabolism of thyroid hormones. * Parathyroid hormones. * Calcitonin.	* Insulin. * Glucagons. * Hormones of adrenal medulla. * Hormones of adrenal cortex. * G.T.T hormones. * Anterior and posterior pituitary hormones.	**10**
Cancer Chemistry	* Metabolic interplay in cancer.	* Pattern of imbalance in cancer cell metabolism.	**2**
Nutrition	* Caloric intake and energy requirements. * Respiratory and basal metabolic rate. * Nutrition disorder. * Kwashiorkor. * Marasmus.	* Obesity. * Rickets. * Osteomalacia. * Metabolic response to tranma. * Surgery and shock.	**6**
Renal function tests	* General urine examination. * Renal function tests.	* Acid – base balance.	**3**
Liver function tests	* Normal function tests related to liver diseases.		**2**
Immunoglobulin	* Structure. * Types.	* Importance. * Clinical significant.	**2**
C.S.F. Examination	* Test for Cerebro – spinal fluid examination.		**1**
Trace metals	* Copper. * Zinc.	* Iron metabolism.	**2**

Medical Biochemistry (1) & (2): Practical

Lab section			Hours
General Introductions - Collection and handling of specimen for Lab. Investigations.			**3**
Saliva (Different Exp. on saliva specimen)			**3**
Qualitative tests of sugars: a. Benedict's test.	c. Molisch test. d. Barfoed's test.	f. Bial's test. g. Osazon's test. Ect….	**6**

b. Fehling's test. e. Seliwanof's test.		
Hydrolysis of Disaccharides & Polysaccharides		**6**
Identification of unknown sugar		**3**
Hydrolysis of Fat		**3**
Lipid analysis * Solubility. * Emulsification in saturation.	*Grease spot test. *Estimation of Iodine or saponification number of fat.	**6**

Medical Biochemistry (1) & (2): Practical; *Cont…..*

Lab section		**Hours**
Determination of PH		**3**
Amino acids & proteins * Solubility. * Ninhydrine test.	* The xanthoproteic reaction. * The Rosenheim reaction. * Millon reactions.	**6**
Isolation of Lactose and casein from powdered milk		**3**
Blood. * Chemical composition. * Coagulation of serum protein.	* Separation of serum from the clot. * Blood hemolysis (train student on drawing blood specimens).	**6**
Bile, Bile salts, Bile pigment.		**3**
Urine Analysis:- * Physical & Chemical analysis.	* Normal constituents & Abnormal constituents microscopically exam. * Identification of Unknown.	**3**
Determination of serum Amylase		**3**
Estimation of blood glucose		**3**
Glucose Tolerance Test (GTT)		**6**
Determination of Lipase activity		**3**
Estimation of blood urea		**3**
Estimation of cholesterol		**3**
Estimation of serum total lipids		**3**
Estimation of plasma protein		**3**
Estimation of blood creatinine		**3**
Estimation of blood bilirubin		**3**
Estimation of blood uric acid		**3**
Estimation of blood calcium		**3**
Electrophoresis: (Separation of proteins & Amines acids).		**6**

Human Anatomy (2)

Head and Neck
1- Skull, 4 Hrs
2- Cervical spines, 1 Hr
3- Units of the neck, facial compartments & spaces, 1Hr
4- Triangles of the neck, 3 Hrs
5- Scalp & face, 2 Hrs
6- Parotid region & parotid gland, 1 Hr
7- Infratemporal fossa, 2 Hrs
8- Nose & paranasal sinuses, Pterygopalatine fossa, 1Hr
9- The oral region, 1 Hr
10- Orbit, 1 Hr
11- Cranial cavity, 2 Hrs
12- The pharynx, 1 Hr
13- The larynx, 1 Hr
14- The ear, 1 Hr
15- Lymphatic drainage of head & neck, TM-Joint, 1 Hr
16- Cranial nerves, 2 Hrs
Neuroanatomy

1- Vertebral canal & meninges, 1 Hr
2- Spinal cord, 1 Hr
3- Funiculi of the spinal cord, 3 Hrs
4- Medulla oblongata, 2 Hrs
5- Pons, 1 Hr
6- Midbrain, 2 Hrs
7- Cerebellum, 2 Hrs
8- Diencephalon, 3 Hrs
9- Basal ganglia, 1 Hr
10- Limbic lobe & limbic system, 1 Hr
11- Cerebral cortex & blood supply of the brain, 2 Hrs
12- Laterality of cerebral hemipheres, cerebral dominance, ventricles of the brain, 1 Hr

Human Anatomy (2): Practical

1. Skull , cervical vertebrae, face bone
2. Scalp, superficial and deep dissection of the face
3. Neck/ posterior triangle
4. Anterior triangle of the neck
5. The deep dissection of the neck , thyroid gland
6. Parotid region infratemporal fossa
7. Submandibular region
8. Mouth and pharynx, cavity of nose
9. Larynx, tongue
10. Orbit
11. Organ of hearing
12. Cranial cavity, structures seen after removal of brain, meninges
13. Base of brain, hindbrain, cerebellum, fourth ventricle
14. Midbrain, cerebrum (lateral, medial surface)
15. Lateral ventricle, insula, deep nuclei of the telencephalon

Human Anatomy (3)

Abdomen
1- Surface anatomical landmarks, 1 hour
2- Skin, 2 hours
3- Muscles of anterior abdominal wall, muscles of posterior abdominal wall, inguinal canal & inguinal hernia, External genitalia, 3 hours
4- Fascial lining of abdomen & pelvis, peritoneum, peritoneal cavity, 2 hours
5- Abdominal organs, 5 hours
6- Liver & biliary system, portal system, porto-systemic anastomoses, 2 hours

Pelvis
1- Skeleton, pelvic inlet, outlet, diameters and measurements, 1 hour
2- Pelvic fascia, peritoneum & pouches, pelvic walls and floor, 2 hours
3- Rectum, anal canal, bladder, prostate & urethra, 3 hours
4- Uterus, ovary, vagina and pelvic ureter, 3 hours
5- Vessels, nerves & lymphatics of the pelvis, 1 hour

Thorax
1- Thoracic wall as part of the body wall, 1 hour
2- Osteology of the chest wall, 1 hour
3- Intercostal spaces, 1 hour
4- Diaphragm, 1 hour
5- Chest wall & diaphragm during respiration, 1 hour
6- Divisions of the mediastinum, 1 hour
7- The superior mediastinum, 2 hours
8- Heart & pericardium, 1 hour
9- Chambers of the heart, 2 hours
10- Blood supply, nerves and plexuses of the heart, 1 hour
11- Pleurae and lungs, 1 hour
12- Posterior mediastinum, 2 hours

Human Anatomy (3): Practical

1. Thorax, bones, walls of the thorax
2. Cavity of thorax
3. Mediastinum
4. Lungs
5. Heart
6. Abdomen, bones, anterior abdomen wall, Inguinal canal
7. Interior of anterior abdominal wall, peritoneal cavity, omental bursa
8. Spleen, Celiac trunk, stomach
9. Mesentery and mesenteric arteries, Small and Large intestine
10. Liver, gall-bladder, kidney and suprarenal gland
11. Diaphragm, posterior abdominal wall
12. Pelvis, introduction, bones, external genitals
13. Dissection of perineum, uterus + ovary
14. Urinary bladder + prostate + urethra, rectum, anal canal
15. Vessels and nerves of the lesser pelvis

Physiology (2)

Autonomic Nervous System:
- Introduction and definition of the autonomic reflex action and its comparison to somatic reflex
- Functional anatomy: sympathetic and parasympathetic nervous system
- The concept of membrane receptor
- Chemical transmission in the autonomic nervous system
- Functions of the sympathetic and parasympatrhetic nervous system

Physiology (2); *Cont…..*

Blood:
- Composition and function
- The red blood cells
- Hemoglobin and hemoglobin varieties
- Iron metabolism, anemia
- Destruction of red blood cells
- The white blood cells morphology and classification
- Specific function of the different varieties
- The immune system, allergy
- The platelets
- Hemostasis and blood coagulation
- Blood groups and blood transfusion
- The fibrinolytic activity

Respiratory Physiology:
- Functional anatomy
- Lung volumes and capacities
- Mechanics of breathing muscles
- Pressure changes during respiration
- Expansion of lungs, compliance
- Airway resistance
- Pulmonary circulation
- Resistance of pulmonary blood vessels
- Alveolar ventilation
- Distribution of ventilation and perfusion
- Exchange of gases and diffusion capacity
- Transport of oxygen
- Transport of carbon dioxide
- Control of ventilation
- Hypoxia, hypocapnia and hypercapnia
- Oxygen theory
- Effect of exercise
- Artificial respiration
- Pulmonary function tests

Cardiovascular System:
- Functional anatomy
- The myocardium
- The electrocardiography
- Cardiac output
- The cardiac cycle and heart sounds
- Properties of the vascular system
- The veins and their functions
- Hypotension and shock
- Hypotension
- Cardiac hypertrophy

Physiology (2): Practical

1- Introduction
2- RBC count
3- Hb estimation (Sahli method)
4- PVC estimation
5- WBC count
6- Plasma / serum & Preparation of blood film.
7- WBC differentiation
8- Midterm Examination.
9- Blood Indices.
10- Bleeding time & Clotting time.
11- ESR
12- Blood Grouping
13- Blood Banking
14- Triple Response & Capillary Fragility test
15- General Review
16- Final Examination

Physiology (3)

Central Nervous System:
- Introduction and definition, the stimulus and the adequate stimulus, sensory receptors
- Classification of sensory receptors, electrical and ionic events in receptor potential
- The sensory unit, the receptive and cortical representation
- Coding of sensory information, the sensory pathways
- Proprioceptors role in reflex and voluntary muscular contraction. The stretch reflex
- The Golgi tendon organ and the inverse stretch
- Gamma efferent activity and muscle tone effect
- Superficial, deep and visceral sensation
- Touch, pressure and sense vibration
- Cold, warmth sensation and pain sensation
- Referred pain
- The motor pathways
- The pyramidal system
- The extra-pyramidal system
- The cerebellum
- The hypothalamus
- The limbic system
- Brain stem and reticular formation
- Sleep physiology
- Cerebral control function
- Motor and sensory functions
- Conditional reflexes
- EEG
- Speech
- Memory

Special senses:

Hearing and equilibrium:
- Functional anatomy
- Properties of hearing system
- Theory of hearing
- Vestibular function

Vision:
- Functional anatomy
- Errors of reflection, myopia, hypermetropia and astigmatism
- Retina, visual fields pathways
- Visual accommodation and visual reflexes, visual acuity
- Color vision, cerebral cortical function

Smell and Taste:
- Smell receptors and pathways
- Physiology of olfaction
- Taste receptor organs & pathways
- Taste

Physiology (3); *Cont…..*

Endocrine System:
- Functional anatomy
- The pituitary and hypothalamus
- Thyroid and parathyroid gland
- The adrenal gland

Reproductive Physiology:
- Functional anatomy
- The testes
- The ovary
- Reproduction
- Pregnancy
- Lactation

Gastrointestinal Tract:
- Functional anatomy
- GIT hormones
- Saliva, gastric and enteric secretion
- Pancreas
- Bile
- Large intestine
- Absorption
- Regulation
- Motility

Renal Physiology:
- Functional anatomy
- Autoregulation and renal blood
- Glomerular function
- Glomerular filtration rate
- Reabsorption and secretion
- Water homeostasis
- Excessive water intake
- Effect of water loss
- Regulation of tubular function
- Diuretics

Acid-Base Balance:
- Hydrogen ion and pH
- Acids and bases pH
- Body fluid acid – base balance
- Respiratory acid – base balance
- Renal acid – base balance

Physiology (3): Practical

1- General Physical Examination.
2- Blood Pressure
3- Body Tempreature & Respiratory Rate
4- Pulse Rate
5- Special Sense (Tuning Fork Test & Visual Acuity)
6- I.M & I.V Injection
7- Cardiac Efficiency test
8- Midterm Examination
9- CNS & Reflexes Examination
10- Respiratory Examination
11- Cardiovascular Examination
12- ESG
13- ECG
14- Nutritional assessment & BMI
15- Review
16- Final Examination.

Histology (2)

- **Circulatory system :**
  Blood vessels (veins, arteries, capillaries)
  Heart
- **Digestive system**
  Esophagus, stomach ,small intestine , appendix, large intestine ,anal canal.
  Glands: Salivary glands (parotids , submandibular & sublingual)
  Liver, gallbladder, & pancreas.
- **Respiratory system**
  Trachea, bronchus ,bronchioles Lungs.
- **Lymphoid tissue :**
  Lymph nodes ,spleen ,thymus , palatine tonsils.
- **Bone marrow and blood**
  Bone marrow biopsy , bone marrow smear. Blood film.
- **Central Nervous System (CNS):**
  Types of neurons, spinal cord, cerebrum, cerebellum, peripheral nerve.

Histology (2): Practical

Circulatory system: Slides showing sections stained with Haematoxylin & Eosin stain & Elastic Van Geison stain for elastic artery , muscular artery & arteriole showing the three layers structure , including intima ,media & advantitia . Vein , venule .
Heart showing endocardium , cardiac muscle cells ,Pukinji fibers, pericardium, vaso vasorum.
Digestive system: Slides showing posterior third of the tongue& circumvallate papilla are shown to students.
General structure of the digestive tract ,including mucosa ,submucosa ,muscular coat & advantitia.

