M.B.B.Ch Program & Course Specifications

2016

M.B.B.Ch. Program & course specifications 2010

Basic Information

- **Program Title: M.B.B.Ch**
- **Award / degree:** Bachelor of Medicine and Surgery
- **Program Type:** Multiple
- **Departments responsible:** 29 departments:
- **Coordinator:** Professor Dr. Wafaa Zahran
- **External Evaluator:** Professor Dr. Ahmed Mansour
- **Date of most recent approval of program specification by the faculty council: 6 / 2010**

N	Department	N	Department
1	Anatomy & Embryology	16	Cardiovascular medicine
2	Histology	17	Tropical medicine
3	Physiology	18	Dermatology& Venerology
4	Biochemistry	19	Clinical Pathology
5	Pathology	20	Radiology
6	Pharmacology	21	Pediatrics
7	Microbiology & Immunology	22	General Surgery
8	Parasitology	23	Urology
9	Ophthalmology	24	Orthopedics
10	E.N.T	25	Cardio-thoracic Surgery
11	Forensic medicine & Toxicology	26	Neuro-surgery
12	Community medicine	27	Plastic Surgery

N	Department	N	Department
13	Internal medicine	28	Oncology & Radiotherapy
14	Psychiatry & Neurology	29	Anaesthesia
15	Chest	30	Obstetrics&& Gynaecology

1-Program Aims:

The program aims to provide students with knowledge, skills and attitudes necessary to:

- provide care as family physician/general practitioner, with emphasis on disease prevention and health promotion,

- achieve the standards required to enable them to compete in the national and international labor market,

- be well grounded to the ethics of medical practice and respect the religious, cultural and humanity values that govern the relation between profession and the society,

-be capable to collaborate with and appreciate the role of other health care professionals,

- be able for continuous self learning to cope with the expeditious advancement in the practice of medicine.

2-Intended Learning Outcomes (ILOs) for program:

A-Knowledge and Understanding:

By the end of the program, the graduate will have acquired the ability to:

a1- Describe the normal structure and function of the human body on molecular, cellular and organ system levels and those involved in maintaining body homeostasis.

a2- Describe the normal growth & development of the human body & mind throughout different life stages, including clinically relevant age and sex variations.

a3- Identify the altered development, growth, structure & function of the body and its major organ systems that are seen in various diseases.

a4-Define etiology of illness & disease, with special emphasis on environmental &traumatic causes.

a5- List communicable diseases of the community (microbial and parasitic diseases) and the methods of their prevention and control.

a6- Recognize the principles of genetics & the role of genetics in health & disease, as well as the basics of gene therapy and genetic counseling.

a7 –Describe clinical, laboratory and radiological manifestations of diseases.

a8- Discuss differential diagnoses of common acute and chronic diseases, and underline the importance of their relative incidences in establishing the diagnosis.

a9- Recognize methods of early diagnosis of malignancy & screening.

a10-Discuss the principles of early recognition & management of acute illnesses;

including common medical & surgical emergencies.

a11-Identify Principles & international guidelines of management of traumatic

conditions with emphasis on the severely & polytraumatized patient.

a12- Discuss principles and indications for interventions and define the available surgical interventions. .

a13- Describe pre-, peri and post-operative care, pain relief and palliative care.

a14- Describe the natural history of common illness and evaluation of the importance of risk factors and disease prevention.

a15-Discuss principles, indications, relative advantages & disadvantages of various management strategies applied to common clinical situations.

a16- Explain pharmacological principles of treatment including: drug effects/Pharmacokinetics, dosage, drug-drug interaction and adverse reactions.

a17-Underline selected complementary therapies.

a18- Clarify efficacy of traditional and non-traditional therapies.

a19- Demonstrate the basic knowledge of epidemiologic methods and statistical principles that underline evidence based medicine.

a20-Describe normal human psychosocial development across the life span and recognize deviations requiring further evaluation and intervention.

a21- Discuss the application of psychodynamic theories of human thought and behavior in describing and analyzing patient behavior.

a22- Identify possible nature of disability, its impact on community and the principles of management including: rehabilitation, institutional and community care.

a23- Discuss the principles governing ethical decision making in clinical practice and the major ethical dilemma in medicine.

a24- Recognize the implications of cultural, social, economic, and historical contexts for patient care.

a25- Mention the principles of medico legal aspects of medical practice

a26-Express English language as needed for appropriate learning and communication.

a27-Express basic computer knowledge needed to support literature retrieval and learning.

a28- Recognize the Egyptian National Health Care System.

a29- define the principles of clinical audit.

B-Intellectual skills

By the end of the program, the graduate will have acquired the skills to:

b1-Interpret symptoms and physical signs in terms of anatomic, pathologic and functional diagnostic significances.

b2-Apply principles of basic medical sciences to clinical problems using Evidence-Based Medicine.

b3-Identify problem and select the most appropriate and cost effective diagnostic procedures for each problem.

b4-Interpret the results of commonly used diagnostic procedures(laboratory and radiological).

b5-Demonstrate the ability to reason deductively in solving clinical problems

b6-Formulate hypotheses and judge prioritization of the common possibilities for each problem.

b7- Design appropriate patient management plan (both diagnostic and therapeutic) according to integrated history, physical and laboratory findings.

b8- Exhibit clinical decision skills that weigh the pros and cons of the proposed interventions.

b9- Assess patients with life / organ threatening conditions and institute first aid and initial therapy.

b10-Apply principles of sterilization and infection control regulations on hospital and community levels.

b11- Apply principles of disease surveillance and screening, communicable disease control, health promotion, and health needs assessment.

b12- Evaluate the need to engage in lifelong learning to stay abreast of relevant scientific advances

b13- Recognize common medical errors and malpractice.

b14-Formulate a research question.

b15-Apply the basic principles of biostatistics.

b16- React to situations of uncertainty by proper counseling.

b17- Assess risk factors that affect course of the disease in order to determine management plan.

b18-manage time and resources effectively.

C-Professional and Practical Skills

By the end of the program and house officer training the graduate will have acquired the skills to:

C1- Perform essential practical skills in basic medical sciences e.g. reading histological and pathological stained smears; staining and reading microbiological slides and performing biochemical tests

C2- Obtain and document a complete or focused medical history in the outpatient, inpatient and in emergency settings.

C3- Perform and record a complete or focused physical and mental examination.

C4- Perform basic clinical procedures as venipuncture, inserting an intravenous catheter, inserting a nasogastric tube, inserting a Foley's catheter, and suturing lacerations under supervision ; administer childhood vaccine and perform bedside laboratory tests.

C5- Prescribe safe treatment for patients with common diseases as well as those in acute emergencies considering patients, age, weight and health status.

C6-Diagnose medical situations that are immediately life threatening

C7- Perform basic Life support adequately .

C8- Ensure the cost effectiveness of health care management.

C9-Report any physical or mental conditions related to himself, colleagues or any other person that might jeopardize patient safety. '

CI0- Implement a patient management plan that includes attention to health promotion and disease prevention.

C11-Effeciently diagnose health problems faced during field visits.

D-General and transferable skills:

By the end the program, the graduate will have acquired skills to:

d1-Establish professional relationships with patients, their families (when appropriate) and community that are characterized by understanding, trust, respect, empathy and confidentiality.

d2- Summarize clearly and accurately patient findings in verbal presentations, written and electronic forms .

d3- Educate patients about their health problems and motivate them to adopt health promoting behaviors.

d4- Write clear and concise medical records including: admission sheets, progress notes, and physician orders, referrals for consultation, discharge summaries and follow up notes.

d5- Achieve consensus and option informed consent from the patient's surrogate for the treatment plan.

d6- Conduct effective end of life communication.

d7 – Communicate ideas and work effectively as part of a health care team and as a leader with appreciation for the contributions of other health care professionals and agencies to maximize the benefits to patient care and outcomes, and minimize the risk of error.

d8- Perform database searches, retrieve information, analyze numerical data, manage and utilize biomedical information by all means including electronic means for solving clinical problems based on evidence (EBM).

d9-Adopt lifelong self directed learning.

d10-Recognize one's personal abilities and limitations knowing when and how to ask for senior consultation.

d11-Demonstrate social awareness and commitment to the welfare of the underserved communities (rural, urban underserved, and elderly) and willingness to care for the elderly.

d12-Recognize the ethical and legal issues involved in patient –doctor communication and communicate effectively with patients regardless of their social, cultural backgrounds or their disabilities.

d13-Recognize and respond professionally to various common forms of behavioral and emotional presentations.

d14- Communicate effectively with patients during healthcare centers visits.

d15- Evaluate his own and others work through construction feedback.

d16- Effectively manage time and resources and set priorities.

d17- Cope with changing work environment.

d18-Solve problems related to patients, work management and among colleagues.

E-Attitude

By the end of the program, the graduate will acquire the ability to:

e 1- Empathize compassionate treatment of patients, and respect of their privacy and dignity.

e2- Consider patient needs and priorities, particularly when in conflict with the student's

e3- Display a professional image in manner, dress, speech and inter personal relationship that is consistent with the accepted contemporary medical profession standards

e4- Commit with ethics of physicians and exhibit integrity in relationships in all aspects of medical practice.

e5- Respect the role of other health care professionals, and collaborate with others in caring of individual patients.

3- Academic Standards:

3a. External references for standards :

The National Academic Reference Standards (NARS) for medicine approved by the National Authority for Quality Assurance and Accreditation of Education (January 2009) is used as the academic reference standards

3b. Comparison of Provision to selected external references :

1-The objectives and goals in the current program are comparable with other programs in other national medical schools.

2-The objectives in the current program are comparable with that put by the National Authority for Quality Assurance and Accreditation of Education (annex 1).

3-Family medicine and community based medicine are highlighted in the current program.

4- Curriculum Structure and Contents

4.a- Programme duration (years) :

6 years + Pre-Registration House Officer (PRHO) training year.

4.b- Programme structure:

1- pre-clinical stage (years 1-3)

2- clinical stage (years 4-6)

Curriculum composition and duration

The program includes 27 compulsory courses :

d- 22 major compulsory courses (Anatomy and Embryology I&II - Histology I &II - Physiology and Biophysics I&II - Biochemistry I&II – Pathology – Pharmacology - Microbiology & Immunology – Parasitology – Ophthalmology - E.N.T- Forensic medicine & Toxicology - Community medicine - - Internal medicine – Pediatrics - General Surgery- Obstetrics & Gynecology.

e- 2 minor compulsory courses (English- Behavioral and Human Sciences).

f- 2 minor compulsory courses (ICDL- Human rights) which are Menoufiya University requirements bylaw….. ICDL is a license which could be taken at any time of the program.

The sum of the marks of the 22 major compulsory courses + only one minor compulsory course (Behavioral and Human Sciences) gives the total cumulative marks of the program (= 6350 marks)

Each of the courses of English & Human rights is studied as lectures for 1 hour/w. for 30 weeks = 30 x 2 = 60 h./year in the first year of the program & their marks are not added to the total program marks.

Curriculum composition and duration

code	Course	No. of study hours of the course			No. of study weeks
		Theoretical (Lectures)	Practical clinical / lab. Field	Total	
MFM-I 01	Anatomy & Embryology I	120	120	240	30
MFM-I 02	Histology I	60	60	120	30
MFM-I 03	Physiology & Biophysics I	150	57 3	210	30
MFM-I 04	Biochemistry I	75	60	135	30
MFM-I 05	English Computer	30 30	------ --------	30 30	30 30
MU-HR	Human rights	30	-------	30	30

M.B.B.Ch. Program & course specifications 2010

code	Course	No. of study hours of the course			No. of study weeks
		Theoretical (Lectures)	Practical clinical / lab.	Field / Total	
MFM-II 01	Anatomy & Embryology II	120	120	240	30
MFM-II 02	Histology II	60	60	120	30
MFM-II 03	Physiology & Biophysics II	150	57	3 / 210	30
MFM-II 04	Biochemistry II	75	60	135	30
MFM-II 05	Psychiatry and behavioural Sciences	30	--------	30	30
MFM- III	Pathology	120	120	240	30
MFM- III 02	Pharmacology	120	60	180	30
MFM- III 03	Microbiology & Immunology	90	60	150	30
MFM- III 04	Parasitology	60	54	6 / 120	30
MFM- IV 01	Ophthalmology	80	80	160	32
MFM- IV 02	E.N.T	64	40	104	32
MFM- IV 03	Forensic medicine & Toxicology	80	80	160	32
MFM- IV 04	Community medicine	128	80	208	32
MFM-V 01	Internal medicine	216	240	456	36

M.B.B.Ch. Program & course specifications 2010

code	Course	No. of study hours of the course			No. of study weeks
		Theoretical (Lectures)	Practical clinical / lab. Field	Total	
MFM -V 02	Pediatrics	108	120	228	36
MFM -VI 01	General Surgery	216	240	456	36
MFM -VI 02	Obstetrics & Gynecology	108	120	208	36
Total		2350	1900	4250	

code	Course	Marks of the course				Remarks
		Periodic 20%	Written 50%	Prac./clinical & oral 30%	Total	
MFM-I 01	Anatomy & Embryology I	50	125	75	250	
MFM-I 02	Histology I	30	75	45	150	
MFM-I 03	Physiology & Biophysics I	50	125	75	250	
MFM-I 04	Biochemistry I	30	75	45	150	
MFM-I 05	English	-----	30	-------	30	Not added
MU-HR	Human rights	------	30	---------	30	Not added
MFM-II 01	Anatomy & Embryology II	50	125	75	250	
MFM-II 02	Histology II	30	75	45	150	
MFM-II 03	Physiology &	50	125	75	250	

M.B.B.Ch. Program & course specifications 2010

code	Course	Marks of the course				Remarks
		Periodic 20%	Written 50%	Prac./clinical & oral 30%	Total	
	Biophysics II					
MFM-II 04	Biochemistry II	30	75	45	150	
MFM-II 05	Psychology and Behavioral medicine	--------	50	-------	50	only Written exam
MFM- III 01	Pathology	60	150	90	300	
MFM- III 02	Pharmacology	60	150	90	300	
MFM- III 03	Microbiology & Immunology	40	100	60	200	
MFM- III 04	Parasitology	30	75	45	150	
MFM- IV 01	Ophthalmology	50	125	75	250	
MFM- IV 02	E.N.T	40	100	60	200	
MFM- IV 03	Forensic medicine & Toxicology	40	100	60	200	
MFM- IV 04	Community medicine	60	150	90	300	
MFM-V 01	Internal medicine	180	450	270	900	
MFM -V 02	Pediatrics	100	250	150	500	
MFM -VI 01	General Surgery	180	450	270	900	

code	Course	Marks of the course				Remarks
		Periodic 20%	Written 50%	Prac./clinical & oral 30%	Total	
MFM -VI 02	Obstetrics & Gynecology	100	250	150	500	
Total marks of the program					6350	

Attached

Anatomy and Embryology I 1st Year

Taught hours : Lectures: 120 Practical: 120 Total: 240

3-Course content

Topic	Total hours %	Number of hours	
		Total lectures	Practical groups
Topics actually taught			
1.Introduction: 1. Bones (types and general features). 2. Joints (types). 3. Skin	10%	12	

Topic	Total hours %	Number of hours	
		Total lectures	Practical groups
4. Muscles, Anatomical planes & Terminology			
2.Upper limb: 1. Bones of upper limb (clavicle, scapula, humerous). 2. Pectoral region (breast, muscles and fascia). 3. Axilla (boundaries and contents). 4. Back (muscles and intermuscular spaces). 5. Shoulder region (muscles, vessels and nerves). 6. Anterior compartment of arm (muscles, vessels and nerves). 7. Posterior compartment of arm (muscles, vessels and nerves). 8. Cubital fossa (boundaries and contents). 9. Bones of forearm (general and special features of radius and ulna). 10. Front of forearm (muscles, vessels and nerves). 11. Back of forearm (muscles, vessels and nerves). 12. Hand (muscles, retinaculum, vessels and nerves). 13. Joints (type, ligaments, movements, nerve supply, blood supply and applied anatomy). 14. Nerve injury (brachial plexus, ulnar, radial and median nerves injury).	23.5%	28	44

