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Islamic University - Gaza
Faculty of Medicine

Doctor of Medicine (M.D.)
Courses Descriptions

Introduction:

The faculty of Medicine at the Islamic University – Gaza (IUG) was established in 2006. It has officially started to accept students in 2006 based on the curriculum approved at that time.

Since establishment of the Faculty it's curriculum has been revised twice in 2009 and in 2012.

The second revision in 2009 is implemented and applied to students, who will graduate until June, 2017.

N. B: For any further revision and inquires please visit the website of the Faculty of Medicine: http://medicine.iugaza.edu.ps/en

Table of Content:

University Requirements

Key:

Basic Sciences:

1. Each credit hour is equivalent to one hour lecture (*).
2. Each credit hour of laboratory is equivalent to two hours of Lab. teaching and experiment demonstration (**)

Clinical Sciences:

1. Each week of clinical rotation is equivalent to thirty contact hour **(***).**
2. Each credit hour is equivalent to one week of clinical rotation.

* **: (1 credit hour = 1 contact hour)**
** **: (1 credit hour = 2 lab contact hours)**
*** **: (5 days x 6 hours) = 30 hours per week**

Basic Sciences

* : (1 credit hour = 1 contact hour)
** : (1 credit hour = 2 lab contact hours)
*** : (5 days x 6 hours) = 30 hours per week

Practical Organic Chemistry **

Course Code: CHEM 1110
Study Hours: One Credit hour (32 hours)

In this lab course, students perform experiments that illustrate the principles learned in theoretical organic chemistry course.

Learning outcomes:
By the end of this course, students should be able to:

1. Handle organic chemicals in a safe and competent manner.
2. Perform the standard techniques used in practical organic chemistry.
3. Carry out an organic preparation following a prescribed procedure.
4. Read and explain the information labels on chemical bottles.
5. Measure and report relevant physical properties of prepared compounds.
6. Identify selected organic unknowns.
7. Use the reference material found in the laboratory.
8. Describe the location and use of safety equipment in the laboratory
9. Explain the emergency procedures followed in the laboratory.

Course Contents (Experiments):

- Determination of melting point and refractive index
- Recrystallization
- Isolation of a naturally occurring compound from plant material
- Simple and fractional distillation
- Chromatography
- Thin layer
- Gas-liquid
- Extraction, separation and derivative formation
- Grignard Reaction
- Polarimetry
- Molecular models

Assessment:

- Quizzes
- Mid-term Practical Exam
- Seminar
- Final written and practical Exam

General Chemistry * and Practical General Chemistry **

Course Code: CHEM 1215, CHEM 1115
Study Hours: Three Credit Hours (Total 64 hours)

This is an introductory course in general chemistry that is especially designed for the students of Medicine. In this course students will learn about atomic structure and periodicity, reaction stoichiometry, types of chemical reactions, thermochemistry, bonding theory, gases, intermolecular forces and states of matter, mixtures, thermodynamics, acid-base equilibria as well as chemical kinetics.

Course Contents:
I. Measurement in chemistry - A. Metric system B. Unit conversions and dimensional analysis B. Density and specific gravity C. Temperature scales
II. Properties of matter A. States of matter B. Physical and chemical changes C. Physical and chemical properties D. Mixtures E. Elements F. Compounds
III. Structure of matter A. Law of definite proportions B. Atomic structure C. Periodic table CHM 130 November 2016 D. Nuclear chemistry
IV. Chemical bonding A. Types of chemical bonding (ionic, polar covalent, nonpolar covalent) B. Writing formulas for compounds C. Naming compounds D. Formula weights
V. Chemical equations A. Types of equations B. Balancing equations C. Chemical equilibrium D. Reaction rates and catalysis
VI. Energy and matter A. Energy transfer associated with chemical reactions and physical processes B. Energy changes and specific heat capacity C. Intermolecular forces and physical properties that depend on them
VII. Chemical mole and mole-based calculations A. The mole concept C. Stoichiometric calculations
VIII. Gas Laws A. Charles Law B. Boyles Law C. Gay-Lussac's Law D. Universal Gas Law E. Dalton's Law F. Henry's Law
IX. Oxygen A. Physical and chemical properties B. Ozone C. Oxidation-reduction reactions
X. Water A. Chemical and physical properties B. Hydrogen bonding
XI. Solutions A. Properties of true solutions B. Properties of colloidal solutions C. Properties of suspensions D. Solubility and miscibility, E. Concentration
X. Ionization and dissociation
XI. Acids and bases A. Properties of Arrhenius acid bases B. Properties of Bronsted-Lowry acids and bases C. pH D. Neutralization E. Titration F. Buffers