Esophagus , stomach (gastric glands , parietal & chief cells)
Small intestine (duodenum & jejunum) Large intestine ,anal canal & appendix .
Associated glands , parotid , sublingual ,liver , gall bladder, pancreas (endocrine & exocrine)
Respiratory system: Trachea , bronchus , bronchioles & lung.
Lymphoid Tissue: Lymph node , thymus ,palatine tonsils ,spleen (red pulp & white pulp)
Bone marrow & Blood : Bone marrow biopsy & smear, to show erythrocytes series & granulocytes series.
Blood film , to show erythrocytes , white blood cells & thrombocytes.
Central Nervous System :Types of neurons ,white matter , gray matter ,spinal cord , cerebrum & cerebellum.

Histology (3)

- **Endocrine system**
  Pituitary , pineal ,thyroid , parathyroid glands
  Endocrine pancreas ,adrenal glands.
- **Male reproductive system :**
  Testis , epididymis , vas deferens , seminal vesicle , prostate penis.
- **Female reproductive system:**
  Vagina , cervix (PAP smear) , uterus ,endometrium , (proliferative , luteal phase ,menstrual) ovary.
- **Renal system:** Kidney, nephron, tubules , bladder.
- **Skin:** Epidermis , dermis ,accessory glands.
- **Eye.**

Histology (3): Practical

Endocrine System :
Pituitary gland showing anterior lobe & posterior lobe.
Thyroid gland , parathyroid glands , pineal gland.
Adrenal gland showing cortex & medulla .
Endocrine part of the pancreas.
Male Reproductive System : Testis ,epididymis , vas deferens ,penis , prostate & seminal vesicle .
Female Reproductive system : Ovary , fallopian tube, endometrium (phases) , cervix , vagina (PAP-smear)
Mammary gland (resting & lactating breast)
Urinary tract : Kidney (nephron and renal tubules)
Skin & epidermis : glands & hair follicles.
Eye : Sclera , layers of the retina .

English Language (3)

Textbook:- John and Liz Soars, ***New Headway English Course,*** Pre- intermediate + Workbook and 3 cassettes.
Unit Ten:- Scared to death: Verb patterns 2 / manage to, used to/ -ed/
- ing adjectives/ Exclamations.
Unit Eleven:- Things that changed the world:
Passives / Verbs and nouns that go together/ Notices.
Unit Twelve:- Dreams and reality: Second conditional / might/ Phrasal verbs/ Social expressions 2.
Unit Thirteen:- Earning a living:
Present Perfect Continuous Word formation Adverbs Telephoning.
Unit Fourteen: - Love you and leave you: Past Perfect Reported statements. Saying goodbye.
Third Semester: Terminology.
Textbook: Joan MacLean, ***English in Basic Medical Science***.
*Common Diseases and Ailmente Physicians and Medical Specialties.
* Careers in Health Care. First Aid in Medical Emergencies.

Introduction to Computer Applications

Week	Titles		
1-3	**Computer & you** 1- Introduction	2- Computer Fundamentals 3- Types of Computers	4- Computer, society, & you
4-6	**Internal & the World Wide Web** 1- Introduction 2- How the Internet Work.	3- Accessing the Internet: Going online. 4- The Internet & the Web.	5- Finding Information on the Web. 6- Exploring Internet Services.
7-8	**System Software** 1- Introduction.	2- The Operating System. 3- Explore Popular Operating Sys.	4- System Utilities: Housekeeping Tools.
9-11	**Application Software: Tools for Productivity** 1- Introduction	4- Standalone Programs, Integrated Programs & Software Suites.	6- Software Licenses & Registration. 7- Installing & Managing

	2- General Purpose Applications. 3- Tailor – Made Applications.	5- System Requirements & Software Versions.	Application Software.
12-14	**Inside the System Unit** 1- Introduction 2- How Computers Represent Data	3- Introducing the System Unit. 4- Inside the System Unit.	5- What's on the Motherboard? 6- What's on the Outside of the Box?
15-16	**Input / Output & Storage** 1- Introduction. 2- Input Devices: Giving	Commands 3- Output Devices: Engaging our Senses.	4- Storage: Holding Data for Future Use

Third year: Semester (5) & (6)

Code	Course Title	Lecture hours	Laboratory hours	Credit hours	Page
PATHO0301	**Pathology (1)**	**4**	**3+3**	**6**	20
PATHO0302	**Pathology (2)**	**4**	**3+3**	**6**	21
PHARM0301	**Pharmacology (1)**	**4**	**3**	**5**	23
PHARM0302	**Pharmacology (2)**	**4**	**3**	**5**	23
MICRO0301	**Microbiology (1)**	**3**	**3**	**4**	24
MICRO0302	**Microbiology (2)**	**4**	**3**	**5**	24
PARAS0301	**Parasitology (l)**	**2**	**3**	**3**	25
PARAS0302	**Parasitology (2)**	**2**	**3**	**3**	26
COMPH0301	**Comm. Med. (1) Public health (1)**	**2**	**0**	**2**	27
COMPH0302	**Comm. Med. (2) Public health (2)**	**1**	**0**	**1**	27
MSTAT0301	**Medical Statistics (1)**	**1**	**0**	**1**	28
MSTAT0302	**Medical statistics (2)**	**1**	**0**	**1**	28
IMMUN0301	**Immunology**	**2**	**0**	**2**	28
INTER0302	**Internal Medicine (1)**	**1**	**0**	**1**	28
SURGR0302	**General Surgery (1)**	**1**	**0**	**1**	28

Pathology (1)

Introduction to pathology (2 hours)
Definition of diseases,
Etiology,& mechanisms.
Effects of diseases:
Structural changes:
Gross & microscopic features.
Functional
Cell injury (reversible & irreversible**) (4 hours)**
mechanisms ,types of necrosis ,apoptosis.
Disoreders of Deposits
Mechanisms , lipids , proteins,pigments , calcifications, amyloidosis .
Cellular adaptations
Hyperplasia ,hypertrophy ,atrophy , metaplasia .
Inflammation (4 hours)
- Acute inflammation
(Definitions , types & features of inflammation
Cardinal signs , vascular and cellular events ,
Chemical mediators , their origin & effects
Fate of acute inflammation)
-Chronic & granulomatous inflammations
(Definition , nature & causes , morphology of chronic inflammation & granulomas.
Types & Functions of inflammatory cells)
Healing & repair (2 hours)
Attempts of healing and repair, types of cells
(labile ,stable & permanent).
Healing of skin wounds (primary & secondary union) & bone fractures.
Factors influencing healing .
Infectious diseases (6 hours)
Definition of infection , causes , natural human defenses .
The human reactions to micro-organisms (inflammation , phagocytosis and immune responses)

Viral infections :Effects of viruses , roles of entry. Host responses, types of viral infections ,Herpes, influenza .

Bacterial infections : Types ,effects & complications

Common bacterial infections.

Tuberculosis ,Leprosy ,Syphilis ,Venereal diseases.

Diphtheria , Typhoid ,Cholera, Bacillary dysentery .

Fungal infections:

Common types ,Aspergillosis ,Candidiasis .

Histoplasmosis ,Actinomycosis.

Parasitic infections

Malaria ,Leishmania , Amoebiasis .

Helmenthic infestations as Hydatid cysts ,Bilhariziasis

Apportunistic infections

Pneumocystic carinii infection.

Pathology (1): *Cont….*

Immunopathology (6 hours)

Revision of immune system

HLA – system ,hypersensitivity reactions

Graft rejection.

Auto-immune diseases, immunodeficiencies And AIDS.

Disorders of Genetics (2 hours)

Types of mutations , Mandelian mutation diseases , Numerical mutations diseases .

Disorders of Haemodynamics (4 hours)

Odema ,pathogenesis .Examples ascitis ,led edema ,anasarca.

Shock : types & pathogenesis.

congestion. Structural changes in various organs.

Thrombosis ,definition , types ,appearances ,cardiac thrombi, arterial & venous thrombi .

Predisposing factors . complications.

Embolism types , thrombo-embolism , septic emboli , air embolism

Ischemia & infarction : Definition ,causes, types

Gross appearances & microscopic appearances

Heart ,lungs ,liver kidneys ,intestine etc.

Embolism : Definition .Types of emboli .

Effects of embolism.

Oedema : Definition,causes ,morphology.

Shock : Definition , types& causes of shock

Neoplasia & cellular adaptations (6 hours)

(hyperplasia & dysplasia)

Definitions .Benign & malignant tumors.

General features & behavior .

Pre-invasive malignancy: dysplasia ,CIN

Tumor predisposing factors

Hereditary & familial cancers

Carcinogens .Irradiation ,viruses ,chemical carcinogens

Multi-step theory of neoplasia.

Modes of spread of cancers.

Tumor markers

Effects of tumors

Staging & grading of cancers.

Pathology (1): Practical

Week	Subject
1	Introduction to histopathological procedures & sample preparation.
2	Methods for proper pathological description (gross & microscopical)
3	Reversible cell injury, fat necrosis , fatty liver.
4	Irreversible cell injury (Tissue necrosis) apoptosis , liquifactive caseous necrosis, gangrene, arterial calcification , amyloidosis.
5	Acute inflammation ,acute appendicitis , Allergic nasal polyp
6	Chronic inflammation ,chronic Cholecystitis , granulomatous reaction chronic abscess.
7	Healing & repair Granulation tissue , fibrosis
8	Infectious diseases Hydatid cyst
9	Immunopathology Hashimoto's disease
10	Neoplasia (Benign tumors): Lipoma ,Leiomyoma , squamous cell, papilloma, thyroid follicular adenoma.
11	Neoplasia (Malignant tumors): Squamous cell carcinoma, Colonic Adenocarcinoma, Leiomyosarcoma. Oat cell carcinoma
12	Haemodynamic disorders: Pulmonary edema ,thrombosis

Pathology (2)

Cardiovascular system: 6 hours

Blood vessels:

Atherosclerosis , aneurysms & vascular tumors

Heart :

Cardiac failure .Ischemic heart disease

Angina , Myocardial infarction.

Rheumatic fever

Infective carditis

Congenital heart diseases

Respiratory system: 6 hours

Nose, Nasopharynx , larynx , lung
Infections & Tumors
Pneumonia , obstructive & restrictive airways diseases
Pneumoconiosis. Bronchogenic carcinoma.

Gastro- intestinal tract: 6 hours

Esophagus
Congenital anomalies
Esophagitis, infections , reflux esophagitis
Barrette's esophagus
Tumors

Stomach
Congenital anomalies
Gastritis
Peptic ulcer
Tumors

Pathology (2): *Cont….*

Small intestine
Congenital anomalies
Enteritis , typhoid fever , Tuberculosis
Mal-absorption syndrome
Celiac disease , tropical sprue & Whipple's disease
Crohn's disease
Tumors

Large intestine
Congenital anomalies
Infective colitis
Ulcerative colitis
Tumors

Liver: 4 hours
Liver failure , portal hypertension
Hepatitis : Viral ,Hepatitis A ,B & C
Drug induced
Auto-immune
Congenital (neonatal) jaundice
Hepatocellular carcinoma

Gall Bladder
Acute & chronic cholecystitis
Cholelithiasis
Tumors

Pancreas
Acute & chronic pancreatitis
Tumours.

Endocrine system: 2hrs.

Central nervous system: 2hrs

Dermatopathology (skin): 2hrs

Musculoskeletal system: 2hrs

Lymphoid system: 2 hours
Reactive lymphadenitis .Lymphomas (Hodgkin's And Non-Hodgkin's) classifications of lymphomas.

Haematology: 6 hours
Review of normal haematopoiesis
Normal blood counts & indices
Normal & abnormal bone marrow
Diseases of erythrocytes, anemia ,classifications And morphology
Diseases of white blood cells
Leucopenia & leucocytosis
Leukemias classifications & morphology
Polycythemia,causes & morphology
Thrombocytopenia

Male Genital System: 4 hours
Prostate & Testes, prostatitis, Benign prostatic Hyperplasia .Carcinoma of the prostate
Orchitis , cryptorchidism , infertility
Testicular tumors.

Urinary System: 6 hours
(Bladder & Kidney)
Congenital anomalies , cystitis ,carcinoma of the bladder
Renal failure polycystic kidney , urinary tract infections
Urolithiasis , obstructive uropathies
Pyelonephritis , glomerulonephritis , renal tumors.

Female Genital Tract: 4 hours
(Vagina, uterine cervix & corpus)
Infections , vaginitis , cervicitis & endometritis
CIN , cercical tumors.
Review of normal functioning endometrium
Endometrial hyperplasia.Endometrial carcinoma
Adenomyosis & endometriosis
Uterine tumors
Salpingitis & oopheritis
Ovarian cysts and tumors.

Breast: 2 hours
Review of normal breast histology
Congenital anomalies ,infections , breast abscesses , Fat necrosis.
Cystic mastopathy , duct ectasia ,fibroadenosis.
Tumors.

Pathology (2): Practical by weeks

1 **Cardio-vascular system**
Atherosclerosis
Early myocardial infarction (2 days)
Late myocardial infarction (6 weeks)

2 **Blood vessels**
Cavernous haemangioma
Coronary atherosclerosis

3 **Respiratory tract**
Lobar pneumonia
Bronchiectases
Emphysema.