Topic	Total hours %	Number of hours	
		Total lectures	Practical groups
15.Applied & radiological anatomy			
3.Thorax: 1. Chest wall (intercostal muscles, nerves and vessels). 2. Mediastinum (boundaries and contents). 3. Lung (shape, fissures, surface anatomy, blood and nerve supply) & Pleura (recesses, surface anatomy). 4. Pericardium (function and sinuses) 5. Heart (Rt ventricle, Lt ventricle, Rt atrium, Lt atrium) & its blood supply (Rt coronary, Lt coronary, venous drainage of heart). 6. Great vessels (arch of aorta, SVC, IVC and descending aorta) & nerves (phernic, vagus and sympathetic chain). 7. Thoracic duct (length, coarse, drainage and relations). 8. Thoracic part of trachea (length, coarse, constrictions, blood, nerve supply and relations 9. Thoracic part of esophagus (length, coarse, constrictions, blood, nerve supply and relations).	37%	44	52
4.Abdomen & Pelvis: 1. Anterior Abdominal wall (skin, fascia, muscles, vessels and nerves). 2. Peritoneum (def, compartments, recesses	**16%**	**20**	**24**

Topic	Total hours %	Number of hours	
		Total lectures	Practical groups
and lesser sac). 3. Stomach (features, shape, blood, nerve supply and surface anatomy). 4. Spleen (site, impressions blood nerve supply and applied anatomy) & Ceoliac trunk (origin and branches splenic, hepatic and LT gastric artery). 5. Pancreas (features, relations, blood and nerve supply) & duodenum (parts, relations, blood and nerve supply). 6. Small intestine) (length, parts, blood nerve supply and peritoneal covering). 7. Large intestine (features, parts, mesentery, blood and nerve supply). 8. Superior & inferior mesenteric vessels (beginning, coarse, relations, termination and branches). 9.Liver (site, lobes, features, relations, perotineal covering, blood, nerve supply and surface anatomy). 10.Extrahepatic biliary system (common hepatic duct, cystic duct, conmon bile duct). 11.Portal circulation (origin, coarse, termination and tributaries) & portosystemic anastmosis 12. Kidney (site, features, blood, nerve supply and surface anatomy). 13. Suprarenal gland (site, blood, nerve supply and relations). 14. Ureter (length, constrictions, blood, nerve supply and surface marking).			

Topic	Total hours %	Number of hours	
		Total lectures	Practical groups
15. Posterior abdominal Wall (muscles and fascia). 16. Bony pelvis (hip bone and sacrum) 17. Muscles of the pelvis (levator ani and coccygeus muscles). 18. Pelvic viscera (rectum, anal canal, UB, urethra, vas defferance,uterus, vagina, prostate). 19. Blood supply of the pelvis (internal iliac vessels, anterior and posterior iliac vessels). 20. Pelvic peritoneum (superficial and deep pouches and internal pudendal canal).			
5.Embryology: 1. Male genital system. 2. Female genital system. 3. Gametogenesis (spermatogenesis and oogenesis). 4. Ovarian cycle (duration and stages). 5. Menstrual cycle (stages and its duration). 6. First week of pregnancy. 7. Second week of pregnancy. 8. Third week of pregnancy 9. Fetal membranes. 10. Placenta (features and anomalies). 11. Twins. 12. Development and anomalies of G.LT.	13.5%	16	

Topic	Total hours %	Number of hours	
		Total lectures	Practical groups
TOTAL	100%	120	120

HISTOLOGY I 1st Year

Taught hours:

Lecture: 60 hours **Practical: 60 hours** **Total: 120 hours**

Topic	Hours for lectures	Hours for practical	Total hours per year
1 -Introduction and microtechniques	6	4	10
2- Cytology and Cytogenetics	12	10	22
3- Epithelium	6	4	10
4- connective tissue	4	4	8
5- Cartilage	4	4	8
6- Bone	4	6	10
7- Blood & haemopoiesis	4	4	8
8- Muscle tissue	4	6	10
9- Nerve tissue	6	8	14
10-Cardiovascular system	4	4	8
11 -Lymphatic (immune) system	6	6	12
	60	60	120

Course contents

TOPICS:

1 : Introduction and Microtechniques:

- Preparation of tissues for microscopic examination
- Light microscopy (principles& types)
- Magnification and resolution
- Electron microscopy (Transmission, TEM, and Scanning, SEM,)

- Problems in interpretation of tissue sections
- Radioautography and cell fractionation techniques
- Histochemistry, Cytochemistry and immunocytochemistry

2 : Cytology and Cytoqenetics:

***Cytology:**

- Cell membrane (plasma membrane) and glycocalyx (LM & EM, Molecular structure, Functions, Endocytosis and Exocytosis; Receptors and signaling reception).
- Mitochondria (LM & EM, Membrane enzymes, Elementary particles, Mitochondrial DNA & RNA, Functions)
- Ribosomes (LM & EM, Free and attached, Polysomes, chemical composition, Functions)
- Endoplasmic reticulum (Rough & Smooth , LM & EM, Functions)
- Golgi apparatus (LM & EM, Functions)
- Lysosomes (LM, histochemical reactions & EM, Origin, Types and Fate, Functions)
- Peroxisomes (LM, histochemical reactions, & EM, Origin, Types, Functions)
- Anuulate lamellae, Coated vesicles and endosomes.
- Cytoskeleton (Microfilaments, Intermediate filaments and Microtubules)
- Centrioles, Cilia and Flagella
- Cytoplasmic inclusions (Stored food, pigments)
- Cytosole (Cytomatrix)
- Nucleus of interphase (Nuclear envelope, Chromatin, Nucleolus, Nuclear sap)
- Microvilli, Stereocilia and terminal web
- Cell (intercellular) junctions (Macular, Zonular & Fascial junctions, Occludens & Adherens Junctions and Gap junction)
- Cell death (necrosis versus apoptosis)

***Cytogenetics :**

- The cell cycle (Interphase G1, S & G2 and mitosis)
- Cell division, Mitosis (Events, Mitotic chromosomes, Mitotic spindle, Phases) & meiosis
- Nucleic acids, DNA & RNA (Chemical composition, Structural differences, nucleotides & genes, codons & anticodons, protein synthesis, transcription, translation, replication & Types of RNA)
- Chromosomal number & sex chromosomes
- Karyotyping & classification of chromosomes
- Structure of chromosomes
- Sex chromatin
- Abnormalities of cell division
- Causes of chromosomal aberrations
- Aberrations in chromosomal number e.g. Mongolism
- Aberrations in chromosomal structure
- Aberrations of sex chromosomes e.g. Turner & Kleinfelter syndromes

3 : Epithelium:

- General characteristics of epithelium & its types

- Types of simple epithelium (structure & sites)
- Transitional epithelium
- Structure & sites of stratified squamous & stratified columnar epithelium
- Glandular epithelium with reference to sites
- Neuro- and myo-epithelium with reference to sites
- General functions of epithelium
- Modifications of epithelial cells surfaces: Apical, basal & lateral modifications
- Basement membrane

4: Connective Tissue:

- General characteristics
- Cells of C.T. proper (LM, EM & functions)
- Fibers of C.T.
- Ground substance
- Types of C.T. proper with reference to sites
- General functions of C.T. proper
- Adipose Tissue

5: Cartilage:

- Types of cartilage
- Histology of each type
- Sites of each type
- General functions

6 : Bone:

- Types of bone with reference to sites
- Methods of preparation of bone sections
- Bone cells & their functions
- Intercellular substance (components & chemical composition)
- Histology of compact bone
- Histology of spongy bone
- Differences between cartilage & bone
- Ossification (intramembranous & intracartilagenous)

7 : Blood & Hemopoiesis:

- Components of Blood
- Staining of blood cells
- Normal structure, size & number of erythrocytes , ultrastructure & functions
- Abnormalities in structure, size & number of RBCs
- Polycythaemia & anaemia and their causes
- Types of WBCs & normal percentage of each
- Total RBCs count
- Total leucocytic count & its clinical importance

- Differential leucocytic count & its importance
- Structure (LM & EM) & function of WBCs
- Structure (LM & EM) & function of platelets
- Types & structure of bone marrow
- Erythropoiesis
- Granulopoiesis
- Development of lympocytes
- Development of monocytes
- Development of platelets
- Blood groups

8 : Muscular Tissue:

- General histological characteristics and types of muscle tissue
- Skeletal muscle fibers (LM , EM) & molecular structure
- Types of skeletal muscle fibers
- Mechanism of muscle contraction
- Smooth muscle fibers (LM & EM)
- Cardiac muscle fibers (LM & EM)
- Conducting system of heart

9 : Nervous Tissue:

- Types (classification) of neurons & examples
- EM of nerve cell body (Perikaryon) Dendrites & axons
- Types of nerve fibers with examples
- Histology of peripheral nerve fibers
- Structure of nerve trunk
- Spinal & autonomic ganglia
- Synapse
- Degeneration & Regeneration of nerve fibers
- Neuroglia (Definition, Classification & Sites)
- Structure & function of proper neuroglia cells
- Receptors & its types:

-somatic and visceral receptors (mechanoreceptors , thermoreceptors and pain)
-proprioreceptors (muscle and tendon spindles)
-chemoreceptors (taste buds and olfactory mucosa)

10 : Vascular System:

- General structure of blood vessels & its significance
- Large, medium sized & small arteries
- Small, medium sized & large veins
- Types, sites & structure of Arteriovenous connections

11 : Lymphatic (Immune) System:

- Cells involved in the immune system & their functions
- Antigen presenting cells
- Primary & secondary immune response
- Cellular & Humeral immunity
- Lymph vessels & distribution of lymphoid tissue
- Structure of Lymph node & its immunological function
- Structure of Spleen & its function
- Differences between lymph node & spleen
- Blood supply of spleen & theories of circulation
- Structure of Tonsils
- Structure & functions of thymus
- Thymic barrier

Medical physiology I 1st year

Taught hours : Lectures: 150 Practical: 60 Total: 210

Course contents and taught hours/week

Week	Title (Topic)	Theoretical classes		Practical classes	
		Lectures	Time (hours)	practical	Time (hours)
1st	Introduction	-Composition of the human body -Measurements of the body fluid compartments -Units for measuring the concentration of the solutes in body fluids	5	Introduction to physiology lab.	2
2nd	Introduction	physiology of the cell & cell membrane -Membrane transport Cellular connections	5	Introduction to physiology lab.	2
3rd	Blood	-Introduction & function of blood -Plasma proteins	5	Hematocrite value	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		Lectures	Time (hours)	practical	Time (hours)
4th	Blood	-RBC's & anemia -Platelets & Hemostasis	5	Hb determination	2
5th	Blood	-WBC's -Blood groups -Immunity	5	Blood indices	2
6th	Blood		5	Bleeding time	
7th	Autonomic nervous system	-Classification of nervous system (anatomical & physiological) -Reflex arc (somatic & autonomic) -Autonomic ganglia -Sympathetic nervous system (distribution and functions) -Stress (alarm) response	5	Clotting time	2
8th	Autonomic nervous system	-Parasympathetic nervous system (distribution and functions) Central -integration of autonomic functions -Cholinergic division of autonomic nervous system (acetyl choline)	5	Blood groups	2
9th	Autonomic nervous system	-Drugs affecting parasympathetic nervous system -Adrenergic division of autonomic nervous system (noradrenalin) -Drugs affecting sympathetic nervous system	5	ESR	2
10th	Physiology of the nerve	-Strength-duration curve	5	Simple muscle twitch (SMT)	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		Lectures	Time (hours)	practical	Time (hours)
		-RMP - Action potential			
11th	Physiology of the nerve	Effect of subthrethold stimulus -Excitability changes during AP -Thermal changes the nerve -Conduction of nerve impulses	5	-Effect of temperature on SMT	2
12th	Physiology of the nerve	- Neuromuscular transmission -Factors affecting & MEPP	5	-Effect of Fatigue on SMT	2
13th	Physiology of the muscle	--Physiological anatomy of skeletal muscle Mechanical changes (excitation-contraction coupling) -Metabolic & thermal changes	5	Effect of 2 successive stimuli on SMT	2
14th	Physiology of the muscle	Types of sk. muscle contraction -Factors affecting skeletal muscle contraction	5	-Effect of multiple successive stimuli on SMT	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		Lectures	Time (hours)	practical	Time (hours)
15th	Physiology of the muscle	-Effect of denervation of skeletal muscle - Physiology of Smooth muscle	5	-Gradation of strenghth	2
16th	Respiration	-Physiological anatomy of respiratory system -Mechanism of respiration -Intrapleural pressure -Respiratory surfactant	5	-Compliance	2
17th	Respiration	-Work of breathing -Lung volumes and capacities -Dead space -Pulmonary function tests -Exchange of gases across -Respiratory center	5	-Acclimatization to high altitude -Effect of muscular exercise on respiration	2
18th	Respiration	-Chemical regulation of respiration -Nervous regulation of respiration	5	-Lung volumes and capacities	2
19th	Respiration	Hypoxia & cyanosis -Acclimatization to high altitude -Effect of muscular exercise on respiration	5	Pulmonary function tests	2
20th	Digestive system	-Structure, innervations & regulation of function of GIT -Salivary secretion -Swallowing	5	Effect of drugs on movement of small intestine of rabbits	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		Lectures	Time (hours)	practical	Time (hours)
21st	Digestive system	-The stomach -The pancreas -The gall bladder -The liver	5	Effect of drugs on movement of small intestine of rabbits	2
22nd	Digestive system	-Jaundice - small intestine	5	Effect of drugs on movement of small intestine of rabbits	2
23rd	Digestive system	Absorption in the GIT -large intestine -GIT hormones	5	Effect of drugs on movement of small intestine of rabbits	2
24th	Cardiovascular system	-Properties of the cardiac muscle	5	Arterial pulse	2
25th	Cardiovascular system	-ECG -Cardiac arrhythmias -Heart sounds	5	ECG	2
25th	Cardiovascular system	-Cardiac cycle -arterial pulse -central venous pressure	5	Measurement of ABP	2
27th	Cardiovascular system	-The heart rate -Cardiac output & measurement	5	effect of exercise and posture on ABP	2
28th	Cardiovascular system	-Blood flow & its measurement -Arterial blood pressure (ABP)	5	-Cardiovascular adjustment in health and disease	2
29th	Cardiovascular system	-Venous circulation -Capillary circulation -Pulmonary circulation	5	Hiss test	2
30th	Cardiovascular system	Lymphatic circulation -Coronary circulation -Cutaneous circulation -Cerebral circulation -Fetal circulation -Hemorrhage & Shock	5	-Effect of exercise of cardiovascular functions	2
	Total 210 hours		150		60

Medical Biochemistry 1st year

Total teaching hours: Lectures: 75 practical: 60 Total: 135 hours

a-Course contents:

Contents:

Subjects	Lecture	Practice& Tutorial	Total Hours
1-Biophysical chemistry.	6	4	10
2-Chemistry of Carbohydrates.	8	8	16
3-Chemistry of Lipid.	8	8	16
4-Chemistry of Protein.	8	8	16
5-Chemistry of Hemoglobin	2	2	4
6-Chemistry of Nucleic acids.	4	2	6
7-Molecular Biology.	12	10	22
8-Cancer and Oncogenes.	4	2	6
9-Cell Cycle and Apoptosis.	2	2	4
10-Biological membranes.	4	2	6
11-Minerals.	6	4	10
12-Enzymes.	6	4	10
13-Free radicals and antioxidants	3	2	5
14-Nutrition	2	2	4
Total Hours	75	60	135

B) Lectures:

1) Biophysical chemistry:

1- Molecular structure of water.