Assessment:

- Quizzes
- Mid-term written Exam
- Seminar
- Final written Exam

Organic Chemistry *

Course Code: CHEM 1310
Study Hours: Three Credit hours (48 hours)

This course covers the basic principles of organic chemistry with a throughout course emphasis on energy changes & chemical reactivity, structure and bonding and acid-base theories. Electron push pull mechanisms are stressed as a means of understanding organic reactions. The course surveys the major classes of organic compounds starting with alkanes and ending with a variety of polyfunctional organic compounds.
Structural concepts such as conformational analysis, stereochemistry and spectroscopy will also be emphasized as means of analyzing & hence understanding organic reactions.

Course Outlines:

- Basic concepts A. Scientific method B. Measurement and use of the metric system C. Precision and accuracy: uncertainty and significant digits D. Dimensional analysis.
- Chemical reactions A. Types of reactions B. Balancing C. Types of solutes (ionic and molecular); electrolytes D. Solubility rules E. Molecular and ionic equations.
- Liquids, solids, and solutions A. Kinetic-molecular description of liquids and solids B. Intermolecular forces and their effects on liquid properties C. Bulk properties of liquids and solids D. Vapor pressures and phase changes E. Phase diagrams F. The solutions process and factors affecting solubility G. Colligative properties of solutes H. Colloids
- Hydrocarbons
- Alcohols, alkyl halides, ethers
- Aldehydes and ketones
- Carboxylic acids
- Esters
- Amides
- Organic acids
- Cyclic organic compounds
- Heterocyclic organic compounds
- Amines
- Isomerism
- Chemical kinetics A. Reaction rates and mechanisms B. Catalysis
- Chemical equilibrium A. Homogeneous and heterogeneous equilibria B. Le Chatelier's principle
- Cell Structure and Function A. Function of cell structure B. Cell Membranes.

Assessment:

- Quizzes
- Mid-term written Exam
- Seminar
- Final written Exam

Introduction to Computer **

Course Code: CSCI 1101
Duration: Two Credit hours (32 hours)

This course is designed to provide students with hands-on experience of the personal computer and its uses in society. Application programs from the Microsoft Office Suite will be taught including Word, Excel, Access, and PowerPoint.

Uses of computer hardware and software in business and society; computer terminology; program definition and flowcharting/algorithms; introduction to programming using general purpose language and word processing, spreadsheet, database, graphics, multimedia, and Internet.

Using current varieties of software for assignment presentation including desktop publishing, grading, student information, presentation software from the computer to the screen, using the Internet to teach through websites and other varieties of multimedia.

Learning Outcomes:
Upon successful completion of this course, the student will have reliably demonstrated the ability to:

1. Access computer programs and files using desktop features.
2. Create documents in current software applications and perform file management tasks.
3. Explain the role of the Internet in research.
4. Navigate websites to gather information.
5. Use e-mail as a form of communication.

Course Content:
- File management
- Workplace software
- Internet research
- E-mail communication

Assessment:
- Attendance
- Mid-term Exam
- Final Exam

Practical Medical Biology **

Course code: MEDC 1101
Study Hours: One Credit hour (32 hours)

This laboratory course reinforces concepts introduced in medical biology.
Tools and techniques of cell biology will be used to study mitochondria, the cytoskeleton, intracellular transport, and cell division. Emphasis will be placed on improving scientific writing skills and safe practice procedures within a laboratory.

This course provides: An introduction to the laboratory methods and techniques employed in the study of mammalian cells in culture.
Students experiment with in vitro cell culture techniques including cell quantitation, growth curve analysis and microscopy.

These projects are designed to provide an experiential course-based research experience.