4 **Squamous cell carcinoma of the bronchus**
Adenocarcinoma(lung)
Oat cell carcinoma

5 **Gastro-intestinal tract**
Chronic atrophic gastritis
Peptic ulcer
Gastric adenocarcinoma

6 **Crohn's disease**
Ulcerative colitis
Adenomatous polyp
Adenocarcinoma of the colon
Carcinoid tumor

7 **Diseases of the liver**
Acute viral hepatitis
Chronic active hepatitis
Liver cirrhosis
Hepatocellular carcinoma

8 **Diseases of lymphoid tissue**
Reactive lymphadenitis
Non-Hodgkin's lymphoma
Hodgkin's lymphoma

9 **Diseases of the Blood**
Iron deficiency anemia
Sickle cell anemia
Thalassemia

10 **Chronic myeloid leukemia**
Acute myeloid leukemia

Chronic lymphocytic leukemia.
11 Diseases of Male Genital tract
Benign prostatic hyperplasia
Testicular seminoma
Germ cell tumor
12 Diseases of kidney & bladder
Chronic pyelonephritis
Chronic glomerulonephritis
Renal cell carcinoma
13 Diseases of Female genital tract
CIN ,cervical squamous cell carcinoma
Endometrial hyperplasia
Endometrial adenocarcinoma
Ovarian cysts
14 Diseases of the breast
Fibroadenoma
Denocarcinoma of the breast
15 Endocrine and lymphoid system
16 Central nervous system and skin

Pharmacology (1)

Basic principles.
* Definitions, History of Pharmacology, Pharmacoepidemiology, Pharmcoeconomics.
* Pharmacology & genetics (Pharmacogenomics, pharmacogenetics), Nature of Drugs.

Pharmacokinetic
* Absorption, Bioavailability.
* Binding Drugs to Plasma Proteins.
* Distribution
* Apparent volume of distribution
* Drug Metabolism (Drug Biotransformation)
* Elimination: (Zero order elimination rate, First Order Elimination rate).
* Renal elimination of a drug: Glomerular filtration, Proximal tubular secretion, Distal tubular reabsorption).

Pharmacodynamics
* Ion Channels
* Enzyme linked
* G- protein
* Nuclear receptors
* Agonists & antagonists

Pharmacology of Autonomic nervous system
* Introduction to autonomic nervous system Drugs
* Cholinergic Agonists
* Cholinergic Antagonists
* Adrenergic Agonists

Pharmacology (1): Practical

1. Routes of Drug Administration
2. Dosage Forms
3. Handling the Animals+ Dose Calculation
4. CNS Stimulants and Depressants
5. Drug Metabolism….1 (Hepatic enzyme Induction)
6. Drug Metabolism….2 (Hepatic enzyme Induction)
7. Effects of Cholinergic Agonists and Antagonists on Glandular Secretions
8. Drug Antagonism (Morphine, Nalorphine, Naloxone)
9. Local Anesthesia
10. General Anesthesia
11. Insulin Hypoglycemic Shock
12. Testing Analgesics….1 After Thermal Stimulus
13. Testing Analgesics….2 After Chemical Stimulus
14. Calculation of Pharmacokinetic Parameters (t1/2, Vd, Css,…etc)

Pharmacology (2)

* Introduction to the Pharmacology of CNS Drugs
* Sedative – Hypnotic Drugs
* Skeletal Muscle Relaxants
* Pharmacologic Management of Parkinsonism & other Movement Disorders
* Antidepressant Agents
* Hypothalamic & pituitary hormones
* Thyroid & antithyroid drugs.
* Adrenocorticosteroids & adrenocortical antagonists
* The gonadal hormones & inhibitors
* Agents that affect bone mineral homeostasis
* Pancreatic hormones antidiabetic drugs
* Chemotherapeutic drugs
* Introduction to antimicrobial agents
* Beta – lactam & other cell wall inhibitors: Penicillins, Cephalosporins, other beta – lactam drugs
* Tetracyclines, macrolides, clindamycin, chloramphenicol, & Streptogramins.
* Aminoglycosides, spectinomycin, Sulfonamides, Trimethoprim, & quinolones.
* Antifungal agents, Antiviral agents
* Antiprotozoal drugs, Anthelmintic drugs & Miscellaneous Antimicrobial agents; disinfectants, antiseptics, & sterilants.

Pharmacology (2): Practical

1. Autonomic Drugs affecting the Rabbit's Eyes
2. Autonomic Drugs affecting Human's Eyes (Computer simulated Dry LAB)
3. Horner's Syndrome (Computer simulated Dry LAB)
4. Drugs affecting the CVS of the anesthetized cat
5. Drugs affecting the Skeletal and smooth muscles of the anesthetized cat
6. Drug affecting the Guinea Pig ileum motility (Dry LAB)

7. Rat Phrenic nerve and diaphragm preparation (Dry LAB)
8. Effects of Smoking on Human Blood Pressure and Pulse Rate
9. Effects of oral and sublingual GTN on Human BP and Pulse Rate
10. Drug Development
11. Prescription writing….1
12. Prescription writing….2
13. Anticoagulants

Microbiology (1)

Lecture	Hrs	Lecture	Hrs
Introduction (Microbial world)	1	Pathogenesis of bacterial infection .	2
Bacterial cell structure .	2	Normal microbial flora of the human body	1
Classification of bacteria .	1	**SYSTEMATIC BACTERIOLOGY**	
Growth, survival and death of microorganisms.	2	Staphylococci.	2
Cultivation of microorganisms and their nutritional requirements .	2	Streptococci and pneumococci .	3
Microbial metabolism.	3	Neisseriae (Neisseria gonorrhoeae ,Neisseria meningitidis and other neisseriae)	2
Microbial genetics .	4	Spore-forming Gram-positive bacilli (Bacillus and Clostridium species).	3
Antimicrobial chemotherapy .	2		

Microbiology (1): Practical

1. Safety procedures and precautions.
2. The care and use of the microscope.
3. Preliminary routine before undertaking all practical work.
4. Examination of unstained preparations of bacteria, including the motility of bacteria by the hanging drop method preparation.
5. Procedure for preparing a bacterial film prior to staining.
6. Systematic examination of bacteria.
   - Description of the microscopic morphology of stained and unstained bacteria, including: shape, axis, size, sides, arrangement, irregular forms, motility, endospores, capsules….etc.
7. Staining of bacteria: methods, principles and mechanisms.
   - Simple staining methods.
   - Differential staining methods: *Gram's method.
   - *Acid-Fast staining method (Ziehl-Neelsen).
8. Negative staining for the demonstration of capsule in certain
   - Microorganisms, e.g. *Klebsiella pneumoniae*.
9. Spore staining of Bacillus subtilis by modified Ziehl-Neelsen method.
10. The cultural examination of specimens.
    - Method of inoculation of culture media for obtaining single or isolated colonies for further examinations.
    - Method of inoculation and transfer from solid media to broth and vice versa.
11. Study of bacterial colony appearance.
12. Demonstration of various types of culture media; including: simple, enriched, differential and selective media.
13. Study of the principles and methods of different procedures of sterilization and disinfection applied in medical practice and in microbiology laboratories.

Microbiology (2)

Lecture	Hrs	Lecture	Hrs
Non-Spore-forming Gram-positive bacilli:	2	Haemophilus ,Bordetella and Brucella .	3

Corynebacterium,Listeria,Erysipelothrix, Actinomycetes and related pathogens.		Yersinia ,Fancisella and Pasteurella .	**2**
		Legionellae .	**1**
Enteric Gram-negative rods (Enterobacteriaceae), Diseases caused by Enterobacteriaceae other than Salmonella and Shigella .	**4**	Mycobacteria .	**2**
		Spirochaetes and other spiral microorganisms: Treponema ,Borrelia ,Leptospira……	**2**
Pseudomonads ,Acinetobacters and uncommon Gram-negative bacteria .	**1**	Mycoplasmas and cell-wall defective bacteria .	**1**
		Rickettsiae and Rickettsial diseases .	**1**
Vibrios ,Compylobacters , Helicobacter and associated bacteria .	**3**	Chlamydiae	**1**
		Medical Mycology.	**4**

Virology

General Virology		*Systemic Virology*	
Lecture	**Hrs**	**Lecture**	**Hrs**
Introduction	**1**	Parvoviruses	**1**
General properties of viruses	**1**	Adenoviruses	**1**
Purification of viruses	**1**	Herpesviruses	**5**
Inactivation of viruses (Reaction to physical & chemical agents)	**1**	Poxviruses	**1**
		Hepatitis viruses	**2**
Terms & definitions	**1**	Picornaviruses (Enteroviruses & Rhinovirus Groups)	**3**
Viral replication	**1**		
Pathogenesis of viral infection	**1**	Reoviruses , Rotaviruses & Calciviruses	**2**
Structure of viruses	**1**	Arthropode Borne & Rodent Borne Viral diseases	**3**
Classification of viruses	**1**		
Diagnosis of viral infection	**1**	Orthomyxoviruses (Influenza viruses)	**2**
Cultivation of viruses	**1**	Paramyxoviruses	**4**
Identification of Viruses	**1**	Rubella viruses	**1**
Antiviral Chemotherapy	**1**		
Viral vaccines	**1**		

Microbiology (2): Practical

1) Demonstrations of Gram-stained smears of different Gram-positive and Gram-negative bacteria obtained from pure cultures and various clinical specimens.
2) Determination of antimicrobial susceptibility testing by the disc diffusion method (Bauer-Kirby).
3) Determination of the minimal inhibitory concentration (MIC) and the minimal bactericidal concentration (MBC) of some antimicrobial agents.
4) Study of some metabolic activities of bacteria, e.g. production of indole and hydrogen sulphide. Also, fermentation of carbohydrates.
5) Activities of bacterial enzymes, e.g. urease and catalase.
6) Study of the main diagnostic characteristics of certain pathogenic organisms by using special enriched, differential and selective media (e.g. blood agar, MacConkey's agar, E.M.B. agar, S.S. agar, tetrathionate broth…….etc.) with some other additional tests:
   Organisms: Staphylococci, streptococci, pneumococci, neisseriae, corynebacteria, mycobacteria, aerobic Gram-positive bacilli, clostridia, coliforms,salmonellae. Shigellae, Proteus, Pseudomonas, vibrios, Haemophilus, Bordetella and others.
7) Some serological tests for the identification of certain infections and determination of antibody titers, e.g. Widal test, ASOT, TPHA,VDRL…etc.
8) Examination of unknown cultures.
9) Demonstration of some fungi of medical importance.
10) Microbiological examinations of various clinical specimens collected from normal individuals and from patients with different infections for the identification of micro organisms. Also, to determine their susceptibility to various antimicrobial agents. Such specimens include: throat swabs, ear swabs, pus swabs, rectal swabs, urine, sputum, faecal material….etc.

Parasitology (l)

Lecture	**Hrs**	**Lecture**	**Hrs**

Introduction	**2**	Leishmania	**3**
Medical Protozoology		Trypanosoma	**2**
Introduction	**2**	Balantidium coli	**1**
Entamoeba histolytica	**2**	Malaria & Plasmodium	**5**
E. coli; E. gingivalis; E. hartamanni; Endolimax nana; Iodamoeba buetschlii	**2**	Sarcocystis; Isospora; Cryptosporidium muris; Blastocystis hominis; Pneumocystis carinii	**1**
Giardia lamblia	**1**	Toxoplasma gondii	**2**
Trichomonas vaginalis T. tenax T. hominis Dientamoeba fragilis	**2**		

Parasitology (l): Practical

Student should study & draw all the morphology & Characteristic features for each parasite & its stages mentioned in this syllabus

Week	Lab. title	Week	Lab. title
1	Entamoeba histolytica Trophozoite & cyst	**5**	Leishmania amastigote , promestigote
2	E. coli tropho & cyst E. hartmanni tropho & cyst Endolimax nana tropho & cyst		Trypanosoma Epimastigote, Trypomastigote
		6	T.cruzi
3	Lodamoeba buetschlii tropho & cyst		Balantidium coli
	Giardia lamblia tropho & cyst	**7**	Plasmodium vivax ring stage, strophe, schizont, macro & microgametocyte & exoerythrocytic stage
4	Trichomonas vaginalis tropho		
	T. hominis tropho		
	T. vaginalis tropho		P.malaria ring stage, tropho, schizont, macro & microgametocyte
	Dientamoeba fragilis tropho	**8**	
9	P. facliparum: ring stage, tropho, schizont, macro & microgametocyte.	**11**	Sarcocystis Isospora, cryptosporidium muris Blastocystis hominis Pneumocystis carninii
	P. ovale: ring stage, tropho, schizont, macro & microgametocyte		
10	Toxoplasma gondii: tropho & encyst stage	**12**	General Stool Examination & concentration methods

Parasitology (2)

Lecture	Hrs	Lecture	Hrs
Introduction to Helminths .	**4**	Nematodes	**9**
Introduction to Trematodes		Introduction to Nematodes	
Fasciola hepatica		*Ascaris lumbricodes*	
Heterophyes heterophyes		*Trichuris trichiura*	
Clonorchis sinensis		*Entrobius vermicularis*	
Paragonimus westermani		*Trichinella spiralis*	
Blood Flukes or Schistosomes	**3**	*Ancylostoma duodenale*	
Schistosoma haematobium		*Necator americanus*	
Schistosoma mansoni		*Trichostrongylus colubriformis*	
Schistosoma japonicum		*Strongyloides stercoralis*	
Cestodes	**5**	Cutaneous Larva migrans	
Introduction to Cestodes		Visceral Larva migrans	
Taenia saginata		Filarial worms	
Taenia solium and cysticercosis		*Wuchereria bancrofti*	
Hymenolepis nana		*Brugia malayi*	
Hymenolepis diminuta		*Onchocrca volvolus*	
Echiococcus and Hydatid disease		Entemology	**4**
Diphylidium caninum		Serology and immunology of Parasitic infection	**1**
Diphyllobothrium latum			

Parasitology (2): Practical

Student should study & draw all the morphology & Characteristic features for each parasite & its stages mentioned in this syllabus

Week	Lab. title	Week	Lab. title
1	Fasciola hepatica egg, cercaria adult	7	Ascaris lumbricoides adult male & female, & eggs
	Heterophyes heterophyes adult		Trichuris trichiura male & female , egg
	Clonorchis sinensis adult	8	Entrobius vermicularis male , female & egg
2	Paragonimus westermani		Trichinella spiralis adult male , female & encysted larva
	Schistosoma haematobium: egg, cercaria adult male & female	9	Ancylostoma duodenale: Adult male, female, egg, rhabditiform larva & filariform larve

Parasitology (2): Practical; *Cont*….