2- Different types of bonds.

3- Solution.

4- pOH and pH.

5- Acids and bases.

6- Normal and molar solutions.

7- Buffers and mechanisms of buffer action.

8- Osmotic pressure and surface tension.

9- Adsorption, elution and dialysis.

10- Diffusion.

11- Expression of concentration.

2) Carbohydrates:

1. Definition, functions and classification: Monosaccharide, disaccharides and polysaccharides

2. Monosaccharide: Classification, structures and physical and chemical properties. Sugars exhibit various forms of isomerism.

3. Monosaccharide of physiological importance: glucose, fructose, galactose and mannose.

4. Glycoside formation with each other and with other compounds.

5. Sugar derivatives of importance: sugar acids, sugar alcohols, amino sugars and deoxysugars.

6. Disaccharides: maltose, sucrose, and lactose.

7. Polysaccharides starch, glycogen, cellulose and inulin.

8. Glycosaminoglycans (mucopolysaccharide): Structure, functions and classification.

9. Glycoprotein (mucoprotein) and proteoglycan.

3) Lipids:

1. Lipids of physiological functions - Definition, classification and general function.

2. Fatty acids: Saturated and unsaturated, w3 and w6 PUFA, OH fatty acids and methyl fatty acids.

3. Triacylglycerol the main storage form of lipids.

4. Waxes.

5. Phospholipids: phosphatidyl compounds- sphingomylines. Importance and functions.

6. Glycolipids.

7. Sterols: ergosterol and cholesterol, 7-dehydrocholesterol, vitamin D, bile acids and steroid hormones.

8. Eicosanoids: prostanoids, prostaglandins, prostacyclins, thromboxanes, leukotrienes and lipoxins.

9. Polyprenoids: share the same parent cholesterol, ubiquinone and dolichol

10. Isopernoids: fat soluble vitamins and carotenes

11. Lipid peroxidation and antioxidants.

4) Amino acids and proteins:

1. Amino acids: classification according to different parameters: Essentiality, polarity, nutritionally, and structural.

2. Properties: optical activity, amphoteric and general properties, peptide formation (examples - glutathione- insulin etc) - derived compounds.

3. Biochemical importance and functions of proteins: structural -defense - enzymes - transport - regulation - some hormones.

4. Conformation of the proteins: primary. secondary, tertiary, quaternary - domains - motifs denaturation.

5. Classification: simple - conjugated.

6. Methods of proteins separation.

5) Chemistry of Hemoglobin:

Chemistry of Hemoglobin and Myoglobin, structural function of hemoglobin, hemoglobin derivatives - types of hemoglobin - cytochromes – catalases.

6) Nucleic acids:

Chemistry of nucleic acids: nitrogenous bases: purines and pyrimidines, tautomerization of bases, nucleosides, nucleotides and their analogues.

7) Molecular biology:

1. DNA: structure, function and denaturation .RNA: structure, function and types

2. DNA organization (histones, nucleosome, chromatin, chromosomes, mitochondrial DNA), rearranged genetic material, DNA replication, cell cycle and repair.

3. RNA synthesis, posttranscriptional processing and modification.

4. Protein synthesis, genetic code, mutation and posttranslational processing.

5. Regulation of gene expression (operon model), histones acetylation, methylation of DNA, enhancers, repressors, reporter gene, motifs of regulatory proteins, gene amplification and rearranged.

6. Recombinant DNA technology (genetic engineering), restriction enzymes, cloning, blotting and hybridization techniques, DNA sequencing, polymerase chain reaction (PCR), applications of recombinant DNA technology.

8) Cancer and oncogenes:

1- Causes of cancer.

2- The role of oncogenes in carcinogenesis.

3- Proto-oncogenes and the mechanisms to be converted to oncogenes.

4- Mechanisms of action of oncogenes.

5- Tumor suppressor genes.

9) Cell cycle and Apoptosis:

1- Cell cycle: The resting phase and the different phases of cell cycle.

2- Control of cell cycle: Cyclins and cyclin-dependent kinases.

3- Apoptosis: receptor-mediated apoptosis.

10) Biological membranes:

1. Biological membranes (functions and characters).

2- Membrane structure (lipid, protein and carbohydrates).

3- Membrane transport (active and passive, endo and exocytosis).

4- Signals transmission across membranes.

5- Mutations affecting membrane proteins.

11) Minerals:

1- Macro minerals (Calcium, phosphorus, magnesium, sodium potassium, chloride).

2- Micro minerals (trace elements) (iron, cupper, zinc, manganese, cobalt, iodine, fluoride, selenium, molybdenum, chromium, boron, cadmium, aluminum).

12) Enzymes:

1. Nature of enzymes: protein mainly - ribozymes.

2. Mechanism of actions

3. Specificity.

4. Nomenclature and classification.

5. Coenzyxnes and activators

6. Isoenzymes and zymogens.

7. Enzyme units - activity - specific activity - factors affecting enzyme activity.

8. Enzyme kinetics Michaelis constant km and its significance, V max, Lineweaver -Burk plot (double reciprocal plot) and determinations of km and Vm.

9. Inhibitors: different types and their effect on km and Vm

10. Regulation of enzyme activity.

11. Application and significance of enzyme assay in medicine.

13) Free radicals and antioxidants:

1- Free radicals (sources, toxic effects on tissues).

2- Antioxidants (types and their roles in prevention and treatment of chronic diseases and cancer).

14) Nutrition:

1- Energy requirements.

2- Carbohydrates, lipids, amino acid (nitrogen), fibers, minerals and vitamins requirements.

B) Practical classes:

1. Laboratory orientation includes identification of biochemical reagents and instruments that are used in biochemistry laboratory

2. Studying physical and chemical properties of carbohydrates and individual sugars. Tests for carbohydrates includes: Molish,s test, iodine test, hydrolysis test, Benedict test, Fehling test and Barfoed,s test.

3. Studying physical and chemical properties of lipids and fatty acids.

4. Color reactions of proteins includes: Biuret test, heat coagulation test, acidification test, Xanthoprotiens test, Millon test and Rosenheim test. Identification of unknown protein

5. General scheme for identification of unknown solution.

ENGLISH

Taught hours: 30 hours lectures

Subject	Lectures (hours)	Tutorial /Practical (hours)	Total (hours)
1. Medical History	3	-	3
2. The profession of Medicine	3	-	3
3. Doctor Patient Relationship	3	-	3
4. Preventive Medicine	3	-	3
5. Anatomy of the skull	3	-	3
6. The common Cold	3	-	3
7. Heat Exhaustion	3	-	3
8. Verbs and Tenses	3	-	3
9. Special Terms	3	-	3
10. Healthcare systems	3	-	3
Total	**30**	**-**	**30**

Human Rights

Taught Hours : 30 Hours

Subject	Lectures (hours)	Total (hours)
Nature of human rights law	1	1
National resources for human rights	1	1
International resources for human rights	1	1
Types of human rights	1	1
Restrictions on human rights	1	1
Women rights	2	2
Child rights	2	2
People with Special needs rights	1	1
International system for protection of human rights	1	1
Securities & mechanisms of human rights in the national constitutional & law systems	1	1
Protections of human rights in national law and protection of intellectual property & publishing rights	4	4
Professional & Categorical duties & responsibilities in medical field.	8	8
Professional & Categorical duties & responsibilities in educational field.	2	2
Professional & Categorical duties & responsibilities in intellectual & media fields	2	2
Professional & Categorical duties & responsibilities in scientific & engineering and agricultural fields	2	2
Total	**30**	**30**

Anatomy & Embryology 2nd Year

Taught hours : Lectures: 120 Practical: 120 Total: 240

Topic	Number of hours		
Topics actually taught	lectures	Practical groups	Total hours
1.Head and Neck: 1. SCALP (layers, blood supply, nerve supply and lymphatic drainage) 2. Face (muscles, nerve supply , blood supply and lymphatic drainage) 3. Posterior triangle (boundaries and contents). 4. Anterior triangle (boundaries and contents). 5. Cranial cavity (Dural folds and sinuses). 6. Orbit (boundaries and contents). 7.Submandibular region (gland and lymph nodes) 8. Parotid region (extent, capsule, features, relations, structure within the gland, parotid duct, nerve supply and surface anatomy), 9. Infratemporal fossa (muscles of mastications, mandibular nerve, maxillary nerve, sphenopalatine ganglion; otic ganglion and maxillary artery). 10. Thyroid gland (shape, capsule,	46	58	104

Topic	Number of hours		
Topics actually taught	lectures	Practical groups	Total hours
features, relations, nerve supply, blood supply, lymphatic drainage and applied anatomy). 11. pharnx (muscles, sagittal section and palatine tonsil). 12. Nose (lateral wall, arterial, nerve and lymphatices). 13.Larynx (cartilage, ligaments and muscles). **14.** Mouth cavity (tongue muscles, blood supply, nerve and lymphatices) 15. Cranial nerves (7^{th} , $9^{th,}$ 10^{th} and 12^{th}). 16. blood supply & venous drainage of head and neck			
2.Neuroanatomy: 1. Development of the nervous system and congenital anomalies. 2. Medulla, Pons and Midbrain (ventral and dorsal surface). 3. Fourth ventricle (boundaries. foramina, communications, cranial nerve nuclei in its floor and choroid plexus) and cerebellum (features, subdivisions and arterial supply). 4. Vertebrobasilar system& circle of Willis (site, formation; anatomical and clinical importance). 5. Diencephalon (boundaries,	24	28	52

Topic	Number of hours		
Topics actually taught	lectures	Practical groups	Total hours
divisions and arterial supply) and third ventricle (boundaries, recesses. communications, choroid plexus) 6. Arterial supply of the brain; (internal carotid artery, anterior cerebral artery, middle cerebral artery and posterior cerebral artery) arteries) 7. Venous drainage (superior cerebral veins and deep cerebral veins, and CSF (volume, composition, circulation, formation, absorption, function and clinical notes). 8. Brain stem: internal structure 9.Cerebellar connections 10.Thalamus (boundaries, classification of thalamic nuclei,connection of thalamaic nuclei, arterial supply and thalamaic nuclei) Internal capsule 11. Cerebral hemisphere (sulci, gyri and higher brain functions) 12. Basal ganglia& lateral ventricle (boundaries, connections, foramina and choroid plexus). 13. Nerve fibers in CNS and the limbic system (component and function). 14. Spinal cord Ascending tracts (gracile and cuneate . tract, ventral			

Topic	Number of hours		
Topics actually taught	lectures	Practical groups	Total hours
and dorsal spinocerebellar tracts; lateral spinothalamic tract, ventral spinothalamic tract). 15. Pathway of each tract. 16. Trigeminal system (sensation from the face and trigeminal plexus). 17. Motor systems & descending tracts (lateral and ventral corticospmal tracts, rubrospinal and tectospinal rract; lateral and medial vestibulospinal tract; pontine and medullary reticulospinal tracts and descending autonomic fibers).			
3.Lower limb: 1- Bones of Lower limb (hip bone, femur, tibia; fibula and foot). 2. Front of the thigh (fascia, muscles, vessels and nerves). 3.-Medial aspect of the thigh (muscles, vessels and nerves) 4. gluteal region (muscles, vessels and nerves), 5. Popliteal fossa (bounderies and contents). 6.Back of the thigh (muscles, vessels and nerves) 7.Anterior compartment of the leg (muscles, vessels and nerves) 8. Dorsum of the foot (muscles,	24	34	58

Topic	Number of hours		
Topics actually taught	lectures	Practical groups	Total hours
vessels and nerves). 10. Sole of the foot (layers, muscles, vessels and nerves- arches). 11. Joints of lower(type,components, ligaments,relations, movement,nerve and blood supply of hip,knee,ankle & foot joints			
4.Embryology: 1. Cardiovascular system (development & anomalies) 2. Respiratory system (development & anomalies) 3. Digestive system (development & anomalies) 4. Urogenital system (development & anomalies) 5. Nervous system (development & anomalies) 6. Endocrine glands (development & anomalies) 7. Face, neck, nose & palate (development & anomalies) 8. Ear & Eye (development & anomalies)	26	0	26

Topic	Number of hours		
Topics actually taught	lectures	Practical groups	Total hours
9. Musculo-skeletal system (development & anomalies) 10. Integumentary system (development & anomalies)			
TOTAL	**120**	**120**	**240**

Histology 2nd Year

Taught hours: Lecture: 60 hours Practical: 60 hours Total: 120 hours

Course contents

Topic	Hours for lectures	Hours for practical	Total hours per year
1) RESPIRATORY SYSTEM	4	4	8
2) DIGESTIVE - SYSTEM	12	14	26
3) URINARY - SYSTEM	6	4	10
4) ENDOCRINE SYSTEM	6	6	12
5) MALE GENITAL SYSTEM	6	6	12
6) FEMALE GENITAL SYSTEM	6	6	12
7) INTEGUMENTARY SYSTEM	4	4	8
8) EYE	4	4	8
9) EAR	4	4	8
10) CENTRAL NERVOUS SYSTEM	8	8	16
	60	60	120

TOPICS:

1) RESPIRATORY SYSTEM

- Nasal cavity
- Nasopharynx & larynx
- Trachea & respiratory epithelium
- Lung & blood-air barrier
- Alveolar macrophages
- Fetal lung

2) DIGESTIVE SYSTEM

ORAL CAVITY

- Lip
- Tongue & taste buds
- Teeth & gingiva
- Palate and Pharynx

ALIMENTARY TRACT

- General structure of GIT
- Oesophagus
- Stomach & gastro-oesphageal junction
- Small intestine & pyloro-duodenal junction
- Large intestine, appendix & Anal canal

DIGESTIVE GLANDS

- Salivary glands
- Pancreas
- Liver & gall bladder

3) URINARY SYSTEM

- Kidney & blood supply of urineferous tubule
- Blood renal barrier
- Juxta-glomerular complex
- Ureter, Urinary bladder & Urethra

4) ENDOCRINE SYSTEM

- Distribution of endocrine glands
- Pituitary gland
- Neurosecretory cells of hypothalarnus
- Suprarenal gland
- Thyroid gland
- Parathyroid gland

- Pineal body
- General characteristics of diffuse neuro-endocrine cells, distribution & function

5) MALE GENITAL SYSTEM

- Testis & blood-testis barrier
- Spermatogenesis & spermiogenesis
- Ultrastructure of sperm
- Vasa efferentia. Epididymis, Vas deferens & spermatic cord
- Seminal vesicles, prostate & penis
- Semen & sperm count

6) FEMALE GENITAL SYSTEM

b- Ovary
c- Fallopian tube
d- Uterus & menstrual cycle
e- Placenta
f- Vagina & mammary gland

7) INTEGUMENTARY SYSTEM

- Types & distribution of skin
- Histology of thick skin
- Histology of thin skin
- Colour of skin & melanocytes
- Hair , hair follicles & nails
- Skin glands (sweat & sebaceous glands)

8) EYE

- Histology of the different components of the eye ball & eye lid

9) EAR

- Histology of the ear

10) CENTRAL NERVOUS SYSTEM

- Spinal cord & tractology
- Medulla oblongata
- Pons
- Mid-brain , Deep origin of cranial nerves
- Cerebellum & cerebellar peduncle , Cerebrum , Pathways, Lemnisci , MLB