Assessment :

- Quizzes
- Practical Exam
- Seminar
- Final written Exam
- Oral Exam

Medical Biology *

Course code: MEDC 1301
Credit hours: Three Credit hours (48 hours)

Course description:
An elementary course in general biology designed to provide medical students with basic biological principles and understanding of various biological processes that govern life. The topics include the structure and function of macromolecules, flow and transformation of energy, structure and function of sub-cellular organelles, human systems and their function and basic knowledge in genetics, histology and microbiology. In addition, this course includes principals of blood cells

Contents:

1. **Functional Organization of the Human Body and Control of the "Internal Environment"** *:*
    a. Cells as the Living Units of the Body.
    b. Extracellular Fluid—the "Internal Environment".
    c. Homeostatic Mechanisms of the Major Functional Systems : (Homeostasis , Extracellular Fluid Transport and Mixing System—The Blood Circulatory System Origin of Nutrients in the Extracellular Fluid , Removal of Metabolic End Products , Regulation of Body Functions , Reproduction).
    d. Control Systems of the Body *(*Examples of Control Mechanisms, Characteristics of Control Systems*).*
2. **The Cell and Its Functions**
    a. Organization of the Cell.
    b. Cytoplasm and Its Organelles.
    c. Nucleus.
    d. Comparison of the Animal Cell with Pre cellular Forms of Life.
    e. Functional Systems of the Cell.
    f. Locomotion of Cells.
3. **Transport of Substances Through the Cell Membrane**
    a. The Lipid Barrier of the Cell Membrane, and Cell Membrane Transport.
    b. Diffusion Through the Cell Membrane.
    c. Osmosis Across Selectively Permeable Membranes—"Net Diffusion" of Water.
    d. "Active Transport" of Substances through Membranes.
4. **Membrane Potentials and Action Potentials**
    a. Basic Physics of Membrane Potentials.
    b. Resting Membrane Potential of Nerves.
    c. Nerve Action Potential.
    d. Initiation of the Action Potential and Propagation of the Action Potential.
    e. Rhythmicity of Some Excitable Tissues—Repetitive Discharge.
    f. Excitation—The Process of Eliciting the Action Potential.
    g. Recording Membrane Potentials and Action Potentials.

5. **Contraction and Excitation of Skeletal Muscle:**
    a. General Mechanism AND Molecular Mechanism of Muscle Contraction.
    b. Mechanics of Skeletal Muscle Contraction.
    c. Remodeling of Muscle to Match Function.
    d. Transmission of Impulses from Nerve Endings to Skeletal Muscle Fibers: The Neuromuscular Junction.
    e. Muscle Action Potential Spread of the Action Potential.
    f. Excitation-Contraction Coupling.
    g. Transverse Tubule–Sarcoplasmic Reticulum System Release of Calcium Ions by the Sarcoplasmic Reticulum.
    h. Myasthenia Gravis.

6. **Contraction and Excitation of Smooth Muscle**
    a. Contraction of Smooth Muscle.
    b. Contractile Mechanism in Smooth Muscle.
    c. Regulation of Contraction by Calcium Ions , Nervous and Hormonal Control of Smooth Muscle Contraction.
    d. Neuromuscular Junctions of Smooth Muscle.
    e. Effect of Local Tissue Factors and Hormones to Cause Smooth Muscle.

7. **Blood Cells, Immunity, and Blood Clotting**
    a. Production of Red Blood Cells.
    b. Formation of Hemoglobin.
    c. Iron Metabolism.
    d. Life Span and Destruction of Red Blood Cells.
    e. Anemias.
    f. Polycythemia.
    g. General Characteristics of Leukocytes.
    h. Neutrophils and Macrophages.
    i. Eosinophils.
    j. Basophils.
    k. Hemostasis and Blood Coagulation.
    l. Blood Coagulation Tests.

Learning Outcomes
On completion of this course, the student will be able to:

1. Understand the general concepts of homeostasis and the principles of positive and negative feedback in physiological systems.
2. Describe the composition of a cell membrane
3. Differentiate between the terms osmole, osmolarity, osmolality and tonicity.
4. Understand Cell Volume Regulation, Cytosolic pH, and Organelles
5. Differentiate between the different types of diffusion

6. Understand the action potential of the excitable tissues and its stages (depolarization, repolarization and hyperpolarization).
7. Understand the blood hematopoiesis and the function of each cell type
8. Define the anemia and its types (microcytic, normocytic and macrocytic)
9. Understand the hemostasis ,the blood clotting and the extrinsic and intrinsic pathways
10. Understand the pathophysiology of blood disorders

Evaluation

- Mid-term written Exam 40%
- Final written Exam 60%

English Language & Medical Terminology *

Course Code : ENGL 1301 , MEDC 1100
Study Hours : Four Credit Hours (Total 64 hours)

This course introduces basic grammar and vocabulary necessary to communicate in everyday life situations. Students should also be able to discuss health problems covering different areas of medicine.