Week	Lab. title	Week	Lab. title
3	S. mansoni: Egg, adult male & female		Necator americanus: Adult male & female
	S. japonicum: Egg adult male & female		Trichostrongulus colubriformis egg
4	Taenia saginata: Scolex, mature segment, gravid segment & cysticercus bovis	10	Stronguloides stercoralis: Parasitic female, free – living male & female; Rhabditiform larva & filariformlarva
	T. solium , scolex gravid segment & cysticercus cellulosae		Toxocara canis egg
		11	Wuchereria bancrofti: Microfilaria
5	Hymenolepis nana – scolex & full adult, egg, mature segment & gravid segment		Brugia malayi microfilaria
			Loa – Loa microfilaria
	H. diminuta scolex, & egg		Onchocerca volvolus microfilaria
6	Echinococcus granulosus full adult & hydatid cyst	12	Anopheles Male & Female
			Sarcoptes scabiei Male & Female
	Diphyllobothrium latum scolex, mature segment & egg		

Community Medicine (1)

Items	hr	Items	hr
Community, Definition	1	Health & Disease	1
Community Medicine: * Diagnosis * Treatment		The Epidemiological Triad * Agent * Host * Environment	2
Public health * Public health strategies for influencing health	1	Nutrition * Relation to health & Disease * Requirements * Caloric value of food * Vitamins	2
Preventive Medicine: Primary, Secondary & Tertiary prevention	3	Minerals	1
Rehabilitation, Hygiene, Sanitation	1	Calculations of food amount needed by individual	1
Screening		Anthropometric measurement	
Indices of community health * Mortality & morbidity rates * Nutritional status indicators	1		

Community Medicine (2)

Items	hr	Items	Hr
Epidemiology: * Definition & Uses	1	Transmission of infection	1
Measures of Disease frequency: * Population at risk * Prevalence * Incidence	1	Immunization & immunity	2
The concept of cause * Risk factor * Predisposing factors * Enabling factors * Precipitating factors * reinforcing factors	2	Maternal & Child health * Factors affecting health of Mother & Children * Reasons for MCH services * Essential elements of MCH services	2
Communicable Disease Epidemiology	5		

* Definition * Epidemic * Endemic * Infectious agent * Host * Susceptible * Source of infection * Recession * Period of communicability * Carrier * Contact * Inapparnant infection		

Medical Statistics (1)

1- Variables 2- Measures of location, Sample Mean, Median, Mode, 3- Sample variance and Standard deviation 4- Weighted average	5- Graphic representation 6- Random variables 7- Measures of location, Mean, Expected value 8- Measures of Dispersion, variance of probability distribution	9- Joint probability distribution 10- Expected value and Variance of a sum of random variables 11-Discreate Distributions 12- Continuous Distributions

Medical Statistics (2)

1- Statistical Inference I -Point Estimation - Description of a Confidence Interval - Estimation - Statistical Hypothesis Testing - Null Hypothesis - Power of the Test	**2- Statistical Inference II** -Students t-Distribution - A single population Mean (one sample t-test) - Comparing two Mean values from independent populations (Two sample t-test)	- Constructing a confidence interval for μ1-μ2 - Significance Probability P-value - Z-test -Chi-square Analysis

Immunology

Items	**hr**	**Items**	**hr**
Immunity = introduction, innate immunity	**1**	Exposure to an antigenic substance collaboration between cells	**1**
Immunity = Acquired immunity specific immunity humoral and cellular	**1**	Vaccines	**1**
The antigenic materials = Ag	**1**	Regulation of immune response: Tolerance	**1**
Immunoglobulins, Ig, antibodies	**1**	Immunity and infection: Bacterial infections	**1**
Immunoglobulins = classes and subclasses	**1**	Bacterial infections	**1**
Complement	**1**	Immunity to fungal infections	**1**
Major histocomptiblity complex MHC HLA	**1**	Immunity to viral infections	**1**
Ab – Ag reaction	**1**	Hyper sensitivity reaction HSR Type I	**1**
Ab – Ag reaction	**1**	HSR type II	**1**
Cellular aspects of immune response Hematopoiesis – macrophages	**1**	HSR type III	**1**
		HSR type IV	**1**
Cellular aspects of immune response: lymphoid sys.	**1**	Serological tests	**1**
Cellular aspects of immune response T – cells	**1**		

Internal Medicine (1)

Definition of Medicine **(2 hours)** History of Medicine **(2 hours)** Hypochratic Oath **(2 hours)** Physician – Patient Relationship **(2hs)** Making a diagnosis **(1 hours)** **Most Common clinical Features (5)** * Pain	* Headache * Fever * Dyspnoea * Cyanosis * Jaundice * Weight loss * Cough & haemoptysis	**Environmental Diseases (6 hours)** * Hypothermia * Hyperthermia * Radiation * High altitude disease * Compression Syndrome * Other environmental conditions.

General Surgery (1)

Subject curriculum

1. Approach a surgical patient
2. Preoperative assessment & preparing a patient for surgery
3. Principle of fluid & electrolyte balance in surgical patients.
4. Specific water & electrolyte abnormalities.
5. Shock
6. Surgical haemorrhages & Blood Transfusion
7. Nutrition
8. Burns
9. Wound & wound healing
10. Wound infections & antibiotics
11. Ulcers , sinuses & Cysts.
12. Simple (minor) surgical procedures.

Clinical Phase: Semester (7) to (12)

Code	Course Title	Lecture hours	Lab./Clinic. hours	Credit hours	Page
FM&TX0401	Forensic Medicine (1)	1	3	2	30
FM&TX0402	Forensic Medicine (2)	2	3	3	
COMEP0401	Community Medicine (3)	2		2	31
COMOC0402	Community Medicine (4)	2		2	31
COMNU0501	Community Medicine (5)	1	3	2	32
COMFM0502	Community Medicine (6)	2		2	32
PEADM0401	Pediatrics (1)	2	3	3	32
PEADM0402	Pediatrics (2)	2	3	3	
PEADM0501	Pediatrics (3)	2	3	3	
PEADM0502	Pediatrics (4)	2	3	3	
GYNOB0401	Gynecology & Obstetrics (1)	2	3	3	33
GYNOB0402	Gynecology & Obstetrics (2)	2	3	3	
GYNOB0501	Gynecology & Obstetrics (3)	2	3	3	
GYNOB0502	Gynecology & Obstetrics (4)	2	3	3	
MOLAB0501	Molecular & Lab medicine	1		1	34
INTER0401	Internal Medicine (2)	4	2+2	6	34
INTER0402	Internal Medicine (3)	4	2+2	6	35
INTER0501	Internal Medicine (4)	5	3	6	35
INTER0502	Internal Medicine (5)	5	3	6	36
DERMA0401	Dermatology	2	3	3	37
PSYCH0501	Psychiatry (1)	1	3	2	38
PSYCH0502	Psychiatry (2)	1	3	2	38
ANETH0502	Anesthesia & intensive care	1		1	38

مصدق

رئيس الجامعة

أ.د نزير ابراهيم

عميد كلية الطب البشري

أ.د نزار الضاهر

SURGR0401	**General Surgery (2)**	**3**	**3**	**4**	40
SURGR0402	**General Surgery (3)**	**2**	**3**	**3**	42
SURGR0501	**General Surgery (4)**	**4**	**3**	**5**	43
SURGR0502	**General Surgery (5)**	**3**	**3**	**4**	44
ORTHO0502	**Orthopedics & fractures**	**2**	**3**	**3**	45
OPHTH0402	**Ophthalmology**	**2**	**3**	**3**	46
RADIO0402	**Radiology**	**1**		**1**	46
ENTMD0501	**ENT**	**2**	**3**	**3**	46
ETHIC0600	**Principles & medical ethics (1)**	**2**	**-**	**2**	46
ETHIC0700	**Principles & medical ethics (2)**	**2**	**-**	**2**	47

Forensic Medicine (1) & (2)

- forensic and judiciary
- Duties of the Forensic doctor
- The doctor in court
- Issuance of the death certificate

- Death Thanatology science and forensic
- Definitions and classification of death
- The uncertain signs of death
- The confirmatory signs of death / changes to the body after death
- Blue
- Rigor mortis
- Decomposing
- Septic
- Saponification

- Estimate the time of death
- forensic examination of the bodies
- The functions of the forensic doctor.
- Examination of the place
- Visual inspection
- Autopsy
- Sampling

- Figuring forensic medical diagnosis of death
- Suicide
- Kill
- Accident
- Natural death , sudden and suspicious death
- **Identification**

1- Of the a life persons.
- Morphological manifestations
- Fingerprints
- Determination of Age
- Gender determination

2- Of the dead :
- Identifying corpses
- Non- decomposing corpses
- identification via teeth
- Tattoos
- Identify the skeletons
- The DNA and DNA
- Estimate the age of the bone

- Examination of wounds and bruises aware of legitimacy
- A glimpse on The Syrian law
- Civil and Criminal Law
- Forensic examination of the wounds

- Types of wounds :
- Scrapes
- Bruises
- Blunt traumatic injuries
- Wounds and unequivocal staps
- Bites
- Kicking
- Contrived wounds
- Defensive wounds
- The wounds of the head and skull
- The wounds of the chest and abdomen
- Fractures of the spine, long bones , the cervical column

- Forensic examination of the wounds
- The wound site
- The seriousness of the wound
- Origin of wounds

Wound complications :
- Bleeding
- Infection
- Shock
- Clot Pulmonary embolism
- Fat Pulmonary embolism
- Fat Cerebral embolism
- Gaseous pulmonary embolism
- Acute renal failure

- Wounds of firearms
- Types of Firearms : Grooved Weapons; Non- grooved weapons (hunting weapons)
- Recipes wounds short arms

A – Entry nozzle
B – Exit nozzle
C - Ring
D - Collar

- Identify distance of shooting
- Figuring forensic firearms injuries (suicide or crime or accident)

- Choking complacent
- Physiological profile : traumatic asphyxia phases
- The general signs of suffocation

- Forms of suffocation
- Strangulation : a rope or bond , hanging, strangulation by hand
- Chocking: blockage of airway foreign body
- Drowning
- Compression of the chest wall

- Hanging
- Mechanical and physiological mechanism
- Internal Signs
- External Signs
- Differential Diagnosis for hanging and criminal cases.

Strangled with a rope or strap :
- Internal Signs
- External Signs
- Criminal cases

- Strangulation by hand :

- Internal Signs
- External Signs

- Drowning :

- Signs to stay in the water
- Forensic classes
- Anatomical signs
- Is the body died by drowning or thrown into the water?