Medical physiology 2nd Year

Taught hours : Lectures: 150 Practical: 60 Total: 210

Course contents and taught hours/week

Week	Title (Topic)	Theoretical classes		Practical classes	
		lectures	Time (hours)	practical	Time (hours)
1st	Endocrine	-Introduction of hormones -Pitutary gland	5	Introduction to physiology lab.	2
2nd	Endocrine	-Growth hormone -Prolactin hormone -MSH	5	Investigations done in GH abnormalities	2
3rd	Endocrine	-Oxitocin -ADH -thyroxine hormone	5	Thyroid function tests	2
4th	Endocrine	-Parathyroid hormone -calcitonin -active vitamin D	5	-tests for latent tetany	2
5th	Endocrine	-Adrenal cortex hormones	5	Tests of suprarenal cortex	2
6th	Endocrine	-Adrenal medullary hormones -Pancreatic hormones	5	-Diagnosis of diabetes	2
7th	Endocrine	-Physiology of growth	5	-OGTT	2
8th	Endocrine	-Other organs with endocrine function	5	-growth curves	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		lectures	Time (hours)	practical	Time (hours)
9th	Reproduction	-Reproductive function of male -Hormonal function of male -Reproductive function of the female	5	Testicular function tests	2
10th	Reproduction	-Hormonal function of the male (estrogen & progesterone hormone)	5	Semen analysis	2
11th	Reproduction	-Functions of placenta & pregnancy tests -Puberty and its mechanism -Physiology of lactation	5	Pregnancy tests	2
12th	Sensory nervous system	-Synapse -Neurotransmitters -Sensory receptors -Processing of impulses in the neural pools	5	- Rules for Sensory examination - Examination of crude touch	2
13th	Sensory nervous system	-Somatic sensations -Sensation from the head & headache	5	-Fine touch examination	2
14th	Sensory nervous system	Sensory areas -Abnormalities of somatic sensation	5	- Examination of pain (cutaneous -deep	2
15th	Motor nervous system	-Human nervous reflexes -Spinal cord reflexes & lesions	5	-Examination of Vibration sense	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		lectures	Time (hours)	practical	Time (hours)
				Examination of pressure	
16th	Motor nervous system	-Reticular formation -Vestibular apparatus	5	-Examination of motor system - Muscle state -Muscle tone	2
17th	Motor nervous system	-Basal ganglia	5	-Muscle power	2
18th	Motor nervous system	-Cerebellum	5	-Examination of superficial reflexes	2
19th	Motor nervous system	- Electrical activity of brain -Sleep -Speech -Memory and learning	5	-Examination of deep reflexes	2
20th	Motor nervous system	-Hypothalamus & limbic system	5	-Examination of coordination -Types of gaits	2
21st	Motor nervous system	-Thalamus & thalamic syndrome	5	-examination of cranial nerves	2
22nd	Renal physiology	-Kidney (structure, function, renal circulation & J-G apparatus) -Urine formation (GFR, factors affecting, regulation &	5	-Urine analysis -Sp gravity of urine	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		lectures	Time (hours)	practical	Time (hours)
		measurement) -Functions of PCT			
23rd	Renal physiology	-Renal handling of (sodium, potassium, glucose, amino acids) -Functions of DCT & Diuretics -Countercurrent mechanism	5	-Glucose in urine -ketone bodies in urine -Albumin in urine	2
24th	Renal physiology	-Acid –base balance & imbalance (acidosis & alkalosis) -Plasma clearance concept -Renal function tests -Micturation	5	Revision	2
25th	Metabolism	-Energy balance -heat value of food -RQ -MR & BMR -Body temperature regulation	5	O2 consumption	2
26th	Metabolism	Fever & hypothermia -Obesity -Physiology of exercise -Starvation	5	pH meter	2
27th	Special senses	-Physiological anatomy of the eye (layers) -Near response -Eye lens & errors of refraction &	5	-Pupillary light reflex -Accommodati	2

Week	Title (Topic)	Theoretical classes		Practical classes	
		lectures	Time (hours)	practical	Time (hours)
		cataract -Accommodation reflex -IOP & glaucoma -The retina		on reflex -Blind spot	
28th	Special senses	-Retinal changes on exposure to light -Retinal adaptation -Visual acuity & visual field	5	-Visual acuity	2
29th	Special senses	-Color vision -The visual pathway & lesions -Perception of depth	5	-Visual field -Funds examination	2
30th	Special senses	-Physics of hearing -Physiology of smell -Physiology of taste	5	- Hearing tests -Smell tests -taste tests	2
	Total 210 hours		150		60

Medical Biochemistry II

Total teaching hours: Lectures: 75 practical: 60 Total: 135 hours

Subjects	Lectures	Practical & Tutorial	Total Hours
• Carbohydrates metabolism.	14	12	26
• Bioenergetics & Biological oxidation.	2	2	4
• The respiratory chain.			
• Lipid metabolism.	2	2	4
• Proteins & amino acids metabolism.	12	8	20
• Heme metabolism.	14	12	26
• Integration of metabolism.	3	2	5
• Purines and Pyrimidines metabolism.	2	2	4
• Vitamins.	3	2	5
• Hormones & their mode of action.			
• Metabolism of xenobiotics.	8	4	12
• Body fluids (Plasma proteins).	10	6	16
Total hours	3	2	5
	2	6	8
	75	60	135

B) Lectures:

1) Metabolism of carbohydrates:

1- Dietary carbohydrates, digestion and absorption.

2- Glycolysis and oxidation of pyruvate.

3- Citric acid cycle and the catabolism of acetyl CoA,

4- Metabolism of glycogen.

5- Gluconeogenesis and control of blood glucose,

6- Pentose phosphate pathway, uronic acid pathway and other pathways of hexose metabolism (fructose, galactose and aminosugars).

7- Metabolic disorders of carbohydrate metabolism and their clinical implications with special emphasis on diabetes mellitus and other disorders of carbohydrate metabolism and their clinical importance.

2) Bioenergetics and biological oxidation:

1- Free energy & exergonic and endergonic processes.

2- High-energy phosphate.

3- Redox potential.

4- Oxido-reductases (oxidases, dehydrogenases, hydroperoxidases and oxygenases).

3) Respiratory chain:

1- Components of respiratory chain

2- Oxidative phosphorylation.

3- Respiratory chain inhibitors.

4- Chemiosmotic theory.

4) Metabolism of lipids:

1- Dietary lipids, digestion and absorption.

2- Biosynthesis of fatty acids.

3- Oxidation of fatty acids and ketogenesis.

4- Metabolism of unsaturated fatty acids and eicosanoids.

5- Metabolism of Acylglycerols and sphingolipids.

6- Lipid transport (lipoproteins) and storage.

7- Cholesterol synthesis, transport and excretion.

8- Metabolic disorders of lipid metabolism and their clinical implications.

5) Metabolism of proteins:

1- Dietary proteins, digestion and absorption.

2- Biosynthesis of the nutritionally nonessential amino acids.

3- Catabolism of proteins and amino acid nitrogen (metabolism of ammonia and urea cycle).

4- Catabolism of the carbon skeletons of amino acids.

5- Conversion of amino acids to specialized products.

6- Metabolic disorders of proteins and amino acids metabolism and their clinical implications.

6) Metabolism of Heme:

1- Biosynthesis of porphyrins and heme.

2- Catabolism of heme produces bilirubin.

3- Porphyries and hyperbilirubinaemia (unconjugated and conjugated).

7) Integration of metabolism:

1- Interconversion of major food stuffs.

2- Metabolic interrelationship between adipose tissue, the liver and extrahepatic tissues.

3- Starve-fed state: early fasting - fasting - fed.

4- Glucose homeostasis.

5- Metabolic interrelationship of tissues in various hormonal states obesity, exercise, pregnancy and lactation.

8) Purine and pyrimidine nucleotides metabolism:

1- Digestion and absorption of nucleic acids.

2- Biosynthesis of purine and pyrimidine nucleotides.

3- Catabolism of purine and pyrimidine nucleotides.

4- Metabolic disorders of purine and pyrimidine nucleotides metabolism (including gout) and their clinical implications.

5- Synthetic base analogues and their clinical use.

9) Vitamins:

1. Introduction and Classifications

2. Water soluble vitamins (vit. C, B1, B2, Niacin, B6, Biotin, Folic acid, B12, Panththenic acid, Lipoic acid) and the derived coenzymes - biochemical changes due to deficiency.

3. Fat soluble vitamins (A, D, E, K) and their role in biochemical activities

10- Hormones and their mode of action:

1- Hormones that bind to intracellular receptors.

2- Hormones that hind to cell surface receptors.

3- Secondary messengers (cAMP, cGMP, calcium, phosphatidyl-inositol, kinase and phosphatase).

4- Hormones that regulate calcium: Parathyroid hormones, calcitonin and calciteriol.

5- Endocrine functions of pancreas: Insulin, glucagons, somatostatin and pancreatic polypeptide: Structure, function and their pathological disorders.

6- Hormones of hypothalamus, pituitary, thyroid, adrenal and gonads: Structure, function and their pathological disorders.

11- Metabolism of xenobiotics:

1- Hydroxylation (role of cytochrome P-450)

2- Conjugation (glucuronic acid, sulfate and glutathione), acetylation and methylation.

3- Effects of xenobiotics.

12- Body fluids:

1- Blood: plasma proteins, plasma enzymes, homeostasis and blood coagulation.

2- Urine: physical properties, normal and abnormal constituents.

3- Milk: physical properties, composition and colostrums.

4-Seminal fluid: spermatozoa, characters, constituents.

5-Cerebrospinal fluid: formation, functions, characters and composition.

6- Aqueous humor, sweat, tears, lymph, amniotic fluid and synovial fluid,

B) Practical classes:

1. Complete urine report.

2. Colorimetric measurement of:

a- Serum glucose

b- Serum total proteins

c- Serum uric acid

d- Serum creatinine

e- Serum cholesterol

f- Serum albumin

3. Case report studies applying the out-comes of previous parameters

Psychiatry and Behavioral Science

Taught hours: 30 theoretical hours.

Subject	Lectures (hours)
Psychiatry sheet.	3
Bipolar Disorders	3
Anxiety Disorders	3

Subject	Lectures (hours)
Psychotic Disorders	3
Psychosomatic Disorders	3
Drug Abuse	3
Somatoform Disorders	3
Child Psychiatry	3
Dementia	3
Psychopharmacology	3
Total	**30**

3- Contents (Topics)

a. The patient doctor relationship.

b. Physical development.

c. Cognitive development.

d. Psychosexual stages (Sigmuind Freud).

e. Moral development.

f. Defense mechanisms.

g. Learning.

h. Thinking.

i. Memory.

j. Attention.

k. Perception.

l. Motives.

m. Frustration.

n. Conflict.

o. Stress.

p. Emotions.

q. IQ.

r. Consciousness.

s. Sleep.

t. Personality.

u. Psychometric measurement of Personality and IQ.

PATHOLOGY

Taught hours : Lectures: 120 Practical: 120 Total: 240

III. COURSE CONTENTS:

First Term	Subjects	Lecture	Practical & Tutorial	Total Hours
	General Pathology	60 Hours	60 Hours	120 Hours
1st week	Acute inflammation	4 hours	4 hours	8 hours
2nd week	Chronic inflammation, repair and cell injury	4 hours	4 hours	8 hours
3rd week	Intracellular accumulations, circulatory disturbances	4 hours	4 hours	8 hours
4th week	Circulatory disturbances	4 hours	4 hours	8 hours
5th week	Circulatory disturbances, immunity	4 hours	4 hours	8 hours
6th week	Bacterial infection, T.B	4 hours	4 hours	8 hours
7th week	Sarcoidosis, Actinomycosis	4 hours	4 hours	8 hours
8th week	Leprosy, syphilis	4 hours	4 hours	8 hours
9th week	Bilharziasis	4 hours	4 hours	8 hours
10th week	Bilharziasis	4 hours	4 hours	8 hours
11th week	Bilharziasis, Vitamins deficiency	4 hours	4 hours	8 hours

First Term	Subjects	Lecture	Practical & Tutorial	Total Hours
	General Pathology	60 Hours	60 Hours	120 Hours
12th week	Disturbances of growth, Introduction of tumor	4 hours	4 hours	8 hours
13th week	Benign tumors, Malignant tumors	4 hours	4 hours	8 hours
14th week	Malignant tumors	4 hours	4 hours	8 hours
15th week	Lab diagnosis of cancer	4 hours	4 hours	8 hours
Second Term	Special Pathology	60 Hours	60 Hours	120 Hours
1st week	Cardiovascular system	4 hours	4 hours	8 hours
2nd week	Cardiovascular system, blood vessels	4 hours	4 hours	8 hours
3rd week	Blood vessels, respiratory system	4 hours	4 hours	8 hours
4th week	Respiratory system, blood	4 hours	4 hours	8 hours
5th week	Respiratory system, gastrointestinal tract	4 hours	4 hours	8 hours
6th week	Gastrointestinal tract	4 hours	4 hours	8 hours
7th week	Liver	4 hours	4 hours	8 hours
8th week	Urinary tract	4 hours	4 hours	8 hours
9th week	Urinary, Male genital system	4 hours	4 hours	8 hours
10th week	Female genital system	4 hours	4 hours	8 hours
11th week	Breast	4 hours	4 hours	8 hours

First Term	Subjects	Lecture	Practical & Tutorial	Total Hours
	General Pathology	60 Hours	60 Hours	120 Hours
12th week	Bone	4 hours	4 hours	8 hours
13th week	Lymph node	4 hours	4 hours	8 hours
14th week	Endocrine system	4 hours	4 hours	8 hours
15th week	Central nervous system	4 hours	4 hours	8 hours

Detailed topics of course topics

A) GENERAL PATHOLOGY

1. INFLAMMATION

Acute inflammation.

Chronic inflammation.

2. REPAIR

Regeneration.

Healing by fibrosis.

Healing in special conditions.

3. CELL RESPONSE TO INJURY

Causes of cell injury

Effects and types of cell injury

4. INTRACELLULAR ACUMULATIONS AND EXTACELLULAR DEPOSITIONS.

Accumulations and storage (water, fat, mucin, glycogen, protein, pigment).

Depositions (amyloidosis, myxomatous changes).

5. CIRCULATORY DISTURBANCE.

Hyperemia	Venous congestion
Thrombosis	Embolism
Ischemia	Infarction
Gangrene	Hemorrhage

Shock

6. IMMUNE RESPONSE.

a. Immunity and hypersensitivity.

b. Acquired Immune Deficiency Syndrome (AIDS).

c. Autoimmune diseases.

7. BACTERIAL NFECTION

Bacteraemia, Pyaemia, Septicaemia and Toxaemia.

Specific infection and Granulomas (T.B. - Syphilis – Leprosy and actinomycosis)

8. VIRAL AND MYCOTIC DISEASES.

CMV, AIDS

9. PARASITIC DISEASES

Bilharziasis.

10. VITAMINS DEFICIENCIES

Vitamin A deficiency
Vitamin K deficiency
Vitamin C deficiency
Vitamin B complex deficiency
Vitamin D deficiency

11. DISTURBANCES OF GROWTH

Congenital anomalies, atrophy, hypertrophy, hyperplasia, metaplasia, and dysplasia.