Students explore the origin and composition of commonly used medical terms using word-building techniques and medical word roots, prefixes and suffixes used in different medical settings. Knowledge of medical terminology is essential for students wishing to pursue a career in a medical setting in order to communicate with patients and other health care professionals. Emphasis is placed on defining, spelling, and the building of medical terms and abbreviations. Through review exercises, practice of medical terms, power point lectures, collaborative discussions, students identify and define terms relating to the body in health and disease, along with terms associated with surgical and diagnostic procedures.

General Topical Outline:

Topic	Objectives
Introduction/Basic Word Structure	Identify the four basic word parts that form most medical terms: word root, combining form, prefix, and suffix. Divide medical words into their component parts. Find the meaning of basic word roots (combining forms), prefixes and suffixes. Discuss the origins of word roots (Greek, Latin) and relate to foundation of English and other languages. Develop awareness of cultural connotation/perception related to medical terms and health/illness. Demonstrate throughout the course. Explain the general rules for building medical words regarding the use of a combining vowel between root words and a suffix. Construct medical terms by assembling word parts Define medical terms by breaking them down into word parts. Discuss the importance of correct spelling. Utilize resources to correctly pronounce medical words. Discuss the use of appropriate resources in researching medical words and relating them to health.
Terms Pertaining to the Body as a Whole	Define terms that apply to the structural organization of the body. Identify the building blocks of the body: cells, tissue, organs, systems. Define terms that are used to describe direction, planes, and cavities of the body. Utilize terms that locate anatomical division of the back and abdomen. Define common abbreviations related to anatomical divisions of the abdomen, back, direction, planes and cavities of the body.
Suffixes	Define common suffixes used in medical terminology. Utilize proper use of a combining form and word root when linking to a suffix. Discuss the general rules related to terms being singular or plural. Analyze additional words used in medical terminology.

Prefixes	Define basic prefixes used in medical terminology. Define prefixes of position, number, measurement, negation and direction Explain how a prefix changes the meaning of a medical word.
Digestive System	Explain the main function of the digestive system. Identify the organs of the digestive system. Describe the basic function of the organs in the digestive system. Define the combining forms for organs of the digestive system. Analyze common medical terms used for symptoms, diseases, disorders, procedures, treatments, and BIT103. Medical Terminology Page 3 of 6 devices for the digestive system. Define common abbreviations related to the digestive system. Utilize correct spelling an pronunciation of the medical terms. Apply new medical terms in their proper context.
Urinary System	Identify the organs of the urinary system. State the vital function of the urinary system. Define the word parts used to create terms for the urinary system. Analyze common medical terms used for symptoms, diseases, disorders, procedures, treatments, and devices associated with the urinary systems. Define common abbreviations related to the urinary system. Utilize correct spelling and pronunciation of the medical terms. Apply new medical terms in their proper context
Female Reproductive System	Identify the major organs of the female reproductive system. Describe the basic functions of the organs of the female reproductive system. Define the word parts used to create terms for the female reproductive system. Identify terminology related to puberty, pregnancy, menopause, and breast disorders. Utilize correct spelling and pronunciation of the medial terms. Define common abbreviations related to the female reproductive system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the female reproductive system. Apply new medical terms in their proper context.
Male Reproductive System	Identify the major organs of the male reproductive system. Describe the basic functions of the organs of the male reproductive system. Define the word parts used to create terms for the male reproductive system. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the male reproductive system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the male reproductive system. Apply new medical terms in their proper context.
Nervous System	Identify the major components of the nervous system. Categorize the Central and Peripheral Nervous System Components. Describe the basic function of neurons. Describe the basic function of the spinal cord Describe the basic function of the major parts of the brain. Define the word parts used to create terms for the nervous system Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the nervous system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the nervous system.