- Sudden death from internal reasons :

- The causes of sudden death

A - attack :

- Coronary artery lesions
- Heart disease caused by hypertension
- Aortic stenosis
- Diseases of the heart muscle

B - arterial disease

C - Cerebral artery lesions

- Ruptured brain aneurysm
- Cerebral hemorrhages
- Cerebral infarction and thrombosis

D - respiratory lesions

E - peptic

F - death due to asthma and epilepsy

G – Criminal miscarriages

- Sexual Issues and assaults on children

A - abortion and pregnancy

- definition pregnancy issues
- Signs of pregnancy (certain and presumptive)
- Labor and its signs
- Criminal abortion and its issues
- Therapeutic abortion

- Sex crimes

- Rape and the Syrian Criminal Code
- The rape of boys
- The rape of women
- Sexual harassment or indecency offense
- Homosexuality
- Perineal Intercourse
- The duties of a doctor in cases of sexual assault examination and keeping samples

- legitimate medical issues in children

- infanticide
- Child abuse
- The sudden death of the baby
- Still - birth

- Injuries caused by heat and cold, and electricity

- Thermal injuries (definition and pathological)
- Degree of burns
- Anatomical signs of death by burning
- Scalding
- Causes of death by burning
- Heat stroke and heat fatige.
- Cold injuries (internal and external signs resulting from the death of cold)
- Electrical injuries
- Physical Information
- External signs
- Internal signs
- Thunder injury

- Traffic accidents, injuries :

- Common causes of accidents
- Injury caused by traffic accidents - for pedestrians
- Passenger injuries in traffic accidents
  - The driver
  - Accompanying the front
  - Passengers in the back seat
- The function of the seat belt and the accompanying injuries
- Traffic accidents injuries to cyclists and motorcyclist.
- Differential diagnosis between traffic accident and suicide, and crime and death from natural causes
- Accidents on rail

- Department of Medical Toxicology legitimacy :

- Classification of toxins and pathophysiology.
- Forms of forensic poisoning
- Diagnosis of poisoning
- Treatment of poisoning
- Gaseous toxins
- Alcohol and medico- legal issues
- Ethanol intoxication
- Methanol intoxication
- Acid, cyanide poisoning
- Drugs
- Intoxication with CO
- Metallic tocins
- Arsenic Poisoning
- Lead Poisoning
- Mercury poisoning
- Agricultural pesticide poisoning : organic phosphorus compounds
- Corrosive toxins
- Sulfuric acid , hydrochloric acid , nitric acid
- Alkali corrosive
- Ammonium hydroxide
- Acid Alfenik

- Pharmaceutical Toxicology

- Intoxication with Salicylate
- Intoxication WITH Barbiturate
- Intoxication sedatives
- Intoxication with antidepressants
- Anti - histamines

- DNA Finger printing

- Use of DNA in forensic medicine.
- Origination and the discovery of DNA
- The laws of Human Genetics
- Preparation of DNA
- Procedures for the RFLP

Cloning the DNA (polymerase chain reaction)PCR

- Conduct STR (short tandem repeat)
- The mt DNA (DNA of mitochondria)
- Test Multiplex - test kits
- SNPs (single nucleotide - polymorphism)
- Y chromosome tests and amylogenin - system
- The DNA test to determine paternity.

Community medicine (3): Epidemiology

1. The concept of Epidemiology.
2. Triple C.
3. Measurement of health & disease.
4. Evaluation of risks.
5. Patterns of epidemiological study.
6. Observational Epidemiological study
7. Ecological epidemiological study
8. Transverse Epidemiological study
9. Epidemiological study of cases and evidence
10. Epidemiological cohort study
11. Empirical epidemiological study
12. Epidemiology & Prevention: Chronic noncommunicable diseases
13. Screening for diseases

14. The epidemiology of communicable diseases	15. BI and control of communicable diseases	16. Environmental and Occupational Epidemiology

Community medicine (4): Occupational health

1. Occupational Health : Definition - importance - the health status of workers.
2. The risk of dust and Prevention (CDC).
3. Chemical hazards and Prevention (CDC).
4. Physical hazards and Prevention (CDC).
5. Biological hazards and Prevention (CDC).
6. Psychological risks and the mismatch.
7. Occupational diseases.
8. Work Injuries and Prevention (CDC).
9. Health conditions for working and production processes.
10. Initial and periodic medical examination.
11. Workers Nutrition and housing.
12. Health services provided to workers.
13. Disability caused by work.
14. Occupational toxicology.
15. Occupational Sanitation.
16. Risk Assessment.
17. Visits for factories to assess the health status.

Community Medicine (5): Nutrition

1. The basics of nutrition
2. energy and the body's need
3. carbohydrates - lipids - proteins - water - minerals - vitamins
4. Clinical Nutrition
5. Nutrition in Gastric and Deudenal ulcers
6. Nutrition in diseases of the liver and gallbladder
7. nutrition in coronary heart disease
8. nutrition in hypertension
9. Nutrition for diabetic
10. Nutrition in kidney disease
11. Nutrition in obesity
12. Nutrition in thinness
13. Nutrition in gout
14. Nutrition in Cancer

Community Medicine (6): Family Medicine

1. Principles , concepts and scope of family medicine
2. The structure of the family - jobs of family - the family life cycle and the impact of the disease on the family - the family resources - treatment and family life events and stressful family crisis .
3. Entrance to the psychological and social sciences relevant to the practice of family : cultural influences , social and psychological health , the patient's behavior and the role of the patient .
4. Consultation and the relationship between the patient and the doctor.
5. Default conclusive method for the diagnosis, and pattern of suitable clinical proof.
6. Managements:
   a - Symptoms and diseases common in dealing with the family.
   b - Psycho-social problems
   c - Chronic diseases
   d - First aid
7. First aid (CPR) - the transport of the patient .
8. Essential laboratory tests (techniques and interpretations)
9. List of essential medicines - appropriate treatment - and write the recipe.
10. Patient referral
11. Health promotion and disease prevention : screening and medical examination of the appropriate physical and nutritional state.
12. Introduction of geriatric medicine and care for the elderly .
13. Take care of the sick person at home.
14. Communication skills , consultation skills, mitigation of bad news, palliative care , solace.
15. documenting medical information - medical records in practice

Pediatrics (1) to (4)

1. Introduction
2. Development
3. Growth
4. Breastfeeding and weaning
5. Artificial feeding
6. Protein – calore malnutrition
7. Failure to thrive
8. Gastroenteritis
9. Ricketts
10. Vitamin deficiency
11. Care of the newborn
12. Preterm baby & s. G. A.

13. Down syndrome
14. Turner syndrome
15. Nocturnal
16. Enuresis& encopresis
17. Mental retardation
18. Neonatal R.D.S
19. Neonatal jaundice
20. Intraventricular hemorrhage & P.V.L
21. Neonatal anemia
22. Bleeding disorders
23. Neonatal sepsis
24. Measles , German measles
25. Chiken - pox
26. Diphtheria , Tetanus
27. Mumps , Roseola Infantum
28. Scarlet fever , Pertussis
29. Typhoid fever
30. Brucellosis
31. Meningitis
32. Encephalitis
33. Immunization
34. Glomerulonephritis
35. Renal failure
36. Urinary tract infections
37. Vesicouretric reflux
38. Hemolytic – uremic syndrome
39. Nephritic syndrome
40. Renal tubular acidosis
41. Henoch – Schonlein purpura
42. Circulatory changes of birth, Congenital heart disease.
43. Congenital cyanotic heart disease-left-to-right shunt.

Pediatrics (1) to (4); *Cont….*

44. Cyanotic congenital heart disease
    Tetralogy of Fallout
    Transposition of great arteries.
45. Rheumatic fever, Bacterial endocarditis.
46. Arthritis.
47. Accident and Prevention.
48. Poisoning.
49. Child abuse.
50. Vomiting.
51. Acute abdominal pain.
52. Malabsorption.
53. Chronic in flammatory bowel disease.
54. Liver disease.
55. Anemia, Iron deficiency, Red blood cell aplasia.
56. Hemolytic anemia, hemoglobinopathies
    hemolytic anemia of newborn.
57. Bleeding disorders.
58. Leukemia, Solid organ tumor.
59. Upper respiratory tract infection.
60. Bronchiolitis, Inhalation of foreign bodies.
61. Pneumonia.
62. Asthma, cystic fibrosis.
63. Short stature, Growth hormone deficiency.
64. Thyroid disease, hyper-hypo thyroidism.
65. Adrenal cortical insufficiency.
66. Cushing syndrome.
67. Diabetes.
68. Diabetic ketoacidosis.
69. Hypoglycemia.
70. Parathyroid disease.
71. Amino acids disorders.
72. Glycogen storage disease.
73. Disorders of lipid.
74. Cerebral palsy.
75. Neural tube defect and hydrocephalus
76. Paralytic seizures.
77. Epilepsy.
78. Neuromuscular disorders, and muscle disorders.
79. Headache.
80. Neurocutaneous syndromes.

Gynecology & Obstetrics (1) & (2)

1. Clinical Approach to the Gyne, and obstetric Patient
2. Female Reproductive Anatomy and Embryology
3. Fertilization , Implantation, Placenta ,Amniotic Fluid
4. Diagnosis Of Pregnancy
5. Endocrinology Of Pregnancy And Parturition
6. Maternal Physiologic And Immunologic Adaptation To Pregnancy
7. Preconception And Prenatal Care,
8. Genetic Evaluation And Teratology,
9. Antenatal Fetal Assessment
10. Normal Labor,Delivery,Postpartum Care
11. Obstetric Analgesia And Anesthesia
12. Resuscitation Of The Newbornfetal
13. Surveillance During Labor
14. Obstetric Hemorrhage
15. Antepartum Hemorrhage(Placenta Previa . Abruptio Placent, Uterine Rupture , Fetal Bleeding
16. Postpartum Hemorrhage
17. Obstetric Shock
18. Puerperal Sepsis
19. Uterine Contractility And Dystocia
20. Dystocia Caused By Abnormal Presentation And Position
21. Dystocia Caused By Abnormalities Of Fetal Structure
22. Dystocia Caused By Maternal Pelvic Abnormalities
23. Preterm Labor, PROM,IUGR,
24. Postterm Pregnancy,IUFD

25. Multiple Gestation
26. Fetal Malpresentation (Breech Presentation, Face Presentation
27. Hypertensive Disorders Of Pregnancy
28. Rhesus Isoimmunization
29. Common Medical And Surgical Conditions Complicating Pregnancy
30. Obstetric Procedures(Us , Amniocentesis . Chorionic Villus Sampling , Cordocentesis
31. Operative Delivery (Obstetric Forceps, Vacuum Extraction , Cesarean Delivery)

Gynecology & Obstetrics (3) & (4)

1. Congenital anomalies and benign conditions of the vulva .
2. Congenital anomalies and benign conditions of the vagina
3. Congenital anomalies and benign conditions of the uterine corpus
4. Congenital anomalies and benign conditions of cervix
5. Congenital anomalies and benign conditions of the ovaries
6. Congenital anomalies and benign conditions of the fallopian tubes
7. Dysmenorrhea
8. Chronic pelvic pain
9. Vulvovaginitis, sexually transmitted infections, pelvic inflammatory disease

Gynecology & Obstetrics (3) & (4); *Cont….*

10. Pelvic organ prolapse,
11. Urinary incontinence,
12. First trimester bleeding (abortion, ectopic pregnancy, hydatyform male)
13. Endometriosis ,adenomyosis
14. Family planning: contraception, sterilization
15. Gynecologic procedures (endometrial sampling procedure).
16. Cervical procedures.
17. Pelvic endoscopy(laparoscopy), hysteroscopy)
18. Menstrual history
19. Puberty and disorders of pubertal development
20. Amenorrhea, oligomenorrhea,
21. Hyperandrogenic disorders
22. Amenorrhea, oligomenorrhea,
23. Hyperprolactinemia ,hirsutism
24. Dysfunctional uterine bleeding
25. Infertility and assisted reproductive technologies
26. Climacteric
27. Menstrual cycle-influenced disorders
28. Principles of cancer therapy.
29. Cervical dysplasia and cancer
30. Ovarian cancer
31. Vulvar neoplasms
32. Vaginal neoplasms
33. Uterine corpus cancer
34. Gestational trophoblastic neoplasia

Molecular & Lab medicine

Objects of the course:

1 - Classification of types of biochemical and molecular tests, and determine the purpose of the timing of the request and how to interpret them with a glimpse of laboratory errors .
2 - Explain the structure of nucleic acids and their characteristics that lead to developing technologies for molecular biology.
3 - Definition of recombinant DNA technology and its implementation mechanism, and medical benefits .
4 - Definition of hybridization and cloning techniques, and PCR, and DNA sequencing, and mechanisms of conduct and medical benefits.
5 - Definition and classification of gene therapy with an explanation of its mechanism and, and some examples .

Subjects of the course:

1 - Request for biochemical analysis and interpretation and types .
2 - The structure of nucleic acids and DNA
3 - Recombinant DNA technology .
4 - PCR
5 - Hybridization techniques (southern - northern - western) .
6 - DNA sanger method .
7 - Gene therapy .

Internal Medicine (2)

Gastrointestinal & Liver Diseases:

Subject curriculum

1 – Clinical examination of GIT.
2 – Functional anatomy, physiology & investigations.
3 – Presenting problems in GI diseases.
4 – Dysphagia, Dyspepsia & Vomiting.
5 – GI Bleeding.
6 – Diarrhea & Malabsorption.
7 – Constipation, Abdominal pain & Weight loss.
8 – Diseases of mouth & salivary glands.
9 – Diseases of Oesophagus.
10 – Gastero – esophageal reflux disease.
11 – Motility Disorders.
12 – Tumors of esophagus.
13 – Diseases of Stomach & Duodenum.
14 – Gastritis & Peptic Ulcer.
15 - Tumors of Stomach.
16 – Diseases of Small Intestine.
17 – Malabsorption.
18 – Infections of Small Intestine.
19 – Tumors of Small Intestine.
20 – Diseases of pancreas.
21 – Acute & chronic Pancreatitis.
22- Inflammatory bowel disease.
23- Irritable Bowel Syndrome.
24- Disorders of Colon & Rectum.
25- Diseases of Peritoneal cavity.
26- Ascitis.
27- Acute & Chronic Liver Failure, & Hepatic Encephalopathy.
28- Chronic Liver Disease, Cirrhosis & Portal Hypertension.
29- Viral Hepatitis.
30- Alcoholic Liver Disease.
31- Inherited Liver Diseases, Haemochromatosis, Wilson Disease.
32- Tumors of the Liver.
33- Gall bladder & extra hepatic biliary diseases.
34- Gall stones.