12. TUMORS

Benign tumors

Malignant tumors

13. IONIZING RADIATION AND LABORATORY DIAGNOSIS

Types, mode of action, effects on different tissues

B) SPECIAL PATHOLOGY

Studied systems are:

1. **CARDIOVASCULAR SYSTEM (heart & blood vessels).**
2. **RESPIRATORY SYSTEM.**

3. GASTROINTESTINAL SYSTEM.

4. HEPATOBILIARY & PANCREATC SYSTEM.

5. URINARY TRACT SYSTEM.

6. MALE GENITAL SYSTEM.

7. FEMALE GENITAL SYSTEM.

8. BREAST.

9. ENDOCRINE SYSTEM.

10. BLOOD& LYMPHORETICULAR SYSTEM.

11. BONE &JOINTS.

12. PERIPHERAL & CENTRAL NERVOUS SYSTEMS.

All diseases in each organ system studied are covering:

- Definition, incidence of disease and epidemiology.
- Etiology, pathogenesis and molecular genetics.
- Gross and microscopic changes.
- Fate and complications.
- Clinical presentation and prognosis.

Other course topics:

Problem-solving cases:

are based on the topics discussed in the above mentioned list:

1- Acute and chronic inflammation and repair.

2- Degenerative changes.

3- Necrosis and cell injury.

4- Granulomas.

5- Non specific infections and immunologic disturbances.

- Circulatory disorders.
- Neoplasms.
- Cardiovascular cases.
- Respiratory cases.
- G.I.T cases.
- Hepatobiliary cases.
- Urinary tract cases.
- Female genital tract and breast cases.
- Male genital tract cases.
- Bone & Joint cases.
- Peripheral and central nervous system cases.

- **Practical: (List of slides, 71 slides)**

A) GENERAL

1. Acute supportive appendicitis.
2. Granulation tissue.
3. Myocardial scarring.
4. Cloudy swelling kidney.
5. Hyaline change spleen.
6. Fatty change liver.
7. Chronic venous congestion, lung.
8. Early T.B lymph node.
9. Caseating T.B lymph node.
10. Pulmonary tuberculosis.
11. Rhinoscleroma.
12. Bilharziasis, rectum
13. Bilharziasis, urinary bladder
14. Actinomycosis
15. Schwannoma
16. Leiomyoma
17. Lipoma
18. Myxoma
19. Chondroma
20. Capillary haemangioma
21. Cavernous haemangima
22. Cavernous lymphangioma
23. Squamus cell papilloma
24. Adenoma, intestine
25. Fibroadenoma, breast
26. Osteochondrom
27. Osteoclastoma
28. Osteosarcoma
29. Fibrosarcoma
30. Melanocytic naevus

31. Malignant melanoma
32. Squamous cell carcinoma
33. Basal cell carcinoma
34. Invasive duct carcinoma, breast
35. Adencarcinoma, colon
36. Mucoid adenocarcinoma, colon
37. Metastatic carcinoma, lymph node

B) SPECIAL

38. Nasal polyp
39. Emphysema
40. Bronchiectasis
41. Bronchogenic carcinoma
42. Salivary gland pleomorphic adenoma
43. Warthin tumor
44. Chronic hepatitis
45. Liver cirrhosis
46. Hepatocellular carcinoma
47. Chronic diffuse glomerulonephritis
48. Renal cell carcinoma
49. Nephroblastoma, Wilm's tumor
50. Papillary TCC, urinary bladder
51. Nodular prostatic hyperplasia
52. Sertoli cell only
53. Semioma
54. Proliferative phase, edometrium
55. Secretory phase, edometrium
56. Simple endometrial hyperplasia
57. Adenocrcinoma, uterus
58. Squamous cell carcinoma, cervix
59. Vesicular mole
60. Mucinous cystadenoma,Ovary

61. Brenner's tumor
62. Choriocarcinoma
63. Fibrocystic change, breast
64. Follicular hyperplasia, lymph node
65. Non-Hodgkin's lymphoma, lymph node
66. Hodgkin's lymphoma, lymph node
67. Colloid goiter
68. Toxic goiter
69. Papillary carcinoma, Thyroid
70. Meningioma
71. Astrocytoma

N.B.: Slides of new disorders may be added depending on availability of samples.

C) LIST OF MUSEUM SPECIMENS: (109 jars)

- G.I.T (18) jars.
- Respiratory system (10) jars.
- Female genital system (26) jars.
- Breast (2) jars.
- Urinary system (30) jars.
- Endocrine system (2) jars.
- Male genital system (2) jars.
- Skeletal system (2) jars.
- Soft tissue (6) jars.
- Hepatobiliary system (5) jars.
- Lymphoreticular system (6) jars.

Pharmacology

Taught hours : Lectures: 120 Practical & Tutorial: 60 Total: 180

III- Course Contents:

III- A) Lectures (120 hours)

Teaching hours

Topics	Lecture	Practical	Tutorial	Total
1-General Pharmacology	**10**	**4**	**4**	**18**
2-Autonomic Nervous System	**14**	**6**	**-**	**20**
3-Ocular Pharmacology	**2**	**2**	**-**	**20**
4-Autacoids	**4**	**-**	**-**	**4**
5-Cardiovascular Pharmacologty	**12**	**6**	**6**	**24**
6-Renal Pharmacology	**4**	**2**	**2**	**8**
7- Pharmacology of Blood	**4**	**2**	**-**	**6**
8- Chemotherapeutic drugs	**18**	**-**	**-**	**18**
9-Drugs act in CNS	**20**	**10**	**6**	**36**
10-Endorine drugs	**10**	**-**	**4**	**14**
11-Pharmacology of GIT	**6**	**-**	**2**	**8**
12-Respiratory system	**4**	**-**	**2**	**6**
13-Vitamines	**2**	**-**	**-**	**2**
14-Dermatologic Pharmacology	**2**	**-**	**-**	**2**
15-Gene therapy	**1**	**-**	**-**	**1**
16-Immunopharmacology	**1**	**-**	**-**	**1**
17-Drug abuse	**2**	**-**	**-**	**2**
18-Drug interaction	**2**	**-**	**-**	**2**
19-Essential drugs	**1**	**-**	**-**	**1**

Topics	Lecture	Practical	Tutorial	Total
20-Rational use of drugs	1	-	-	1
21-Prescription writing	-	-	2	2
Total	120	32	28	180

LECTURES

1-General pharmacology:

Nature and source of drugs , dosage forms of drugs ,routes of drug administration , evaluation of new drugs , adverse drug reactions , pharmacodynamics , pharmacokinetics , drugs at the extreme of age.

2-Autonomic Nervous System:

Sympathomimetics , sympathetic depressants,parasympathomimetics , drugs acting on the neuromuscular junction , drugs acting on autonomic ganglia.

3-Ocular pharmacology:

Drugs acting on the eye and treatment of glaucoma.

4-Autacoids:

Histamine and antihistaminics , serotonin and its antagonists , eicosanoids , angiotensin and kallikerin-kinin system.

5-Cardiovascular pharmacology:

Treatment of heart failur, antihypertensive drugs ,drug therapy of angina pectoris , treatment of shock , antiarrhythmic drugs , drug therapy of peripheral vascular disease.

6-Renal pharmacology:

Diuretics , alteration of urinary pH.

7-Pharmacology of blood:

Treatment of anaemias , coagulants and anticoagulants ,drugs affecting the fibrinolytic system , drugs affecting platelet activity , lipid lowering drugs , intravenous fluids , total parenteral nutrition.

8-Chemotherapeutic agents:

Classification of antimicrobials , Beta-lactam antibiotics , aminoglycosides , tetracyclines , chloramphenicol, macrolides ,quinolones , sulphonamides , chemoprophylaxis , drug therapy of tuberculosis and leprosy , antifungal and antiviral drugs , cancer chemotherapy , topical disinfectant and antiseptics , chemotherapy of malaria , chemotherapy of amebiasis , antiprotozoal and anthelmintics.

9-Drugs act in the CNS:

Central neurotransmitters, sedative-hypnotics , antiepileptic drugs, analgesic drugs , local and general anaesthetics , antipsychotics, antidepressants , antimanic drugs and central nervous stimulants.

10-Respiratory system:

Bronchodilators , expectorants , mucolytics , antitussive , therapeutic gases.

11- Endocrine drugs:

Classification of hormones, anterior and posterior pituitary hormones , insulin and oral antidiabetic drugs , thyroxin and antithyroid drugs ,hormonal regulation of calcium homeostasis , corticosteroids , sex hrmones and anabolic steroids.

12-Pharmacology of GIT:

Drug therapy of peptic ulcer , emetics and antiemetics , prokinetic drugs , purgatives and antidiarrheal drugs.

13- Vitamins.

14- Dermatologic pharmacology:

Percutaneous absorption of drugs , keratolytics ,counterirritants , antipruitics , drugs affecting skin pigmentation , drug therapy of acne vulgaris , drug therapy of psoriasis , retinoids.

15-Gene therapy:

Methods of gene delivery , concept of gene therapy and indications og gene therapy.

16-Immunopharmacology:

Immunomodulating agents , immunosupp-ressive agents.

17-Drug abuse:

Drug dependence , types of drug dependence , general lines of treatment of drug dependence.

18-Drug-interaction.

19-Essential drugs:

Advantage of essential drug list.

20-Rational use of drugs:

Definition , areas where care is needed while prescribing.

21- Prescription writing.

III-B) Practical pharmacology (32 hours)

No	Item	Hours
١	Dosage forms of drugs	1
٢	Routes of drug administration	1
٣	Drug absorption	1
٤	Drug excretion	1

No	Item	Hours
٥	Drugs and isolated intestine	4
٦	Drugs and isolated rectus abdominis muscle.	2
٧	Drugs and the eye	2
٨	Drugs and isolated heart	4
٩	Action of drugs on blood pressure of rats	2
١٠	Onset , potency , duration of diuretics	2
١١	Anticoagulant drugs	2
١٢	Oil/water partition coefficient	2
١٣	General anaesthetics	2
١٤	Hypnotics and assessment of their potency	2
١٥	Tests of analgesics	2
١٦	Antiparkinsonian activity of drugs	2
	Total	32

III-C) Tutorials (28 hours)

No	Item	Hours
1	Dosage calculation for pediatrics	2
٢	Dosage calculation for in renal diseases	2
٣	Drug dosage calculation (drug concentration)	2
٤	Congestive heart failure	2
٥	Angina pectoris	2
٦	Hypertension	2
٧	Urinary tract infection	2
٨	Gout	2
٩	Epilepsy	2
١٠	Rheumatoid arthritis	2
١١	Bronchial asthma	2

١٢	Hyperthyroidism	**2**
١٣	Diabetes mellitus	**2**
١٤	How to write prescription	**2**
	Total	**28**

Microbiology and Immunology

Lecture: 90 hours Tutorial/Practical: 60 hours Total: 150 hours

Topic	Lecture	Practical/Tutorial	No. of Hours
General Bacteriology	**18**	**12**	**30**
Immunology	**12**	**8**	**20**
Systemic Bacteriology	**35**	**30**	**65**
General Virology	**4**	**-**	**4**
Systemic Virology	**10**	**-**	**10**
General Mycology	**4**	**4**	**8**
Systemic Mycology	**3**	**-**	**3**
Applied Microbiology	**4**	**6**	**10**
Total	**90**	**60**	**150**

Parasitology

Taught Hours : Lecture: 60 Tutorial & Practical: 60 Total : 120

Course Contents:

Topics	Hours for lectures	Hours for practical	No. of hours per week
Introduction of Trematoda+ Fascioliasis (F.gigantica & F. hepatica)	2	2	4
Halzoun+ H. heterophyes+ Paragonimus	2	2	4
Shistosomiasis (S. haematobium, S.mansoni, S.japonicum)	2	2	4
Snails + introduction of Cestodes + Diphyllopothrium latum.	2	2	4
D.mansoni, sparganosis, Taenia saginata+ T.solium	2	2	4
Cysticercosis+ Echinococcus granulosus + Hydatid disease	2	2	4
Multiceps + Ceonurosis+ Hymenolepis nana+ H.diminuta+ D. caninum	2	2	4
Introduction of Nematoda + Ascaris lumbricoides	2	2	4
Trichuris trichura+ Enterobius vermicularis+ Hook worms	2	2	4
Trichostrongylus + Strongyloides + Capillaria philippiansis	2	2	4
Filariasis	2	2	4

Topics	Hours for lectures	Hours for practical	No. of hours per week
Trichinella spiralis+ D.medenensis + Visceral and cut. Larva migrans	2	2	4
Periodic examination 1	2	2	4
Stool , urine and blood examination	2	2	4
Introduction of Arthropoda + Mosquitoes	2	2	4
Introduction of protozoa + Malaria	2	2	4
Student conference	2	2	4
Sandfly + Leishmaniasis	2	2	4
Musca+ Stomoxyes+ Entamoeba histolytica	2	2	4
Free living Amoebae+ B.coli + Giardia	2	2	4
Trichomonas vaginalis+ commensals+ Blastocystis	2	2	4
Glossina + Trypanosomiasis	2	2	4
Mosquitoes +Malaria+ Coccidia	2	2	4
Periodic examination 2	2	2	4
Calliphoridae + Myaisis + fleas	2	2	4
Lice + Bugs	2	2	4
Ticks + scorpion	2	2	4
Mites + Cyclops	2	2	4
Revision 1 Revision 2	2 2	2 2	4 4
Total	60	60	120

Ophthalmology

Taught Hours Lecture: 80 hours **Practical & Tutorial :**80 **Total** : 160

- Contents:

Clinical Ophthalmology
Ocular Investigations
The eyelids
Lacrimal System
The Cornea
The Conjunctiva
Cataract
Glaucoma
Errors of Refraction
Strabismus
Retina
The uveal tract
The Orbit
Intraocular tumors
Neuro-ophthalmology
Ocular trauma
Systemic Diseases and the Eye

ENT

Taught Hours Lecture: 64 hours **Practical & Tutorial** :40 **Total** : 104

COURSE CONTENTS:

Subjects	Lecture	Practice & Tutorial	Total Hours

Subjects	Lecture	Practice & Tutorial	Total Hours
Ear	24	10	34
Nose	16	12	28
Pharynx	10	7	17
Oesophagus	2	2	4
Larynx	10	7	17
Neck	2	2	4
Total	**64**	**40**	**104**

Detailed topics of course topics

A. Theoretical Course

1. EAR:

1-Basic anatomy & physiology of the ear,hearing and equilibrium

2-Diseases of the auricle

3-Diseases of the external ear (otitis media-foreign bodies, wax accumulation)

4-diseases of the middle ear (trauma-acute otitis media, chronic non-suppurative otitis media, chronic suppurative otitis media, complications, otosclerosis, facial nerve paralysis)

5-Diseases of inner ear (trauma, labrynthitis, Meniere's diseases)

6-symptoms of diseases of the ear (deafness, tinnitus, vertigo, discharge, earache)

7-Principle of some operations and procedures on the ear (earwash, myringotomy, mastidectomy, tympanoplasty, stapedectomy)

8-Basic principles of audiology

2. Nose

1-Basic anatomy & physiology of the ear:

2-Diseases of the nose and paranasal sinuses (congenital, trauma, rhinitis, sinusitis, sino-nasal, polyps, tumors, deviated nasal septum)

3-Symptoms of diseases of the nose (nasal obstruction, nasal discharge, epistaxis, headache)

4-PRINCIPLE OF SOME OPERATIONS AND PROCEDURES ON THE NOSE (ANTROSTOMY, RADICAL ANTRUM, ENDOSCOPIC SINUS SURGERY, SEPTOPLASTY)

Forensic Medicine and Clinical Toxicology

Taught hours: Lecture:80 Practical& clinical 80 Total:160

Course Contents

1-Forensic medicine

Topics	No of hours		
	Total	Lectures	Practical
1-Identification (of living and decreased)	7	4	3 (Museum)
2-Death (Manner of death, medico legal aspects of brain death, death under anesthesia, estimation of postmortem interval).	9	6	3 (Museum)
3- medico legal aspects of sudden death.	2	1	1 (Morgue)
4- medico legal aspects of wounds (fire arm injuries, head injuries, thermal injuries, and electric burn injuries of other parts of the body, transportation injuries).	12	8	4 (Museum and causality department)
5-Paternity investigations	4	2	2(Lab)
6- Medico legal aspects of child abuse and	6	3	3 (Museum)