	Apply new medical terms in their proper context.
Cardiovascular System	Identify the major organs of the cardiovascular system. Describe the basic functions of the organs of the cardiovascular systems. Trace the flow of blood through the cardiovascular system. Discuss heart function in relationship to systolic vs. diastolic and arterial vs. venous. Define the word parts used to create terms for the cardiovascular system. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the cardiovascular system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the cardiovascular system. Apply new medical terms in their proper context
Respiratory System	Identify the major organs of the respiratory system. Describe the basic functions of the organs of the respiratory system. Define the word parts used to create terms for the respiratory system. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the respiratory system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the respiratory system. Apply new medical terms in their proper context.
Blood System	Identify the major components of the blood system. Differentiate among the different types of blood groups. Identify terms related to blood clotting Define the word parts used to create terms for the blood system. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the blood system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the blood system. Apply new medical terms in their proper context.
Lymphatic and Immune Systems	Identify the major components of lymphatic and immune system. Describe terms that describe basic elements of the immune system. Define the word parts used to create terms for lymphatic & immune system. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the lymphatic & immune system. Recognize term that describe common pathological conditions affecting the lymphatic and immune systems. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the lymphatic & immune system. Apply new medical terms in their proper context.
Musculoskeletal System	Identify the major components of the musculoskeletal system (bones, joint, muscles). Describe the basic functions of the components of the musculoskeletal system Identify the major bones of the body. Define the word parts used to create terms for musculoskeletal system. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the musculoskeletal system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the musculoskeletal system. Apply new medical terms in their proper

	context.
Skin (Integumentary System)	Identify the major layers of the skin Identify the appendages of the skin. Describe the functions of the skin and appendages. Define the word parts used to create terms for the field of dermatology. Identify terminology related to common primary and secondary skin lesions. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to dermatology. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the integumentary system. Apply new medical terms in their proper context.
Sense Organs: Selected organs The Eye and the Ear	Identify the major structures of the eye and the ear. Describe the function of the major structures of the eye and ear. Define the word parts used to create terms for the eye and the ear Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the eye and the ear Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with eye and ear. Apply new medical terms in their proper context.
Endocrine System	Identify the common endocrine glands. Differentiate between endocrine and exocrine. Recognize principle hormones secreted by endocrine glands. Describe briefly common pathologies caused by endocrine abnormalities. Define the word parts used to create common terms for the endocrine system. Utilize correct spelling and pronunciation of the medical terms. Define common abbreviations related to the endocrine system. Analyze common medical terms used for symptoms, diseases, disorders procedures, treatments, and devices associated with the endocrine system. Apply new medical terms in their proper context.
Cancer Medicine (Oncology)	Define medical terms that describe the growth and spread of tumors. Recognize the three main classifications of tumors. Describe the principles regarding the staging and grading of tumors. Recognize common terms related to causes, diagnosis and treatment of cancer. Recognize the four major treatment modalities for cancer : surgery, radiation, chemotherapy and biological therapy. Apply new medical terms in their proper context.
Radiology and Nuclear Medicine	Describe an x-ray Define nuclear medicine. Recognize common tests used in radiology (ex. x-ray, CAT scan, contrast study, MRI, ultrasound Identify the x-ray views and patient positions used in x-ray examinations. Recognize common tests used in nuclear medicine. Recall radiological and nuclear tests discussed with the different bodies systems. Apply new medical terms in their proper context.
Pharmacology	Recognize that drugs have various names (chemical, generic, brand). Define the different routes for the administration of drugs. Recognize the major classifications of drugs. Apply new medical terms in their proper context.

Psychiatry	Differentiate among a psychiatrist, psychologist, and other mental health specialists. Define common terms that describe psychiatric symptoms. Recognize terms that describe major/common psychiatric disorders (ex. Anxiety disorder, delirium, mood, substance-related disorder etc). Apply new medical terms in their proper context.

Course Learning Outcomes

By the end of this course, students will have demonstrated the ability to:

- Use word-building techniques to spell and define medical terms and abbreviations.
- Identify word roots, prefixes, and suffixes in medical terminology.
- Define a variety of medical terms into simple English definitions.
- Explain the meaning of commonly used medical abbreviations.
- Spell a variety of medical terms using word-building techniques.
- Communicate medical terms into simple English when interpreting medical reports.
- Identify anatomical structures of the body and the related medical terms.

Assessment :

- Quizzes
- Mid-term written Exam
- Seminar
- Final written Exam
- Oral Exam

History of Medicine *

Course Code : MEDC 2100
Study Hours : One Credit hour (16 hours)

This course introduces students to the importance of the medical profession. Also the changes in medical education in relation to cultural and economic variations throughout history and different civilizations. Special emphasis is made on the role and participation of the Islamic civilization in the development of medicine and on the development of medicine in Palestine during the last century.