Internal Medicine (2); *Cont….*

Respiratory diseases:

1 - Clinical examination of the respiratory system.
2 - Functional anatomy , physiology & investigations.
3 - Presenting problems in respiratory diseases :
4 - Cough, dyspnoea & haemoptysis.
5 - Respiratory Failure.
6 - Obstructive pulmonary diseases (Asthma & COPD).
7 - Bronchiectesis.
8 - Infections of the respiratory system.
9 - Upper respiratory tract infections.
10- Pneumonias.
11 - Tuberculosis.
12 - Tumors of the Bronchus & lung.
13 - Interstitial pulmonary diseases.
14 - Pulmonary vascular diseases.
15 - Diseases of the nasopharynx & trachea.
16 - Diseases of the pleura , diaphragm & chest wall.
17 - Pleural effusions.
18- Pneumothorax.
19 - Lung diseases due to Irradiation.
20 - The solitary radiographic lung lesion.

Internal Medicine (3)

Infectious Diseases

1- Principles of infectious diseases
A- infectious agents
B- epidemiology of infection
C- microorganism host infections
D- management of infection
E- antimicrobial agents and principle of anti microbial therapy
2- Viral Infection
A - classification
B - systemic viral infection
D - respiratory viral infection
E - CNS viral infection
3- Bacterial Infection
A- systemic bacterial infection
B- G.I. bacterial infection
C- respiratory bacterial infection
D- CNS bacterial infection
E- rickettsial infection
F- chlamydial infection
4- Protozoal infection
5- Infection caused by helmithes
6- Fungal infection
7- HIV infection and human AIDS

Renal Disease

1 - functional anatomy / renal functional
2 - investigation
3 - glomerular diseases , glomerulopathies
4 - renal involvement in systemic diseases
5 - urinary tract infection
6 - tubulointerstital nephritis (TIN)
7 - hypertension and the kidney e
8 - renal calculi and nephrocalcinosis
9 - drugs and the kidney
10 - acute renal failure, and (ARF) acute kidney injury (AKI)
11 - chronic kidney disease (CKD)
12 - cystic renal disease
13 - tumours of the kidney and genitourinary tract
14 - distrlbution and composition of body water
15 - disorder of sodium concetration
16 - disorders of potassium concentration - .
17 - acid — base disorders

مصدق

رئيس الجامعة

أ.د نزير ابراهيم

عميد كلية الطب البشري

أ.د نزار الضاهر

18 - Ca, P metabolism

Internal Medicine (4)

Cardiology:

1- Approach to cardiac patient.
2- Diagnosis of cardiovascular diseases.
3- Electrocardiography I . General principles, normal tracings.
4- Electrocardiography II . Abnormalities in diseases, & different rhythms.
5- Rheumatic Fever & Valvular heart diseases : Mitral , Aortic,Tricuspid & Pulmonary.
6- infective Endocarditis.
7- Atherosclerosis & Coronary Artery Disease.
8- Peripheral Vascular Disease.
9- Cardiac Arrhythmias.
10- Heart Block.
11- Heart Failure, Left & Right.
12- Cardiomyopathy.
13- Pericardial Diseases.
14- Systemic Hypertension.
15- Pulmonary Hypertension.
16- Cor Pulmonale.
17- Pulmonary Embolism.
18- Congenital Heart Disease.

Blood Disorders:

1- Clinical examination in blood disorders.
2- Functional anatomy, Physiology & investigations
3- Haemostasis
4- Presenting problems in blood diseases.
5- Anaemia & high harmoglobin.
6- Leucopenia & leukocytosis.
7- Lymphadenopathy.
8- Splenomegaly.
9- Bleeding.
10- Abnormal coagulation screen
11- Thrombocytosis.
12- Pancytopenia.
13- Blood products & transfusion.
14- Anaemias : iron deficiency.
15- Megaloblastic Anaemias.
16- Anaemia of chronic disease.
17- Haemolysis.
18- Haemoglobinopathies.
19- Hematological Malignancies.
20- Laukaemia.
21- Lymphomas.
22- Paraproteinaemias.
23- Aplastic Anaemia.
24- Myeloproliferative disorders.
25- Bleeding disorders.
26- Venous thrombosis.

Internal Medicine (4); *Cont….*

Rheumatology:

1- Anatomy & types of joints.
2- History & physical examination.
3- Arthrocentesis.
4- Imaging.
5- Mono articular joint diseases.
6- Polyarticular joint diseases.
7- Regional pain syndrome.
8- Fibromyalgia.
9- Rheumatoid Arthritis.
10- Juvenile R A.
11- Psoriatic Arthritis.
12- Ankylosing Spondylitis.
13- Reactive – Enteropathic Arthritis.
14- Osteo – Arthritis.
15- Calcium & Pyrophosphate.
16- Joint infections.
17- Systemic Lupus Erythematosis.
18- Antiphospholipid Syndrome.
19- Systemic Sclerosis.
20- Idiopathic Inflammatory Myopathy.
21- Metabolic Myopathy.
22- Sjogrens Syndrome.
23- Vasculitis.
24- Behcets Syndrome.
25- Osteonercosis.
26- Paget's disease.
27- Osteoporosis.

Internal Medicine (5)

Endocrinology:

1 - Clinical Examination in Endocrine Diseases.
2 - Functional anatomy, physiology & investigations.
3 - Thyroid Gland.
4 - Thyrotoxicosis.
5 - Hypothyroidsm.
6 - Autoimmune thyroid disease.
7 - Reproductive system, delayed puberty.
8 - Male hypogonadism.
9 - Secondary amenorrhoea.
10 - Gynaecomastia.
11 - Hirsutism.
12 - Polycystic ovarian syndrome.
13 - The Parathyroid gland.
14 - the Adrenal glands.
15 - Cushing's syndrome.
16 - Adrenal Insufficiency.
17- Phaeochromocytoma.
18- Congenital Adrenal Hyperplasia.
19- Pancreatic endocrine diseases.
20- the hypothalamus & the pituitary gland.
21- Anterior pituitary hormone deficiency.

Neurology:

1 - Clinical examination of the nervous system.
2 - Functional anatomy, physiology & investigations
3 - Headache & Facial pain.
4 - Coma & Brain Death.
5 - Cerebrovascular disease .
6 - Acute stroke.
7 - Inflammatory diseases.

8 - Multiple Sclerosis. 9 - Degenerative diseases. 10 - Dementia. 11 - Parkinson's disease. 12 - Hereditary ataxias. 13 - Motor Neuron Disease. 14 - Spinal muscular atrophies. 15- Infections of the Nervous system. 16 - Meningitis. 17- Parenchymal viral & bacterial infections. 18- Raised lntracranial Pressure. 19- Disorders of the spine & spinal cord. 20- Compression of the spinal cord. 21- Diseases of Nerve & Muscle.	**Alimentary tract and Pancreatic disease** 1- Functional anatomy, physiology 2- and investigation 3- Presenting problems 4- Dysphagia, Dysgsia, vomiting 5- GIT Bleeding, diarrhea, Malabsorption 6- Wt. loss, constipation, Abel. Pain 7- Diseases of the mouth 8- Diseases of the desophagus 9- Gastro – oesophageal reflux Diseases 10- Motility disorders, Infection, Tumors of desophagus	11- Diseases of stomach Duodenum 12- Gastritis, Peptic ulcer Dis. Tumors of st. 13- Diseases of small intestine 14- Disorders causing Malabsorption 15- Motility disorders, Infection , Tumors of S.lut 16- Diseases of the Pancreas 17- Acute chronic Pancreatic, Tumors of the Pancreas 18- Inflammatory bowel dis. 19- Irritable bowel syndrome. 20- Ischaemic gut injury 21- Disorders of the colon and rectum 22- Tumors, Diverticulosis, Constipation 23- Anorectal dis. 24- Disease of the Peritoneal Cavity

Dermatology

مفردات منهاج الأمراض الجلدية والزهرية

subject	الموضوع
Skin discription and anatomy	خصائص الجلد وتركيبه
Examination of dermatology patient and the diagnosis of dermatology diseases	فحص المريض الجلدي وتشخيص الأمراض الجلدية
Parasitic dermatology diseases By worms and protozoa And arthropods	الأمراض الجلدية الطفيلية بالديدان والحيوانات الأولي ومفصليات الأرجل
Fungal diseases	الأمراض الفطرية
Bacterial dermatology diseases And sarcoid	أحماج الجلد الجرثومية والساركوئيد
Viral diseases	الأحماج الفيروسية
Sexually transmitted diseases	الأمراض المنقولة بالجنس
Dermatology diseases Caused by mechanical, physical and chemical factors	الأمراض الجلدية الناجمة عن عوامل آلية وفيزيائية وكيماوية مفتعلة
Urticaria and drug reactions	الشرى والتفاعلات الدوائية
Dermatitis and eczema And pruritus and prurigo	التهاب الجلد والأكزيمة والحكاكات والحكات
Melanin hyperpigmentation disorders	اضطرابات تصبغ الميلانين
Dermatoses of keratinization disorders	جلادات اضطرابات التقرن
Erythemato-squamous and papulo-squamous dermatoses	الجلادات الحطاطية والحمامية الوسفية
Blistering dermatoses	الجلادات الفقاعية
Connective tissue dermatoses	جلادات النسيج الضام
Vascular dermatology diseases And hemorrhagic disorders	الأدواء الوعائية الجلدية والاضطرابات النزفية
Sebaceous glands diseases And ecrine and apocrine sweat glands	أمراض الجريبات الزهمية والغدد العرقية الناتحة والمفترزة
Hair and nail disorders	آفات الأشعار والأظافر
Mucous membrane disorders	آفات الأغشية المخاطية
Systemic diseases and the skin	الجلد والأجهزة الأخرى
Skin tumors	أورام الجلد
Drugs and dermatological therapy	الأدوية والمعالجات الجلدية

Psychiatry (1) & (2)

1 - Objectives of the course:
- The student briefing note to the concept of Psychiatry and Neuroscience , chemical and biological principles.
- Knowledge of psychological disorders diagnosis.
- Know the treatment of mental disorders medically, psychologically, and technically.
- Know the methods of prevention of mental illness and treatment of relapse and crisis.

2 - Subjects of the course:
- Introduction to Psychiatry (signs and symptoms) and Psychopathology
- Classification of mental illness according to U.S. and European standards and psychometrics.
- The patient's psychological approach and taking the medical history.
- Mental status examination.
- Generalized anxiety and stress disorders and acute phobias.
- Stress disorder after severe obsessive -compulsive disorder.
- Organic anxiety disorders and other disorders in anxiety.
- Bipolar Abscess Disorder, treatment and prevention.
- Depressive disorder.
- The treatment of depression.
- Schizophrenia.

3 - Educational outcomes supposed to be acquired or strengthened by the student:
- Knowing the overlapping of the causes of mental disorders.
- Psychological approach to the patient , understanding and examination.
- Treatment of psychiatric diseases with medications, with knowledge of all kinds of psychological treatments and social interventions .

Anesthesia & intensive care

This course provides students with information and clinical skills necessary to him as a doctor in the future in the field of resuscitation and emergency, as well as information on the methods of anesthesia and without dumping in Anesthesiology.

• General anesthesia :
- Differentiate between general anesthesia and regional anesthesia .
- Numeration of methods of general anesthesia and regional anesthesia .
- Distinction between drugs used in anesthesia (relievers - muscle relaxants - hypnotics - placebos) .
- Recalling the inhalable drug (gas - liquid pilot) .
- Differentiate between Inhaling anesthesia and intravenous anesthesia.
- Methods of preparation and pharmaceutical drugs used and their indications.
- assessment of the patient before anesthesia and surgery.

• Regional anesthesia :
- differentiate between lumbar and epidural anesthesia.
- Recall of topical drug used in regional anesthesia .
- Numerating complications of regional anesthesia .
- Characterization of the conduct of epidural and lumbar anesthesia (the status of the patient - determine the lumbar distance) .

• Anesthesia apparatus:
- Describe and distinguish between parts of the anesthesia apparatus and know the function of each.
- Distinguish between spontaneous ventilation and mechanical ventilation.
- Vital signs changes during anesthesia.

• Monitoring devices during anesthesia :
- Numerating vital signs monitored during the surgery.
- Numerating the devices used in monitoring during anesthesia .
- Numerating of reasons for changing vital signs during anesthesia .

• Management of the airway and oxygen therapy :
- Explaining methods of securing airways.
- Explaining methods of giving oxygen during spontaneous breathing (nasal catheter & facial mask)
- secure patient ventilation in non-breathing patients using the breathing mask and breathing bag.

• Endotracheal intubation:
- Description of endotracheal tube and enumeration of its parts and a mentioning the function of each part .
- Review of the types of tracheal tubes .
- Determine indications for endotracheal intubation and classify into :
  - During surgery and anesthesia .
  - General Indications & outside the operating room.
- recall the reasons for the difficulty of endotracheal intubation (congenital - acquired) .
- Classifying the complications of endotracheal intubation in groups: 1. before intubation. 2. during the introduction of the endotracheal tube. 3. after the entry. 4. late complications.

Anesthesia & intensive care; *Cont*….