Topics	No of hours		
	Total	Lectures	Practical
domestic violence (MI conflict)			
7-DNA evidence	4	1	3 (case studies)
8-Sexual offences	5	2	3 (Museum)
9- Medico legal aspects of abortion	4	2	2 (Museum)
10- Medico legal aspects of suspected death in childhood	3	1	2 (Museum)
11-Violent asphyxia	4	2	2 (Museum)
12-Medico legal aspects of suspected death in childhood	4	2	2 (Museum)
13-Medical ethics	5	3	2 (case studies)
14-Malpractice	5	3	2(case studies)
Total	**80**	**40**	**40**

2-Toxicology

Topic	Hours		
	Lectures	Practical	Total
1-Calssification of poisons	5	4	9
2-Toxicokinetics and dynamics	2		2
3-Focused clinical examinations of a poisoned patient	4	5 (Models and case studies)	9

Topic	Hours		
	Lectures	Practical	Total
4-Management of an intoxicated patient	4	5(Models and case studies)	9
5-Household intoxication (corrosive, insecticides, bleaching substances)	4	5(Lab and cases studies)	9
6-Medical toxicology (CNS) depressants and stimulants, analgesics antiphyretics opiates and anticholinergic and cardiovascular drugs)	7	5(Lab and cases studies)	12
7-Inhalants (CO,CO2, cyanide)	4	4(Lab and cases studies)	8
8-Volatile poisons (ethyl and methyl alcohol and kerosene)	4	4(Lab and cases studies)	8
9-Substances of abuse	2	4(Lab and cases studies)	6
10-Environnemental pollutants	4	4	8
Total	**40**	**40**	**80**

COMMUNITY MEDICINE

Taught Hours Lecture: 128h Practical &field training : 80 Total: 208

Content:

course contents:				
Subjects	**Lecture**	**Practical**	**Field visits**	**Total Hours**
General introduction	2	0	0	2
Measurements of health : demography, vital statistics, and disease burden	8	8	0	16
Epidemiological Methods	8	8	0	16
Medical Statistics	6	10	0	16
General epidemiology of communicable diseases	8	0	0	8
Epidemiology of selected communicable diseases	24	4	2	30
Epidemiology of selected non communicable diseases	9	3	1	13
Hospital infection and sterilization	2	3	2	7
Communication and health behavior	12	5	0	17
Health care management and administration	5	6	0	11
Health systems and health services in Egypt	2	0	0	2
Mental health	2	0	0	2
Nutrition in health and	8	4	2	14

course contents:				
Subjects	**Lecture**	**Practical**	**Field visits**	**Total Hours**
disease				
Primary health care, basic health services and family practice	6	4	2	12
Rural health	2	3	1	6
Reproductive health, including maternal and child health and family planning	10	4	2	16
Adolescent and Faculty Health	6	0	1	7
Health of the elderly	4	3	1	8
Health of people with special needs, including	4	0	1	5
Total	**128**	**65**	**15**	**208**

The details:

- **Theoretical Course**

1. GENERAL EPIDEMIOLOGY OF COMMUNICABLE DISEASES

o Patterns of occurrence of disease in communities (sporadic, endemic, outbreak, epidemic, pandemic).
o The infectious cycle (causative agent; reservoir: human and animal/zoonosis; mode of transmission; incubation period; period of communicability; susceptibility and resistance).

o Preventive measures: general and specific.
o Control measures: the case, the immediate contacts, the community especially during epidemics, outbreaks and pandemics.
o Surveillance systems, disease elimination and eradication.
o Investigation of an epidemic/ outbreak.
o Disinfection, sterilization, nosocomial/hospital infection.

2. EPIDEMIOLOGY OF SELECTED COMMUNICABLE DISEASES

The selected diseases will include, common endemic diseases, emerging diseases, international diseases and potentially threatening diseases:
o The infectious cycle for each of the selected diseases.
o Prevention and control, and special programs as available.
o Immunization: recommended and potential vaccines.

3. HOSPITAL INFECTION & STERILIZATION

Disinfection, sterilization, nosocomial/hospital infection

4. MESUREMENTS OF HEALTH, DEMOGRAPHY & VITAL STATISTICS

Definitions, census, population estimates and projections, Egypt's population trend, theory of demographic transition, population pyramids, sources of data, vital indices and concepts of quality of life.

5. EPIDEMIOLOGY OF SELECTED NON-COMMUNICABLE DISEASES

General concepts, risk factors, primary and secondary prevention, periodic examination, screening tests, epidemiology of injuries and selected non-communicable diseases (ischemic heart disease, hypertension, rheumatic heart disease, diabetes, cancer, blood disorders, bronchial asthma).

6. COMMUNICATION & HEALTH BEHAVIOUR

Basic behavioral theories, behavioral and social variables, communication, health education, counseling, and community mobilization.

7. MENTAL HEALTH

Definition, Risk factors, impact of mental illness, primary and secondary prevention, mental health program.

8. NUTRITION IN HEALTH & DISEASE

Definitions and concepts, nutrients (sources, functions, requirements), adequate diet, nutritional public health problems, assessment of the nutritional status, diet and chronic diseases.

9. HEALTH CARE MANAGEMENT & ADMINISTRATION

Definition and principles of management, assessment of community needs and resources, problem identification and priority setting, organization-based management , leadership and team building, quality management, health economic

10. HEALTH SYSTEMS & HEALTH SERVICES IN EGYPT

Egypt's health policy, different health systems functioning in Egypt, the organizational structure and function of the MOHP the referral system, the concept of health reform

11. PRIMARY HEALTH CARE & FAMILY HEALTH PRACTICE

Curative/preventive patterns of care, levels of practice (individual, family and community levels), comprehensive health care, PHC (definition and principles, characteristics, elements), PHC services in Egypt, the family practice approach in Egypt.

12. RURAL HEALTH

Health-related problems in rural areas , the rural health program, organization of rural health services ,staffing of the rural health team.

13. REPRODUCTIVE HEALTH

Definitions and concepts, components of comprehensive RH, RH activities and MCH services implemented in Egypt, evaluation of MCH program, FP (the population policy and strategy for Egypt,
the national FP program, and its evaluation).

14. HEALTH OF ELDERLY

Definitions, the physical, mental, and social problems and needs of the elderly, health care programs for the elderly and their relation to other care programs.

15. OCCUPATIONAL HEALTH

Concepts and definitions, hazards/work-related hazards for different occupations and jobs, prevention and control of occupational hazards, ergonomics, occupational health program, the role of the PHC in occupational health.

B. Practical Course

o Practical course includes pre-visit orientation seminars & post-field visit group discussion.
o Practical includes: exercises, student presentation and group discussions.
o Each visit lasts approximately 3 hours (3 hrs per visit).

INTERNAL MEDICINE & SPECIALITIES

Taught hours Lectures: 216 Practical: 330, Total: 546

Course contents

- **internal medicine**

	Lecture Hours	Tutorial/Practical hours
1-Introductory Course + X rays & ECG	**18**	**22**
2- Rheumatology	**10**	**12**
3-GIT &Liver	**19**	**32**
4-Endocrinology	**16**	**16**

	Lecture Hours	Tutorial/Practical hours
5- Hematology &Oncology	15	20
6- Nephrology	16	16
7- Immunology	3	5
8- Genetics	3	6
9-Pharmacotherapeutics	3	6
10-Emergency Medicine	3	9
11-Geriatrics	4	6
TOTAL	110	150

II- Medicine specialties

BRANCH	Lecture Hours	Practical Hours	Total Hours
Cardiology	18	15	33
Neurology	20	15	35
Chest	15	15	30
Tropical	13	15	28
Dermatology	24	15	39
Clinical pathology	16	15	31
Total	106	90	196

Detailed Topics

I- Internal Medicine

Introductory course + X-rays& ECG (18)

Introduction& general examination:

cardiac Examination

Examination of cardiac patient-edema-palpitation

Chest examination ,, Clubbing & Cyanosis

Abdominal Examination

6 : Basic Electrocardiography (I)

7 : Basic Electrocardiography (II)

8 : GIT Bleeding& Dysphagia

9:Pallor-anemia-fatigue-hemorrhagictendencies lymphadenopathy

10 : Diarrhea &Constipation

11 : Cough- expectoration – hemoptysis & dyspnea

12 : Basic imaging& X Ray(I)

13 : Basic imaging& X Ray(II)

14: Headache &migraine

15:- CNS Examination

16: Shock

17:- Coma

18:- Tremors

ENDOCRINOLOGY & METABOLISM (16)

End.1:Principles of endocrinology (hypothalamus, pituitary diseases)

End 2: thyroid diseases

End 3 : thyroid diseases

End 4 : suprarenal cortex

End 5 : suprarenal cortex

End 6 : Growth problems

End 7: Obesity

End 8: Gonads

End 9 : DM

End 10: DM

End 11: Endocrinal interrelationship & Endocrinal emergency

End 12: Endocrinal interrelationship & Endocrinal emergency

End 13: Pheochromocytoma

End 14: Diabetes insipidus

End 15: Calcium metabolism

End 16: Calcium metabolism

NEPHROLOGY COURSE (16)

N1 structure and function of the kidney (N1)

N2 renal investigation (N2)

N3 interstial nephritis (analgesic)

N4 UTI

N5 glomerlopathy , major clinical glomerular syndrome

N6 Acute & chronic GN

N7 Nephrotic syndromes & RPGN

N8 Acute RF

N9 Chronic RF

N10 Renal replacement therapy

N11 Drug & kidney

N12 PCKD , Pulmonary. Renal &cardio renal syndromes

N13 Lupus nephritis , Diabetic nephropathy

N14 Hypertension and kidney

N15 water , electrolyte

N16 acid base balance

G.I.T &LIVER COURSE (19)

GIT 1:- Esophageal disorders

GIT 2 :- Peptic ulcer disease

GIT 3:- stomach disease other than PU

GIT 4:- disorder of G.I.T motility , diarrhea , dysentery , constipation

GIT 5:- malabsorbtion syndrome

GIT 6 :- inflammatory bowel disease

GIT 7:- functional colonic disorder

GIT 8:- G.I.T malignancy

GIT 9 :- pancreas

GIT 10 :- gall bladder disease

HEPATOLOGY

GIT 11:- jaundice

GIT 12 :- acute hepatitis , chronic hepatitis(viral &non viral)

GIT 13 :- cirrhosis

GIT 14:- portal hypertension

GIT 15 : liver cell failure

GIT 16:- Ascites & peritoneal disease

GIT 17 :- hepatocellular failure (focal lesion)

GIT 18 :- focal hepatic lesions

GIT 19 ; Fatty liver

RHEUMATOLOGY COURSE (10)

Rh 1:- classification &DD of arthoropathy

Rh 2 :- rheumatoid arthritis

Rh 3 : SLE

Rh 4 : Gout

Rh 5 : seronegative spondyloarthoropathy

Rh 6 : non articular rheumatic disorder (sclerodema, sjog. ,polymyo)

Rh 7:- vasculitis

Rh 8 :- corticosteroid & other immunosuppressive agents

Rh 9: osteoporosis , osteoarhritis

Rh 10:- basic immunology , and immune diseases

HAEMATOLOGY& ONCOLOGY COURSE (15)

B1 anemia (introduction & microcytic anemia)

B2 macroctic anemia

B3 haemolysis(1)

B4 haemolysis (2)

B5 bleeding disorder

B6 acute leukemia

B7 chronic leukemias

B8 lymphoma & lymphadenopathies

B9 myeloproliferative disorders

B10 myelodysplasia, TTP, HUS

B11 agranulocytosis

B12 blood transfusion

B13 anticoagulant

B14 thrombtic disorders

B15 splenomegaly & hyperspleism

GERIATRIC MEDCINE COURSE (3)

* Theories of aging
* physiological changes of aging
* Common problem in elderly

GENETIC COURSE (3)

* Introduction to genetics
* cloning & gene therapy
* common genetic diseases

IMMUNOLOGY (3)

PHARMACOTHERAPEUTICS (3)

EMERGENCY MEDICINE (3)

Training on medical emergencies

i. Basic & advanced cardiac life support
ii. Acute renal failure
iii. Coma &disorders of consciousness& Shock
iv. Systemic inflammatory response syndrome and multi-organ failure
v. Acute poisoning
vi. Acute ischemic syndromes
vii. Arrhythmias
viii. Acute pulmonary edema
ix. Acute dyspnea
x. Pneumothorax
xi. Pulmonary embolism
xii. Asthma
xiii. Respiratory failure
xiv. Stroke and metabolic encephalopathy

xv. Diabetic ketoacidosis and hypoglycemia
xvi. Addison's disease
xvii. Tetany and calcium Hemostasis
xviii. Upper and lower Gastrointestinal bleeding
xix. Apnea
xx. Cardio respiratory monitoring

II- Medicine specialties

Cardiology Course

- Rheumatic Fever
- Infective endocarditis
- Ischemic Heart disease
- Hypertension
- Core pulmonale
- Pulmonary embolism
- Arrhythmia
- Heart Failure
- Pericarditis
- Cardiomyopathy
- Congenital Heart Diseases
- Cardiovascular drugs
- Large vessel disease

Diseases of the Respiratory System

- Obstructive airway diseases
- Respiratory infections and Pneumonias
- Suppurative Lung syndromes
- Tuberculosis
- Interstitial lung diseases

- Respiratory failure
- Occupational lung diseases
- Bronchogenic carcinoma
- Mediastinal Syndrome
- Disorders of the chest wall and pleura
- Lung Cysts

Tropical Medicine

- Fever
- Enteric fevers
- Brucellosis
- Meningitis
- Schistosomiasis
- Tuberculosis
- Amoebiasis
- Malaria
- Lishmaniasis
- Filariasis
- HIV
- Pyrexia of undetermined etiology
- Cholera and Tetanus
- Antibiotics
- Viral infections and anti-viral drugs
- Vaccinations

Neurology course

- Cerebral atherosclerosis

- Cerebrovascular accidents and stroke
- Hemiplegia
- Paraplegia
- Peripheral Neuropathies
- Ataxia
- Extra pyramidal syndromes
- Neurologic bladder disorders
- Speech abnormalities
- Epilepsy and convulsive disorders
- Space occupying lesions
- Disease of muscles and Neuro-muscular Junction
- Dementia
- Meningitis and encephalitis

Psychiatry course

- Main groups of Psychotropic medications
- Organic mental disorders
- Mood disorders
- Schizophrenia
- Neurotic ,stress related and somatoform disorders
- Sexual dysfunction not caused by organic disorder or disease
- Eating disorders

Clinical training Course

(10 weeks) in internal medicine

and (12 weeks) in medicine specialties

- History taking

- General Examination

Gastroenterology case taking &Examination:

- Jaundice
- Cirrhosis
- Portal Hypertension
- Ascites and Peritoneal disease
- Hepatic Failure

Nephrology case taking &Examination:

- Chronic renal failure
- Nephrotic syndrome
- Diabetic Nephropathy

Endocrinology case taking &Examination:

- Diabetes
- Cushing syndrome
- Goiter
- Thyrotoxicosis
- Myxedema
- Acromegaly and other pituitary tumors
- Vitamin deficiencies
- Obesity

Hematology case taking &Examination:

- Anemia
- Lymphadenopathy
- Bleeding disorders
- Thrombotic disorders

- Leukemia

Rheumatology case taking &Examination:

- Joint examination
- Rheumatoid arthritis
- Systemic lupus erythematosis
- Osteoarthritis
- Osteoporosis

cardiac case taking &Examination:

- valvular heart diseases
- Ischemic heart diseases
- Core pulmonale
- Pericardial effusions
- Arrhythmias

Chest case taking &Examination:

- Ashma
- COPD
- Suppurative syndromes
- Emphysema
- Pleural diseases
- Interstitial lung diseases

Neurological system case taking &Examination:

- Stroke
- Hemiplegia
- Paraplegia
- Extra pyramidal syndromes

- Peripheral Neuropathies and radiculopathies

Tropical Medicine case taking &Examination:

- Enteric Fevers
- Shistosomiasis
- Amoebiasis

Practical Training Course

Radiology

- Interpretation of conventional x-rays
- CT scans

Clinical Pathology

- Urine and stool examination
- Liver function tests
- CSF
- Blood picture
- Blood Film
- Serological tests
- Blood transfusions

ECG INTERRETATION

- Imaging in Cardiology
- Pulmonary Function tests
- Imaging in Neurology
- Hemodialysis
- Peritoneal dialysis
- Central venous catheterization

- Imaging in Hepato-biliary diseases
- Gastro-intestinal endoscope

Attendance and making a short report about:

b. 5 different cases from Outpatient Clinic
c. 5 different cases from the Emergency Room (ER)
d. 5 different cases from the Intensive Care Unit (ICU)
e. 2 different cases from Special Unites (S.U), (Endoscope, Haemodialysis & Ultrasound)

Observation of at least 5 bedside procedures in the internal medicine wards:, e.g., ECG making, paracentesis, IV line and cannulation, upper GIT tubes (ryle & sungestaken) blood sampling, enema, catheterization, etc.