General Topical Outline

- Cultures of Medicine:

1. Medical views of man (Changing conceptions of what is man as being used by medical sciences: Hippocratic, Platonic and Aristotelian models, modern mechanical, biological, psychological and philosophical models.
2. Disease as social and historical phenomenon (Various historical Conceptions of diseases as appearing in different cultural contexts. This subject is vast so it is best to limit your choice to several conceptions/examples of what constitutes health and disease.
3. Conceptions of healthy life in different historical and cultural contexts (Western, Eastern and others,).
4. Alternative medical practices: past and present (Acupuncture, homeopathy and other alternative practices,).

- Making the Modern Body:

1. Development of surgery (You may give an overview of this vast subject since the ancient times, but you should also focus on some late modern developments).
2. History of pain (Dental and general anesthesia, best is you give an overview since the ancient times. You may also think of the experience of pain as being not merely organic but also culturally mediated).
3. History of transplantations and legal definition of death (Autografts, allografts and xenografts in historical and legal perspective).
4. The disabled body (history of disabilities, orthopedics, orthopedic technology and rehabilitation; various historical conceptions of disabilities – religious, medical and social – as well as changing attitudes towards them).

- Progress of Medicine:

1. History of infectious diseases and attitudes towards them (plague, smallpox, syphilis, influenza, cholera, tuberculosis, AIDS and others).
2. Progress of medical technologies (Diagnostic technologies, such as stethoscope, microscope, X-rays, CT, MRI, plus life-sustaining and surgical technologies, such as pacemakers and laparoscopy).

3. Medicalization of human conditions (Anorexia, obesity, ADHD, PMS, andropause, menopause and others – please provide a historical overview of this process).
4. Politics of health (This subject is vast so a choice has to be made to speak of one of the following: changing health policies and public health strategies in different countries, systems of financing health, growth of the population and new challenges for medicine, changes in global health policies, eugenic policies and practices in the 20th century and many more).

Course Objectives:

Students will gain a familiarity with the history of medicine and the connections between medicine and society. They will examine the lives of important practitioners, researchers, and philosophers of medicine; understand modern mechanical, biological, psychological and philosophical models.

Learning Outcomes

Students who successfully complete the course will be able to:

1. Describe the main stages in the changing nature and social organisation of health care and healing practices, from the Ancient Greeks to the present day;

2. Discuss the dominant ideas about health and illness, their causes and treatment, that have prevailed in different historical periods;

3. Discuss how ideas about health and illness and the organisation of health care relate to the wider social and cultural context in which they are articulated;

4. Describe the progress of medicine including the history of infectious diseases, medical technologies and politics of health

Assessment:

- Mid-term written Exam
- Seminar
- Final written Exam

Physics for Medical sciences * and Practical Physics **

Course code: PHYS 1315, PHYS 1115
Course hours: Four Credit Hours (Total 80 hours)

Course description:
Topics covered will include: biomechanics, sound and hearing, pressure and motion of fluids, heat and temperature, electricity and magnetism in the body, optics and the eye, biological effects of light, use of ionizing radiation in diagnosis and therapy, radiation safety, medical instrumentation. Two lectures with demonstrations per week, several visits to the hospital to see the medical equipment will be scheduled during the semester.

Course Objectives
• Develop basic understanding of medical physics concepts,
• Develop problem-solving and critical-thinking skills,
• Learn to integrate and apply various physics concepts to a single problem,
• Develop scientific communication skills.

Learning Objectives
By the end of the course, students will be expected to be able to Learn to communicate the physical principles behind medical technology

Topics covered: -
1. Forces acting on the body.
2. Physics of the skeleton
3. Energy, work and power of the body
4. Pressure
5. Sound in medicine
6. Physics of the lung and breathing
7. Physics of the cardiovascular system
8. Physics of diagnostic x-rays
9. Radiation protection in medicine
10. Physics of nuclear medicine
11. Electricity within the body
12. Physics of eyes and vision
13. Physics of the ear and hearing

Assessment:
- Quizzes
- Mid-term written Exam
- Seminar
- Final written Exam

Practical Anatomy I **

Course code : MEDC 1221
Study hours: Two Credit hours (32 hours)

Course description
The Human Anatomy Laboratory is a comprehensive survey of human anatomy. An outstanding feature of this course is to illustrate the theoretical science of thorax and upper limbs anatomy and make it easy to master by using plastic models

Anatomical models are a great educational tool to study and explain the internal and external structure of the human body as well as the various functions of the body's system.
The student studies the anatomy of thorax and upper limbs using the facilities of the Anatomy lab which are:

a. Human Skeletons.
b. Virtual Anatomy Lab.
c. Plastic Models.
d. Illustrations and models of various sections of the human body