- Identify and prepare the necessary tools to perform endotracheal intubation.
- Examining the patient in order to anticipate the difficulty of endotracheal intubation, and application of standards and methods used in it.
- Choose the proper position to perform endotracheal intubation .
- Perform endotracheal intubation skillfully.

• Respiratory cardiopulmonary resuscitation :

- Numerating the causes of cardiac and breathing arrest, and distinguish the types that require the application of ALC.
- The relationship between the heart and breathing stopped .
- Numerating and arrange the sequence of the basic steps in CPR by global recommendations .
- Numerating the essential drugs in cardiopulmonary resuscitation and remember the Pharmaceutical dosage and identify routes of administration.
- Prepare and choose the tools necessary for a recovery, which should present in a Emergency car and method of using ALC.

• The balance and imbalance of fluids and electrolytes and its managemet.

- Demonstrate the distribution of the natural body fluids (the body's natural spaces - plasma osmosis) .
- Characterization of incoming and outgoing normal daily fluid.
- Assessment of intravascular volume through :
  1 . Physical examination .
  2 . Interpretation of laboratory tests .
- Recalling invasive ways :
  1 . Central venous pressure .
  2 . Pulmonary artery pressure .
- Recalling non -invasive ways : Trans-esophageal ultrasound.
- Calculating the daily needs of water and essential electrolytes.
- Reasons for the sharp imbalance in electrolytes (potassium - calcium - sodium - phosphorus - magnesium) .
- Initial management of cases of severe and life-threatening Hypo- and hyper concentrations of electrolytes.
- The ability to choose the type of fluid to be compensated for by the patient condition .

• Acid- alkaline balance :

- definition of plasma acid balance .
- Anion gap.
- Measurements and standards required for clinical evaluation .
- Acid- alkaline balance disorders .
- Definition of metabolic acidosis and mentioning its causes.
- Metabolic alkalosis and mentioning its causes.
- Respiratory acidosis and alkalosis .
- Principles of clinical diagnosis and approach .
- Show the status of the imbalance in the acid -alkali balance by reading and interpretation of sample blood gases and distinguish the abnormal ones .

• Shock:

- Definition of shock and clarify its mechanism and pathogenicity .
- Numerating types of trauma.
- Evaluation of trauma patients (clinical examination and access to diagnosis of shock) .
- Initial Management.
- Open venous line of the patient in order to push fluid and blood needed in the initial measure management.

• Blood transfusions :

- determine the types of blood group .
- Blood group compatibility and blood transfusions .
- Numerating the complications of blood transfusion.
- Blood storing conditions.
- Naming of blood products that can be transferred to the patient (thrombocytopenia - erythropoiesis - clotting factors and fresh frozen plasma and use cases .
- Blood transfusion and dealing with the tools necessary to do so by using the correct way .

• Plasma :

- Distinguish the difference between crystalloids and colloids .
- Determining indications for transfer crystalloid and colloid fluids.
- Calculate the amount of fluid to be compensated in case of severe bleeding.

• Intensive care :

- Definitions, and intensive care unit .
- Classifying ICU (surgery - internal - heart attack) .
- Identify groups of patients who are contraindicated for their admission to the ICU and the use of mechanical ventilation .

• Management of acute and chronic pain:

- Differentiate between acute and chronic pain.
- Clarifying methods of pain transmission.
- Demonstration of non-surgical methods of treating acute pain after surgery (pharmacological and non-pharmacological) .
- Demonstrating methods of treating chronic pain.

General Surgery (2)

First: Objectives of the course:

The course aims to enrich the student's thought with the following matters:

A - Information:

1- To know the basic principles of this science and focus on the most common and dangerous diseases.
2- Objective familiarity in the various methods used in the diagnosis of various diseases , especially the modern ones.
3- Introduction of different surgical treatment modalities and the latest developments that have occurred.

B – Skills:

1- Learn the skills specified in the medical history taking and clinical examination basics, and how to choose the appropriate diagnostic methods and the ability to link these data with the results of the various tests to reach a correct clinical decision, and make the student able to deal with different situations.
2- Application of the basic concepts of the critical thought and the creative solution for medical and scientific problems.
3- Develop the skills of the research and study methods to study certain phenomenon with the analysis skill and conclude valid results.

C - Behavior:

Giving the student the skill and personal ability to search and learn updates in this science and the communication with other medical specialties within the framework.

Second: Course Description:

This course introduces the basics of General Surgery for fourth year students in the College of Human Medicine , which includes an anatomical and physiological review for tissues and organs within this area, precedes the clinical presentation of diseases that affect it such as birth defects, infections, injuries, and benign and malignant tumors and other diseases with an explanation of the latest updates in the diagnosis and treatment methods, in a manner make the student able to deal with all the cases , especially the common ones that encounter him whether during the clinical training stage or later on in his own practice

Third: Characterization of the course:

1 – Metabolic Response to the injury
- Knowledge of the traditional concept of physiological stability of the body
- Media that play a role in the metabolic response
- Physicochemical and biochemical changes following the injury and during healing
- Body components changes that accompany surgical injury
- Avoid factors that can lead to hyper- metabolic response to injury
- The essential concepts in the typical presurgical care

2 – shock and blood transfusion
- The pathogenesis of shock and ischemic injury
- Various types of shock and principles of ressucitation
- Necessary supervision and important points in ressucitation
- The use of blood and blood products and the benefits and risks associated with blood transfusion

3 –surgical infections
- Definition of infection from surgical point of view
- The factors that lead to wound infection
- Classification of surgical infections and severity
- Indication of antibiotics and knowing their preference
- The importance of technology and antiseptic methods in contaminated wound primary and secondary healing delay
- lack of resistance to infection resons

4 – the principles of Oncology
- Biological nature of cancer
- Principles of cancer prevention and early detection
- The principles of cancer development and the basic knowledge of the causing factors
- The development of the data with the predominance in the management of cancer
- Principles of Cancer Prevention

5 – Preoperation preparation
- Tasks required to prepare the patient for the operation
- Common problems faced by the patient's before the surgery
- How to get the patient to a suitable pharmacological state before anesthesia or surgery
- How to take the patient's acceptation for the surgery
- Organize the list of surgical operations

6 – Anesthesia and pain management
- Task of anesthetist pre, during and post -operation
- Technology to secure the airway
- The problems of one day surgery
- Methods of pain relief , the advantages and disadvantages
- The principles of securing the post -operative analgesia
- The management of chronic pain and pain caused by malignant lesions

General Surgery (2); *Cont….*

7 - Postoperative care
- Postoperative Care methodology
- Common and critical preoperative complications, knowing, treate and prevent them.
- How to calculate the inpute and outpute of the surgical patient

8 - Nutrition and fluid therapy
- The causes and consequences of malnutrition in the surgical patient
- Fluid and electrolytes requirements of the patient before and after surgery.
- The dietary requirements of the patient and the dietary needs in the case of bowel resection
- Different methods to secure the dietary support and its complications.

9 - Abdomen traumas
- Abdominal trauma types and mechanisms of occurrence
- Classification of trauma depending on the severity and multiplicity
- How to approach a traumatic patient
- procedures required for the diagnosis of traumatic injury and to know the ones important in critical situations
- The important principles related to the management and follow-up of traumatic patient and learn methods of treatment
- Traumatic injuries according to the injured organ and management

10 - Surgical skin and subcutaneous diseases
- An anatomical review about the structure of skin and its functional characteristics
- Common surgical lesions of the skin and its appendages
- Common benign and malignant tumors
- The most watched skin demonstrations in the surgical clinic related to other organs in the body

11 - The breast
- A anatomical review
- The important diagnostic procedures
- Breast anomalies
- Benign breast lesions
- Breast cancer and the data specific for diagnosis and treatment methods

12 - hernias , umbilical and abdominal wall
- An anatomical review
- Definition of a hernia
- Mechanisms that cause hernias and the predisposing factors
- Types of hernias depending on the anatomy
- Special forms of hernias
- Differential Diagnosis in accordance with the age and sex
- Complications of hernias
- Common hernias and the different surgical methods used in the treatment and the differences in the method of treatment
- Common umbilical anomalies

13 - The peritoneum, omentum, mesentery and retroperitoneal space
- Clinical data for localized and generalized peritonitis
- Common causes and complications of peritonitis
- Principles of surgical management of peritonitis
- The clinical manifestations and treatment of the abdominal and pelvic abscesses
- The clinical manifestations of tuberculous peritonitis
- The causes and pathophysiology of ascites
- Retroperitoneal and mesenteric lesions

14 - The oesophagus
- Anatomy and physiology and its relation to the pathological cases of oesophagus and stomach
- Clinical data , diagnosis and treatment of benign and malignant lesions
- Common lesions

15 - Stomach and duodenum
- Anatomy and physiology and its relation to pathological cases of stomach and duodenum
- procedures necessary for the diagnosis
- The importance of stomach inflammation and H. pylori
- Complications of duodenal and gastric ulcers and the surgical management
- Benign and malignant gastric tumors and how to diagnose and treat
- Duodenal obstruction and a review of its tumors

General Surgery (3)

1-The thyroid and parathyroid glands :
- Embryology , surgical anatomy and physiology.
- Tests of thyroid function .
- Hypothyroidism . - Thyroid enlargement.
- Hyperthyroidism - Neoplasms of the thyroid .
- Thyroiditis . - Hypoparathyroidism .
- Parathyroid hyperparathyroidism .

2 –Adrenal glands and other endocrine disorders :
- Adrenal glands .
- Anatomy , embryology , histology and function .
- Disorders of the adrenal cortex .
- Disorders of the adrenal medulla .
- Surgery of the adrenal glands .
- Pancreatic endocrine tumours .
- Neuroendocrine tumours of the bronchi, stomach and Small bowel.
- Multiple endocrine neoplasias .

3-The liver :
- Anatomy of the liver .
- The internal anatomy of the liver .
- Acute and chronic liver disease .
- Liver trauma .
- Portal hypertention .
- Chronic liver conditions .
- Liver infections .
- Liver tumours .

4-The gall bladder and bile ducts
- Surgical anatomy and physiology .
- Function of the gall bladder .
- Radiological investigation of the biliary tract .
- Congenital abnormalities of the gall bladder and bile ducts.
- Extrahepatic biliary atresia .
- Congenital dilatation of the intrahepatic ducts
- Trauma .
- Torsion of the gall bladder .
- Gallstones (cholelithiasis) .
- Empyema f the gall bladder .
- The cholecystoses(cholesterosis, polyposis,adenomymatosis
- and cholecystitis glandularis proliferans) .
- Cholecystectomy .
- Primary sclerosing cholangitis .
- Parasitic infestation of the biliary tract .
- Tumours of the bile duct .

5 - The pancreas :
- Anatomy and physiology .
- Investigation .
- Congenital abnormalities .
- Injuries to the pancreas .
- Pancreatitis .
- Carcinoma of the pancreas .

6-The spleen :
- Embryology , anatomy and physiology .
- Functions of the spleen .
- Investigations of the spleen .
- Congenital abnormalities .
- Splenic artery aneurism , infarct and rupture .
- Splenomegaly and hypersplenism .
- Neoplasms . - Splenectomy .

7-The small and large intestines :
- Anatomy of the small and large intestine .
- Functional abnormalities .
- Vascular anomalies (angiodysplasia) .
- Blind loop syndrome . - Diverticular disease .
- Ulcerative colitis . - Crohn's disease .
- Infections . - Tumours of small intestine .
- Tumours of the large intestine .
- Other disorders . - Stomas .

8-Intestinal obstruction :
- Classiffication .
- Pathophysiology .
- Strangulation .
- Special types of mechanical intestinal obstruction .
- Clinical features of intestinal obstruction .
- Imaging .
- Treatment of acute intestinal obstruction .
- Treatment of acute large bowel obstruction .
- Chronic large bowel obstruction .
- Adynamic obstruction .

9-Vermifrm appendix :
- Anatomy . - Acute appendicitis .
- Neoplasms of the appendix .

10-The rectum :
- Anatomy .
- Clinical features of rectal disease .
- Foreign bodies in the rectum .
- Injuries . - Prolapse .
- Proctitis . - Solitary rectal ulcer .
- Benign tumours . - Carcinomas .

11-The anus and anal canal :
- Anatomy and physiology .
- Examination of the anus .
- Congenital abnormalities .
- Anal incontinence . - Anal fissure .
- Haemorrhoids . - Pruritus ani .
- Acute anorectal sepsis . - Fistula-in-ano .
- Hidradenitis suppurativa .
- Condylomata accuminata (anal warts) .
- Anal intraepithelial neoplasia .
- Non-malignant strictures .
- Malignant tumours .

12-Acute abdomen

General Surgery (4)

First: VASCULAR DISORDERS

**** Arterial disorders**

– Arterial Stenosis and Occlusion

1. Cause and effect
2. Rest pain - Coldness, numbness, paraesthesia and colour change - Ulceration and gangrene - Temperature sensation and movement - Arterial pulsations - Arterial bruits - Venous refilling.
3. Relationship of clinical findings to site of disease
4. Investigation of arterial occlusive disease
5. General investigation
6. Special investigation : Doppler ultrasound blood flow detection - Duplex imaging – Treadmill - Angiography (synonym: arteriography) – Digital subtraction Angiography - Magnetic resonance angiogram – Multi slices CT Angiogram.
7. Non-surgical management of arterial stenosis or occlusion:
8. Transluminal angioplasty and stenting
9. Acute Arterial Occlusion Embolic occlusion Clinical features - Treatment
10. Therapeutic embolization

– Gangrene
Clinical features -Treatment of gangrene- Specific varieties of gangrene - Diabetic gangrene , Bedsores , Drug abuse , Frostbite ,Ischemic gangrene , Venous gangrene.