3 – Intended learning outcomes of course (ILOs) hours

ILO	Topics	No. of hours per week	Total no. of hours per year	Hours for lectures	Hours for tutorial and other small group or project	Hours for practical
Knowledge and Understanding: a 1 a 2 a 3	Introduction Nephrology Endocrinology		 19 19 20	 7 7 8		 12 12 12
Intellectual skills B 1 B 2 B 3	Haematology		20 19 19	8 7 7		12 12 12
Professional and practical skills	Rheumatology		20	8		12

ILO	Topics	No. of hours per week	Total no. of hours per year	Hours for lectures	Hours for tutorial and other small group or project	Hours for practical
c 1	Immunology		20	8		12
c 2			19	7		12
c 3						
General and transferable skills	Genetics		19	7		12
d 1			19	7		12
d 2			19	7		12
d 3						
Attitude	Pharmaceuticals		19	7		12
e 1			20	8		12
e 2			19	7		12
e 3	Emergency medicine					
	X-ray & ECG					
	Geriatrics					

PEDIATRICS

Taught hours Lectures: 108, Practical: 150 Total: 258

Course content

Topics	Lecture Hours	Tutorial /Practical hours
1- Growth and Development	7	9
2- Nutrition and Infant Feeding	9	11
3- Perinatology/Neonatology	9	11
4- Social and Preventive Pediatrics	3	5
5- Genetics and Dysmorphology	5	7
6 Nephrology	5	7
7- Cardiovascular System	7	9
8 Respiratory System	7	9
9- Hematology/Oncology	10	10
10- Infectious and Parasitic Diseases	8	8
11- Endocrinology and Metabolism	8	6
12- Neuromuscular Disorders	8	8
13- Gastroenterology and Hepatology	8	8
14 - Pediatric Emergencies	10	10
15 - Behavioral Pediatrics	4	2
Total	108	120

Detailed topics

I- Theoretical Course

1. GROWTH & DEVELOPMENT

o Normal patterns of growth and development, and factors affecting them.

o Normal developmental milestones.

o Abnormal patterns of growth and development, and causative factors.

o Instruments of anthropometric measurement and their application including body-mass index (BMI), normal and abnormal.

o Tools of developmental evaluation in infancy, childhood, and adolescence.

2. NUTRITION & INFANT FEEDING

- Nutritional counseling of families regarding:
  - Breastfeeding
  - Complementary feeding
  - Appropriate balance of food groups qualitatively and
  - quantitatively in the diet.
  - Basic vitamin groups and their common dietary sources.
  - Dietetic history that includes the types, amount, and frequency
  - of milk feeds, solid foods and dietary supplements.
  - Infant weaning.

o Protein energy malnutrition syndromes.

o Common vitamins and mineral deficiencies.

o Nutritional risk factors for cardiac disease and diabetes.

o Nutritional assessment in children beyond infancy in situations when growth is inadequate or excessive or when family risk factors suggest the possibility that nutritional modification will be needed.

3. PERINATOLOGY & NEONATOLOGY

- o Obstetrical and neonatal risk factors.
- o Care of the normal newborn.
- o Neonatal resuscitation.
- o Growth patterns and nutrition of the newborn.
- o Neonatal mortality.
- o Common neonatal problems:
  - Prematurity and low birth weight.
  - Birth injuries.
  - Respiratory disorders.
  - Hyper-bilirubinemia.
  - Sepsis.
  - Neurological disorders.
  - Cardiovascular disorders.
  - Hematological disorders.
  - Metabolic disorders.
  - Surgical emergencies.

4. SOCIAL & PREVENTIVE PEDIATRICS

- o Pattern of morbidity and mortality in the society.
- o Integrated Management of Childhood Illness (IMCI) and its role in preventive and social aspects of pediatrics.
- o Immunization program.
- o Common teratogenic agents and their effect on the child health.
- o Injury prevention.

5. GENETICS & DYSMORPHOLOGY

- o Basic mechanism of Mendelian inheritance, multifactorial inheritance, and the “carrier” state.
- o History taking and examination skills relevant to genetic and

dysmorphologic disorders.

o Causes of malformation and genetic disorders and basic knowledge of the appropriate diagnostic tests and clinical course for common disorders.

o Antenatal diagnosis and newborn screening programs.

o Common chromosomal syndromes (Down Syndrome).

6. NEPHROLOGY

o Common symptoms of renal and urinary tract disorders.

o Developmental renal and urinary tract disorders.

o Acquired glomerular diseases (nephrosis, nephritis, acute and chronic renal failure).

o Urinary tract infections.

7. CARDIOVASCULAR SYSTEM

o Hemodynamics of the normal heart.

o Rheumatic fever and rheumatic heart disease.

o Pathophysiology of the more common congenital heart defects (ASD, VSD, PDA, PS, and Fallot's tetralogy).

o Indications, and hazards of various types of cardiovascular investigations.

o Basic mechanisms of heart failure and the principles of its management in the pediatric patient.

8. RESPIRATORY SYSTEM

o Rhinitis, pharyngitis, tonsillitis, adenoiditis, and otitis media.

o Laryngitis, epiglottitis, and tracheitis.

o Bronchitis, bronchiolitis, and bronchiectasis.

- Acute pneumonia.
- Wheezy chest and bronchial asthma.
- Pleural effusion, pneumothorax.
- Foreign body inhalation.

9. HEMATOLOGY / ONCOLOGY

- Normal hematopoiesis.
- Normal hemostasis.
- Common anemias.
- Bleeding and coagulation disorders.
- Common pediatric malignancies.

10. INFECTION & PARASITIC INFECTION

- Common exanthemata: measles, German measles, roseola infantum, fifth disease, scarlet fever, varicella-zoster, etc.
- Common enanthemata (e.g., oral moniliasis, herpetic stomatitis).
- Diphtheria, tetanus, pertussis, mumps and hemophilus.
- GIT and hepatic infections (e.g., salmonellosis, shigellosis, hepatitis).
- Common parasitic infestations: schistosomiasis, malaria, amebiasis, giardiasis.
- CNS infections: meningitis, encephalitis.
- Tuberculosis.
- Septic shock.
- Fever of unknown etiology.

11. ENDOCRINOLOGY & METABOLISM

- Short stature.
- Inborn errors of Metabolism.
- Diabetes mellitus.
- Thyroid disease (congenital and acquired).

12. NEUROMUSCULAR DISORDERS

- Normal milestones of development.
- Microcephaly & Hydrocephalus.
- Floppy infants.
- Mental retardation.
- Cerebral palsy.
- Seizure syndromes.
- Hereditary myopathies (muscle dystrophy).
- Anticonvulsant drugs.

13. GASTROENTEROLOGY

- Acute GE, chronic and persistent diarrhea.
- Dehydration.
- Vomiting.
- Abdominal pain.
- Ascitis.
- Hepatomegaly/splenomegaly.
- Jaundice.

14. PEDIATRIC EMERGENCIES

- CPR.
- Shock.
- Seizures.

o Coma.

o Airway obstruction.

o RD/Apnea.

o Metabolic emergency.

o Drowning and near drowning.

15. BEHAVIORAL PEDIATRICS

o Genetic and environmental influences on behavior.

o Age-appropriate behavioral concerns during the health care supervision visit.

o Counseling the parents and children on management of common behavioral such as discipline, toilet training (enuresis, encopresis) and eating disorders.

II- Clinical training Course

• History taking

• General Examination

- **Clinical Cases:**

1. NUTRITION

o PEM.

o Rickets.

2. GENETIC

o Trisomy 21.

o Mental retardation.

3. NEONATOLOGY

o Preterm.

- Jaundice.

4. RESPIRATORY

- Bronchial asthma.
- Acute bronchiolitis.
- Pneumonias.
- Pleural effusion.

5. CARDIOVASCULAR & RHEUMATOLOGY

- Acute rheumatic fever.
- Rheumatoid arthritis.
- Rheumatic heart disease (mitral regurge, mitral stenosis).
- Congenital heart disease (VSD, Fallot tetralogy).

6. NEUROLOGY

- Cerebral palsy.
- Convulsions.
- Hydrocephalus.
- Duchene-muscular dystrophy.

7. NEPHROLOGY

- AGN.
- NS.

8. GIT

- Gastroenteritis.
- Dehydration.
- Hepatosplenomegaly.

9. HEMATOLOGY

o Anaemias.

o Purpura.

o Leukemia (All).

10. ENDOCRINOLOGY

o Short stature.

o Hypothyroidism.

o Diabetes mellitus.

- **Physical signs (OSCE):**

1. NEONATOLOGY

o Neonatal resuscitation (model).

o Moro reflex.

2. CARDIOVASCULAR

o Pulse.

o ABP.

o Neck veins.

o Apex beats.

o Pulmonary area pulsations.

o Epigastric pulsations.

o Percussion of the heart.

3. CHEST

o Percussion of the chest.

4. ABDOMEN

o Liver.

o Spleen.

o Ascites.

5. CNS

- o Knee jerk.
- o Planter reflex.
- o Signs of meningeal irritation.

6. NEPHROLOGY

- o Palpation of kidneys.
- o Oedema.

7. NUTRITION

o Head circumference.

o Anterior frontanelle.

Practical Training Course

Radiology

• Interpretation of conventional x-rays

Clinical course activities

The student should

- **present** (5 cases & one talk) ,
- **write** (an essay) ,
- **attend** (at O.C , ER, ICU.)
- **Presentation:**
- Case presentation:
  Presentation of 5 clinical cases of different systems.

B. Talk:

One talk of 10 – 15 min. On a common symptom, sign or differential diagnosis e.g., dyspnea, cyanosis, clubbing, edema , jaundice, etc…..

- **Writing an essay**
  - About 10 pages on one common medical subject e.g., bleeding tendency, hemolytic anemia, purpura, lymphomas etc…..

- **Attendance and making a short report about:**
- 5 different cases from Outpatient Clinic
- 5 different cases from the Emergency Room (ER)
- 5 different cases from the Intensive Care Unit (ICU)
- 2 different cases from the Neonatal Intensive Care Unite (ICU)

GENERAL SURGERY & SPECIALITIES

Taught hours:

Lecture: 216 hrs. Practical: 330hrs. Total: 546hrs.

Subject	Lectures (hours)	Practical (hours)	Total (Hours)
General Surgery Skin and soft tissue Vascular surgery Faciomaxillary ad oral cavity Edocrine & breast Abdominal wall peritoneum Gastro intestinal tract Hepatopanereatico-biliary Spleen	150	60	210
fractures & Orthopaedics	15	35	50
Genitouriary surgery	10	35	45
Cardiothoracic surgery	6	25	31
Neurosurgery	10	30	40
Anaesthesia	5	15	20
Paediatric surgery	10	25	35
Plastic surgery & burns	10	15	25
Total	216	240	456

Content:

1- GENERAL SURGERY INCLUDES:

*Introduction to surgery:

- Wounds, wound healing and wound management.
- Surgical infections and nosocomial infection and their management.

- Management of the severity injured and critically ill patient including metabolic response to trauma.
- Preoperative assessment and postoperative complications of the surgical patients.
- Hemorrhage, hemorrhagic disorders and blood transfusion.
- Fluids, electrolytes and acid-base balance.
- Shock.
- Burns.
- Nutrition in surgery.
- Tumor biology and management.
- Organ transplantation.
- Medical problems in the surgical patient including metabolic disorders.
- Lymph node diseases.

***Plastic surgery and burn:**

- Introduction (grafts, flaps, repair of tissue defects and craniomaxillofacial surgery).
- Face, lips, and palate.
- Surgery of nerves.
- Disorders of muscles, tendons and fascia.
- Hand infection and hand injuries.
- Burn management.
- Breast reconstruction.

***Vascular surgery:**

- Arterial system (injuries; acute ischemia; occlusive arterial disease includes aneurysms; arteriovenous malformation; vasculitis).
- Venous system (V.V and venous thrombo-embolism, CVI).
- Lymphatic system: lymphangitis, lymphatic obstruction and lymphoedema, lymphatic malformation.

***Endocrine surgery:**

- Thyroid, parathyroid and adrenal glands.

***Breast surgery.**

***GIT and abdominal surgery:**

- Abdominal trauma.
- Abdominal wall hernia.
- Endoscopic and laparoscopic surgery.
- Acute abdomen.
- Esophagus.
- Stomach and duodenum.
- Liver.
- Portal hypertension.
- Biliary system.
- Pancreas.
- Spleen.
- Small intestine.
- Larger intestine.
- Appendix.
- Peritoneum, mesentery and omentum.
- Diaphragmatic hernia.
- Obesity & bariatric surgery.
- Pediatric surgery and anomalies of the gastrointestinal tract.

2- SPECIAL SURGERY COURSES:

*UROLOGY:

- Anatomy and embriology.
- Symptomatology & physical examination.
- Investigations of urinary tract.
- congenital anomalies.
- Trauma to urinary tract.
- Urinary tract infections.
- Inguinoscrotal swellings.
- Varicocele and male infertility.
- BPH.
- Obstructive uropathy.
- Stone disease.
- Urogenital neoplasms.
- Voiding disorders.
- Pediatric urology.

- Parasitic infection.
- Eectile dysfunction.
- Endourology.
- Infertility.

***ORTHOPEDIC SURGERY:**

- Infection.
- Bone tumors.
- Deformities.
- Arthritis.
- Perth`s disease.
- CDH.
- Knee.
- Flat foot.
- TEV.
- Recurrent dislocation of shoulder.
- Supraspinatus tendonitis.
- Tennis elbow.
- Tenosynovitis, trigger finger, ganglion (wrist & hand).
- CTS (wrist & hand).
- Scoliosis, kyphosis, lordosis.
- Infection of the spine.
- Tumors of the spine.
- trauma surgery including:
- General principle of bone fractures.
- Neurovascular injuries and acute ischemia.
- Open fractures.
- Complications of fractures (local& systemic).
- Shoulder, arm, elbow injuries.
- Forearm, wrist injuries.
- Hand injuries.
- Pelvic injuries.
- Fractures around hip joint.
- Femoral fractures.
- Knee injuries.