– Aneurysm
Classification of aneurysms. - Clinical features. - Abdominal aortic aneurysm
Ruptured abdominal aortic aneurysm.
Management of ruptured abdominal aortic aneurysm.
Abdominal aortic aneurysm: indications for operation.

– Arteritis and vasospastic conditions.
Thromboangiitisobliterans (Buerger's)disease.
Raynaud's disease.
Raynaud's syndrome .....

**** Venouse Disorders**

– The anatomy of the venous system of the limbs
– Varicose veins.
Investigation. - Management of patients with varicose veins.
– Deep vein incompetence and obstruction
– Leg ulceration.
– Venous thrombosis.
Aetiology. - Pathology. - Diagnosis & Investigation.
Treatment of a deep vein thrombosis.
Treatment of pulmonary embolus.
Superficial thrombophlebitis.
– Congenital venous anomalies.
– Entrapment of veins.
– Axillary vein thrombosis.
– Venous injury ..

**** Lymphatic Disorders.**

– Anatomy and physiology of the lymphatic system.
– Acute inflammation of the lymphatics.
– Lymphoedema.
Symptoms frequently experienced by patients withLymphedemaPathophysiology.
Classification.
Symptoms and signs.
Malignancies associated with lymphedema
– Primary lymphoedema.
– Secondary lymphoedema.
– Investigation of lymphoedema.
– Filariasis , bacterial infection , trauma , lymphoedema and chronic venous insufficiency.
– Principal of management of lymphoedema ..

Second: THORACIC SURGICAL DECISION:

The course includes the following:

1 - an anatomical and physiological glimpse
2 - an overview of the main symptoms and signs that manifest through which the chest lesions.
3 - congenital chest wall lesions
4 – benign and malignant chest wall tumors .
5-Infectious lesions of the chest wall, cold abscess
6 -spontaneous pneumothorax
7 – pleural effusion in its various forms
8 – pleural empyema
9 - primary and secondary pleural tumors
10 – mediastinal masses (primary and secondary tumors, cysts)
11 - congenital lung lesions
12 - the primary and secondary lung cancer, benign tumors of the lung
13 - hydatid pulmonary cysts disease
14 – chest trauma : airway obstruction , tension pneumothorax , open pneumothorax, pericardial temponad , hemothorax , flail chest , pulmonary contusion , tracheobronchial trauma , aortic injury , esophageal rupture , traumatic diaphragm rupture , sternum and ribs fractures
15 - congenital lesions of the diaphragm, the diaphragm hernias
16 – benign and malignant esophageal tumors , esophageal diverticulae, gastro-esophageal reflux, Alchalasia (cardiospasm)

General Surgery (4); *Cont….*

Third: DECISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

1. The purposes of studying reconstructive surgery and wound healing
2. Grafts and flaps (types and indications)
3. Alternatives and implants and practical applications
4. Evaluation and methods of diagnosis, treatment and complications
5. Burns, purposes of studying and the pathogenesis of various injuries
6. Evaluation and initial management of burns
7. Different aspects of treatment of burns and early surgery
8. Small, electrical, chemical, radiological and cold burns
9. Breast plastic surgery
10. The purposes of studying of hand surgery and anatomy of the hand
11. Injuries of tendons and tendon graftes
12. Infections of the joints of the wrist and hand and neurological injuries and ganglions
13. Inflammation pod facility and congenital hand deformities,
14 diabetic hand, Dikvervan disease, carpal tunnel syndrome, complications of hand surgery, tennis elbow, golf, finger jumper) wrist arthroscopy, ligament damage, Tunnel Syndrome facility

General Surgery (5)

First: Cardiology

Cardiopulmonary Bypass
- Surgical approach to the heart
- Initiating cardiopulmonary bypass
- Myocardial protection
- Complications of cardiopulmonary bypass

CORONARY ARTERY BYPASS SURGERY
- Coronary artery anatomy
- Ischaemic heart disease
- Clinical manifestations
- Pathophysiology
- Investigations
- Indications for surgery
- Postoperative complications
- Surgical outcome

VALVULAR HEART DISEASE
- Types of prosthetic valves
- Prosthetic valve dysfunction and complications
- Mitral valve disease
- Aortic valve disease

CONGENITAL HEART DISEASE
- Classification
- Cyanotic congenital heart disease
- Acyanotic congenital heart disease

THE THORACIC AORTA
- Thoracic aortic aneurysms
- Aortic dissection

PERICARDIAL DISEASE
- Pericardial effusion
- Pericarditis

Second: Urology

Urinary symptoms
Investigation of the urinary tract
Anuria
Congenital abnormalities of the Kidney
Injuries to the kidney
Injuries to the ureter
Hydronephrosis
Renal calculi
Ureteric calculus
Idiopathic retroperitoneal fibrosis
Kidney infections
Neoplasms of the kidney
Bladder trauma
Congenital defects of the bladder
Retention of urine
Incontinence of urine
Bladder stones
Diverticulae of the bladder
Urinary fistulae
Lower urinary tract infection and Cystitis
Schistosomiasis of the bladder
Neoplasms of the bladder
Carcinoma of the bladder
Benign prostatic hyperplasia
Prostatitis
Tuberculosis of the prostate and Seminal vesicles
Carcinoma of the prostate
Sexually transmitted genital Infections
Incompletely descended testis
Injuries to the testis
Torsion of the testis
Varicocele
Hydrocele
Epididymo-orchitis
Orchitis
Tumours of the testes
Male infertility

Third: neurosurgery

Intracranial pressure
- Cerebral herniation

Hydrocephalus
Intracranial infection
- Meningitis
- Tuberculosis
- Subdural empyema
- Parasitic central nervous system infections

Intracranial tumours
- Gliomas
- Cerebral metastases
- Meningiomas
- Pituitary tumours

Vascular neurosurgery
- Aneurysmal subarachnoid haemorrhage
- Arteriovenous malformations
- Cavernomas
- Moyamoya disease

Epilepsy surgery
Functional neurosurgery
Developmental abnormalities
- Spinal dysraphism
- Encephaloceles

Peripheral nerve disorders
Brainstem death

Orthopedics

1- Initial definitions
- Causes of fractures
- Fractures patterns
- Level of fractures
- Deformity of fractures
- Open fractures

2- Diagnosis & treatment of fractures
- Clinical features of fracture
- Clinical examination
- Radiographic examination
- Treatment of uncomplicated closed fracture

3- Injuries of the shoulder
- Fractures of the shoulder girdle
- Fractures of the clavicle
- Fracture of the scapula
- Subluxation and dislocation of the sternoclavicular joint
- Subluxation & dislocation of the acromioclavicular joint
- Dislocation of the shoulder
- Recurrent anterior dislocation of the shoulder
- rupture of rotator cuff of the shoulder

4- Fractures of the humerus
- Fractures of the neck of the humerus
- Fracture of the greater tuberosity of the humerus
- Fractures of the shaft of the humerus
- Supracondylar fractures
- Fractures of the condyles of the humerus
- fractures of the epicondyles

5- Injuries of the forearm and the hand
- Dislocation of the elbow
- Dislocation of the head of the radius
- Subluxation of the head of the radius(pulled elbow)
- Fracture of the olecranon process
- Fracture of the coronoid process
- Fracture of head of radius
- Monteggia fracturedislocation
- Fracture of the shaft of the forearm bones
- Galeazzi fracturedislocation
- Colles's fracture
- Smith,s fracture
- Barton's fracture
- Carpal injuries
- Scaphoid fracture
- Lunate fracture and discolation
- Bennett's fracture
- Rolando fracture
- Mallet finger
- Jersey finger
- Metacarpal bone fractures
- Phalanges fracture

6- Injuries of the lower limb
- Femoral neck fracture
- Intertrochanteric fracture
- Sub trochanteric fracture
- Posterior dislocation of hip joint
- Anterior dislocation of hip joint
- Central dislocation of hip joint
- Femoral shaft fracture
- Distal femur fracture
- Proximal tibia fracture
- Tibia and fibula fracture
- Pylon fracture
- Patella fracture
- Acute dislocation of patella
- Medial collateral ligament injury
- Lateral collateral ligament injury
- Cruciate ligaments injuries
- Meniscus injury

7- Orthopedics principles
- Principles of diagnosis and treatment
- Clinical examination
- Diagnostics imaging
- Other investigations
- Biopsy

8- Infections
- Acute osteomyelitis
- Chronic osteomyelitis
- Brodie's abscess (chronic bone abscess)
- Tuberculosis of bone
- Septic arthritis

9- Orthopaedics of the upper limb
- Cubitus valgus
- Osteoarthritis of the elbow
- Osteoarthritis of the wrist
- Loose bodies in the elbow
- Tennis elbow
- Golf elbow
- Volkmann's ischaemic contracture
- Madelung's deformity
- Ganglion
- De quervain's

10- Orthopaedics of the lower limb
- Osteoarthritis of the hip
- Osteoarthritis of the knee
- Perthes' disease
- Slipped capital femoral epiphysis

11- bone tumors and other local conditions
- Classification
- <u>Benign tumors of bone:</u>
  1-Osteoid osteoma
  2- Chondroma
  3- Osteochondroma
  4- Giant-cell tumor
- <u>Malignant tumors of bone:</u>
  1-Osteosarcoma
  2-Chondrosarcoma
  3-Malignant fibrous histiocytoma
  4-Ewing's sarcoma
  5-Myeloma
  6-Secondary (metastatic) tumors
- Solitary bone cyst
- aneurysmal bone cyst
- Fibrous dysplasia

12- Congenital deformities
- Congenital dislocation of the hip
- Coxa vara
- Bow legs and knock knees
- In toe gait
- Toe walkers
- Congenital talipes equinovarus
- Metatarsus adductus
- Congenital vertical talus
- Flat foot
- Spina bifida and meningomyelocele

Ophthalmology

1. Anatomy
2. History and examination
3. Clinical optics
4. The orbit
5. The eyelids0
6. The lacrimal system
7. Conjunctiva, cornea and sclera
8. The lens and cataract
9. Uveitis
10. Glaucoma
11. Retina and choroid
12. Retinal vascular disease
13. The pupil
14. The visual pathway
15. Eye movements
16. Trauma
17. Services for the visually handicapped
18. Clinical cases

Radiology

1. The physical principles of medical imaging devices
2. Medical imaging of the chest and blood
3. Medical Imaging of inter nervousness
4. Medical imaging of bones and joints
5. Medical Imaging for the digestive system
6. Medical imaging device urogenital
7. Medical Imaging to generate and gynecological diseases.

ENT

1. Case history and physical examination.
2. Investigations in Otolaryngology.
3. Mouth, Tonsils and Adenoids.
4. Salivary Glands.
5. The Ear.
6. The Nose and paranasal Sinuses.
7. The Pharynx and Oesophagus.
8. The Larynx.
9. The Facial nerve.
10. Audiology.

Medical Ethics (1)

Objects of the course:
Students must be at the end of Chapter able to:
1 - Show the ability to deal with medical issues of morality.
2 - Knowledge of the principles and ethics of medicine.
3 - Demonstrate knowledge of the history of medicine and the flags of Islamic medicine.
4 - Handle and practice medicine ethically .

Subjects of the course :
1 - the History of the medical profession .
2 - Flags of Medicine in Islam .
3 - Hippocrates and the Hippocratic Oath .
4 - Ethics and Professional Ethics (1) .
5 - Ethics and Professional Ethics (2) .
6 - Duties of a doctor and his rights .
7 – Medical Syndicates.
8 - The laws of practicing the profession .
9 - Professional secrecy .
10 - The relationship between medicine and the patient.
11 - The relationship between the doctor and his colleagues and the community.

Educational outcomes supposed to be acquired or strengthened to students :
1 - Strengthening the ethical practice of medicine .
2 - Strengthening professional development and communication skills
3 - Strengthening the legal aspects of ethics and the origins of the practice of the profession

Medical Ethics (2)

Objects of the course :
Students must be at the end of Chapter able to:
1 - Show the ability to bear the medical responsibility.
2 - Use of ethical rules in medical research.
3 - Creating moral decision of medical practices as cloning
4 - knowledge of legislation and laws related to medicine in Syria

Subjects of the course :
1 - Medical Liability.
2 - Abortion , infertility, contraception and medical ethics.
3 - Medical research and ethics.
4 - Ethics of euthanasia.
5 - Reproduction and genetics and medical ethics.
6 - IVF and uterus tenant
7 - Taking approvals to operate the surgical treatment
8 - Organ transplants and medical ethics
9 - Laws and regulations relating to modern medicine in Syria
10 - Relationship between medicine and society

Educational outcomes supposed to be acquired or strengthened to students :
1 S strengthen the ethical practice of medicine and knowledge of the laws relating to medical practice.
2 - Development of communication skills.
3 - Development of critical thinking.

دمشق في / / 20

عميد الكلية الطب البشري **رئيس الجامعة**

أ. د. نزار الضاهر **أ. د. نزير ابراهيم**