- Leg injuries.
- Ankle and foot injuries.
- Spinal fractures.
- Fractures in children.
- Basic principles of internal fixation.

***Neurosurgery:**

- Injuries of peripheral nerves.
- Autonomic nervous system.
- Nerve tumors.
- Congenital anomalies of the skull.
- Fracture of the skull.
- Intracranial injuries.
- Hydrocephalus.
- Brain abscess.
- Intracranial tumors.

***Cardiothoracic surgery:**

- Chest trauma.
- Empyema.
- Bronchogenic carcinoma.
- Principles of cardiac surgery.
- Valve surgery.
- Surgery of congenital heart disease.
- Surgery of pulmonary T.B.
- Surgery of suppurative lung disease.
- Surgery of mediastinal disease.
- Surgey of ischemic heart disease.
- Pleural disease

***Anesthesia:**

- Preopereative assessment & premedication.
- I.V anesthesia.
- Inhalational anesthesia.
- Muscle relaxants.
- Endotracheal intubation.

- Local anesthesia, spinal, epidural.
- Fluid therapy.
- Shock.
- Blood transfusion.
- Cardiac arrest.
- Postoperative pain relief.

--LIST (1): CLINICAL CASES:

- History taking and clinical examination.
- Clinical diagnosis of swelling and tumors.
- Common conditions like: cellulitis, abscess, lipomas etc.
- Ulcers, sinuses, fistulae.
- Lesions of the head, scalp, skull, face, lips, tongue, palate, cheek, jaw, and floor of the mouth.
- Parotid swellings.
- Swellings at the side, in the medline, and in the submandibular regions of the neck.
- Thyroid lesions including physiological, nodular, toxic, malignant, and its lesions.
- Breast lesions including; lumps, pain, nipple discharge.
- Axillary swellings.
- Clinical diagnosis of acute abdomen.
- Abdominal swellings including; organomegally and swellings in different quadrants.
- Abdominal pain and dyspepsia.
- Dysphagia.
- Haematemesis.
- Jaundice of surgical importance.
- Hepatomegally.
- Splenomegally.
- History taking in anal and rectal disease.
- Clinical diagnosis of hernia cases: inguinal, femoral and umblical.
- Scrotal and inguinoscrotal swellings.
- History taking and examination of urological cases.
- Peripheral ischemia.

- Gangrene.
- Varicose veins.
- Peripheral nerve injuries.
- Oedema of limbs.
- A swelling in the ends and shaft of long bones.
- A swelling in popliteal fossa.
- Joint disease.
- Diseases of the spine.

--LIST (2): LIST OF JARS:

1- GIT Jars Include:

- Carcinoma of the stomach.
- Colon polyps.
- Carcinoma of the rectum.
- Carcinoma of the ceacum.
- Intussusception.
- Multiple polyposis of the colon.
- Acute appendicitis.
- Typhoid ulcer of the colon.

2- Hepatobiliary:

- Chronic calcular cholecystitis.
- Multiple liver metastasis.
- C.C.C. with a solitary cholesterol stone.

3- Urology:

- Hydronephrosis due to pelvi-ureteric junction (PUJ) obstruction.
- Hydroureter and hydronephrosis.
- Renal cell carcinoma (hypernephroma).
- Renal tuberculosis.
- Cancer of urinary bladder with back perssure effects (bilateral hydroureter).
- Polycystic kidney.
- Seminoma of the testis.
- Testicular tumors.

4- Spleen:

- splenic injury.
- Splenomegally.
- Splenic focal lesion.
- Multiple focal lesions of the spleen.

5- Breast:

Breast cancer (modified radical mastectomy).

6- Head & Neck:

- Solitary thyroid nodule.
- Multinodular goitre.
- Total thyroidectomy.
- Lymph node excisional biopsy.
- Oesophageal atresia.
- Epithelioma of the scalp.

--LIST (3): LIST OF SURGICAL ANATOMY TOPICS:

- The scalp.
- The thyroid.
- The parotid gland.
- The breast.
- Axillary and brachial arteries.
- Radial, median and ulnar nerves.
- Abdominal wall.
- The inguinal canal.
- The stomach.
- The rectum and anal canal.
- The liver.
- The spleen.
- The kidneys.
- The ureters and urinary bladder.
- Femoral and popliteal arteries.
- Long and short saphenous veins.
- Sciatic, medial and lateral popliteal nerves.

- Muscles: sternomastoid, deltoid, pectoralis major, latisssimus dorsi, rectus abdominis, quadriceps, psoas major, scalenie muscles, gluteus maximus, diaphragm.

--LIST (4): LIST OF OPERATIVE PROCEDURES:

- Principles of coverage of skin defects.
- Management of compound depressed fracture of the skull.
- Indications and principles of surgical interference in head injuries.
- Thyroidectomy.
- Principles of management of hyperthyroidism.
- Principles of management of carcinoma of the thyroid gland.
- Management of cold abscess in the neck.
- Hand infections.
- Management of fracture clavicle.
- Management of a sucking wound in the chest.
- Management of hemothorax.
- Management of pneumothorax.
- Acute lactational mastitis and breast abscess.
- Principles of management of carcinoma of the breast.
- Hernia operations.
- Management of inguinal hernia (technique).
- Management of strangulated inguinal hernia.
- Surgical management of hydrocele.
- Varicocelectomy.
- Appendectomy.
- Management of a stab wound in the right hypochondrium.
- Management of rupture spleen.
- Principles of management of adhesive intestinal obstruction.
- Management of bleeding esophageal varices.
- Management of bleeding peptic ulcer.
- Management of perforated duodenal ulcer.
- Management of infantile ileocecal intussusception.
- Principles of management of hemorrhoids.
- Management of acute anal fissure.
- Management of a stone in the left kidney.

- Exposure of the ureter.
- Management of stone ureter.
- Acute urinary tract infection: causes and treatment.
- Male circumcision.
- Management of fracture shaft femur.
- Management of fracture neck femur.
- Principles of management of arterial injuries.
- Above knee amputation.

--LIST (5): BEDSIDE SKILLS:

- IV, IM and SC injection.
- Insertion of IV canula.
- Insertion of urinary catheter.
- PR/PV examination.
- Insertion of nasogastric tube.
- Simple skin suturing.

GYNECOLOGY & OBSTETRICS

Taught hours : Lectures: 108 Practical: 150 Total: 258

COURSE CONTENTS:

Obstetric Topics

Obstetric Topics	Lecture	Practical
Part (1) Normal pregnancy		
a. Reproductive biology	2	0
b. Physiological changes during pregnancy	1	1
c. Diagnosis of pregnancy	1	1
d. Antenatal care	1	1
Part (2) Abnormal pregnancy		
1.Hemorrhage in early pregnancy 2. Abortion 3. Ectopic pregnancy	2	1

Obstetric Topics	Lecture	Practical
4. Molar pregnancy		
1.Hemorrhage in late pregnancy 2. Classifications of Antepartum hemorrhage 3. Placenta praevia 4. Abruptio placentas	1	1
Part (3) Medical disorders with pregnancy		
1. Vomiting of pregnancy	1	1
2. Hypertensive disorders in pregnancy	1	1
3. Heart disease in pregnancy	1	1
4. Anemia in pregnancy	1	1
5. Diabetes mellitus in pregnancy	1	1
6. Urinary tract infections & pyelitis with pregnancy	1	1
7. Infectious disease in pregnancy	1	1
8. Polyhydramnios and oligohydramnios	1	1
9. Miscellaneous disorders with pregnancy a. Pendulous abdomen b. Gynecologic tumors with pregnancy c. Abdominal pain during pregnancy d. Elderly primigravida e. Grand multipara	1	1
10. High-risk pregnancy	1	1
Part (4) Normal labor		
1. Components of labor a. Passages (Female pelvis) b. Passengers (Fetal skull and the fetus)	1	1
2. Mechanism and physiology of uterine contraction	1	1
3. Management of normal labor	1	1

Obstetric Topics	Lecture	Practical
4. Newborn baby		
5. Obstetric analgesia and anesthesia	1	1
Part (5) Abnormal labor		
1. Malposition and malpresentation • Occipito-posterior position • Face presentation • Brow presentation • Complex presentation • Breech presentation • Shoulder presentation • Unstable lie and shoulder dystocia • Cord presentation and prolapse	4	12
2. Multiple (Multi-fetal) pregnancy	1	1
3. Abnormal uterine action	1	1
4. Obstructed labor including Contracted pelvis	1	1
5. Obstetric genital tract injuries • Uterine rupture • Cervical lacerations • Vaginal lacerations • Perineal lacerations • Genital tract haematomas	2	1
6. Postpartum hemorrhage and obstetric shock	1	1
7. Other complications of the third-stage of labor • Retained placenta • 2. Acute uterine inversion	1	1
8. Acquired coagulation defects in obstetrics	1	1
Part (6) Normal puerperium		
1. Normal puerperium 2. Postnatal examination	1	1

Obstetric Topics	Lecture	Practical
Part (7) Abnormal puerperium		
1. Puerperal pyrexia 2. Puerperal sepsis	1	1
4. Breast disorders in the puerperium 5. Suppression of lactation	1	1
Part (8) The Fetus and Newborn baby		
1. Assessment of fetal growth, maturity and well being	2	1
2. Neonatal jaundice and Rh isoimmunisation	1	1
3. Placental insufficiency: fetal growth retardation and macrosomia **4**. Intra-uterine Fetal death	1	1
5. Fetal asphyxia	1	1
6. Respiratory distress syndrome	1	1
7. Injuries of the newly born infants	1	1
8. Pre-term labor **9**. Premature rupture of membranes	1	1
10. Post-maturity and post-maturity syndrome **11.** Congenital anomalies and Prenatal diagnosis of congenital defects	1	1
Part (10) Operative obstetrics	**3**	**1**
a. Therapeutic abortion and induction of abortion b. Induction of labor	1	1
c. Forceps delivery in modern obstetrics d. Vacuum extraction	1	1
e. Episiotomy f. Cesarean section g. Destructive operations on the fetus	1	1
Part (11) Appendages		
1.Uterine relaxants (Tocolytics)	1	1

Obstetric Topics	Lecture	Practical
2. Uterine stimulants (Ecbolics and oxytoxics) 3. Maternal and perinatal mortality		
Total	**54**	**60**

Gynaecology Topics

Gynaecology Topics	Lecture	Practical
Part (1) Anatomy of the female genital tract		
1. External genitalia	**1**	**0**
2. Internal genitalia	**1**	**0**
3. Female pelvic structures and its blood supply	**1**	**0**
Part (2) Embryology and Genetics		
1. Development of the female genital organs	**1**	**0**
2. Congenital abnormalities of the genital tract	**1**	**0**
3. Basic genetics for gynecologist	**1**	**0**
Part (3) Physiology of menstruation		
1.Hormonal control, ovarian cycle and menstrual cycle	**1**	**0**
2. Puberty 3. Menopause	**1**	**1**
Part (4) Disorders of menstruation		
1. Dysmenorrhea 2. Premenstrual tension syndrome	**1**	**1**
3. Amenorrhea	**1**	**1**
4. Abnormal menstruation and bleeding: a. Oligomenorrhea b. Hypomenorrliea c. Menorrhagia	**1**	**1**

Gynaecology Topics	Lecture	Practical
d. Polymenorrhea e. Metrorrhagia f. Dysfunctional uterine bleeding g. Post menopausal bleeding h. Prepubertal bleeding		
Part (5) Infertility and sexuality		
1. Anovulation, PCO and induction of ovulation	1	1
2. Cervical factors of infertility **3.** Uterine factors of infertility **4.** Tubal factors of infertility	1	1
5. Vaginal factors of infertility **6.** Male factors of infertility **7.** Unexplained infertility	1	1
8. Hirsutism	1	1
9. Female sexuality and sexual dysfunction	1	1
Part (6) Contraception		1
1. Physiological methods of contraception 2. Mechanical methods of contraception 3. Chemical contraceptives (spermicides)	1	1
4. Intrauterine contraceptive devices	1	1
5. Hormonal contraceptives	1	2
6. Sterilization	1	2
7. Post coital contraception 8. Contraception for newly married couples	1	2
Part (7) Genital infections		
1. Sexually transmitted diseases	1	2
2. Vulvitis 3. Pruritus vulvae 4. Vulval swellings	1	2

Gynaecology Topics	Lecture	Practical
5. Vaginitis 6. Leucorrhea	1	2
7. Cervicitis	1	2
8. Salpingitis	1	2
9. Genital tuberculosis 10. Billiarziasis of female octal tract	1	2
Part (8) Genital displacements		
1. Genital prolapse	1	2
2. Retroverted retroflexed uterus (R.V.F) 3. Chronic inversion of the uterus	1	2
Part (9) Pelvic injuries & disturbances of micturition		
1. Genito-urinary fistula	1	2
2. Stress incontinence **3.** Causes of frequency of micturation **4.** Causes of retention of urine	2	2
5. Old complete perineal tear **6.** Recto-vaginal fistula	2	2
Part (10) Endometriosis		
Part (11) Gynecologic oncology		
1.Tumors of the vulva 2. Tumors of the vagina	2	2
3. Tumors of the cervix	2	2
4. Tumors of the body of the uterus a. Uterine fibroid b. Endometrial carcinoma c. Choriocarcinoma	4	4
5. Tumors of the ovary	2	4
Part (12) Differential diagnosis in gynecology		

Gynaecology Topics	Lecture	Practical
1. Causes of pelvi-abdominal swelling. 2.Causes of a mass felt in pouch of Douglas 3.Causes of abdominal pain in gynecology 4.Causes of low backache	2	2
Part (13) Gynecological therapy & diagnosis		
1. Radiotherapy and chemotherapy in gynecology	2	1
2.Hormone therapy in gynecology 3. Toxic shock syndrome	2	2
Part (14) Gynecological operations		
a. Dilatation & curettage b. Hysterectomy	2	2
c. Laparoscopy and other endoscopy	2	2
Total Hours	**54**	**60**

List of available instruments

Gynecology

Uterine curettes (types).
Uterine sound.
Cervical dilators (types).
Cervical biopsy punch forceps.
Sharman's (Novak's) endometrial biopsy curette.
Pipell endometrial sampling device.
Volsellum forceps (types)
Vaginal specula (types).
Vaginal retractors (types).
Self retaining abdominal retractors (types).
Trocar and cannula for laparoscopy.
Uterine holding forceps.
Female metal catheter.
Cannula for HSG (types).
Trocar , cannula and Verres needle for laparoscopy.

Kochers and clamps (types)
Bonney's myomectomy clamp.
Doyen's myoma screw.
Female metal catheter.
Ayre's spatula.

Obstetrics

Obstetric forceps (types).
Vacuum extractor.
Ovum forceps.
Ring forceps.
Bozemann's dressing forceps
Suction curette.
Green Armytage' s hemostasis forceps.
Pinard's fetal stethoscope.
Doyen's retractor.
Amniotomy hook.
Meltal mucus catheter

List of available jars

X-rays and Ultrasounds

Contraceptive methods

Equipments: Doppler, CTG, Ultrasound

Time Plan:

Item:	Time schedule	Teaching hours	Total hours
Lecture	3 times weekly	One hour	**108**
Practical	5 times weekly	Three hours	**180**
Total			**288**

Gynecology and obstetrics

Register **dean**

Certificate

This is the programe spec. & Courses spec. Of MBBch

of Menoufia Faculty of medicine studied by:

MOSTAFA KADRY GHAZY MOHAMED

and completed at November 2009

Vice Dean **Dean**

Register **Dean**