The course will deal with the following topics:

Topics	***week***
Introduction	
Bones of the shoulder girdle (scapula+ clavicle+ upper humerous)	1
Sternum+ costal cartilage+ ribs +Intercostal spaces + suprapleural Membrane	2
Axilla and Brachial plexus	3
Diaphragm and the breast	4
The shoulder(rotator cuff muscles)	5
Mediastinum + pleura+trachea+lungs	6
The arm(humerous+ muscles+arteries+nerves) and cubital fossa	7
Mid-Term Exam	
Heart	9
The forearm 1	10
Thorax (veins+arteries+lymphatics+nerves)+esophagus+thymus	11
The forearm 2	12
The wrist and hand	13
Final Exam	

Objectives

1. The lab is intended to complement the lecture.
2. Teach students the topography of the human body and to assist them in developing a three-dimensional visualization of anatomic features.
3. Learn anatomy through hands on study of plastic models
4. State-of-the-art computer-based learning with online self-assessment and hologram and imaging techniques are used in the study of anatomy to improve spatial ability and to help the students think three-dimensionally.

learning outcomes

On completion of this course, the student will be able to:

1- understanding of the structure of the chest wall and the diaphragm
2- understand the general arrangement of the thoracic viscera and their relationship to one another and to the chest wall.
3- be able to define what is meant by the term mediastinum and to learn the arrangement of the pleura relative to the lungs.
4- learn the structure of the heart, including its conducting system and the arrangement of the different chambers and valves.
5- understand that the largest blood vessels in the body are located within the thoracic cavity, namely, the aorta, the pulmonary arteries, the venae cavae, and the pulmonary veins.
6- The primary concern is to present to the student the basic anatomy of the upper limb so that as a practicing medical professional he or she will be able to make an accurate diagnosis and initiate prompt treatment.
7- Nerves, bones, joints, tendons, and blood and lymphatic vessels of upper limbs and their anatomic relationships also are included.

Evaluation and grading:

30 points	Mid term
10 points	Attendance
10 points	Activity in Lab.
50 points **100 points**	Final Exam (stations) **Final Grade**

Practical Medical Physiology I **

Course Code: MEDC 1131
Credit hours: **One Credit hours (32 hours)**

Course description:
The practical medical physiology courses, in general, allow student apply their theoretical knowledge in the lab.

Contents:

- Lab Introduction
- Venous blood pressure measurement
- Heart sounds
- Arterial blood pressure measurement
- ECG 1
- ECG 2
- ECG 3
- Respiratory 1
- Respiratory 2

Objectives:

The primary objective of the Practical Medical Physiology Course is to ensure that students can apply their knowledge and master specific clinical skills mentioned earlier.

Learning Outcomes

After completing this course students should be able to:

- Know the principle and how to measure arterial blood pressure
- Know the principle and how to measure venous blood pressure
- Know the principle and how to examine heart sounds
- Know the principle and how to perform and interpret ECG
- Know the principle and how to perform and interpret Spirometry.

EVALUATION:

Quizzes	40 point
Attendance and activity	10 points
Home work	10 points
Final Exam	40 point
Final Grade	**100 points**

Practical Medical Biochemistry I **

Course Code: MEDC 1141
Study Hours: One Credit hour (32 hours)

COURSE DESCRIPTION:
The Introductory Biochemistry course covers fundamental biochemical laboratory techniques, supporting concepts, and data analysis. The aims of this course are to provide students with practical knowledge and hands-on experience with some of the most common experimental methods used in biochemical research, to introduce students to the fundamentals of scientific writing. Methods include reagent preparation, proper use of instrumentation, biochemical analysis and utilizing computers to analyze and present data. Laboratory safety is also emphasized.
Contents:

Week	*Topic*
1.	Introduction
2.	Color reaction of proteins
3.	Precipitation of protein at the isoelectric point& Isolation of casein from milk
4.	The colorimetric determination of serum albumin and total protein &Biuret method for total protein
5 &6.	Enzyme of clinical significant
7.	Reaction of reducing sugars
8.	Midterm exam
9.	Determination of glucose by glucose oxidase
10.	Chromatography
11.	Electrophoresis
12.	Final exam

Objectives:

1. Teach practical biochemistry to our students in the best available methods of teaching, provide them with the up-to-date knowledge and use the best methods for evaluation.
2. Integrate the medical applications of biochemistry to the theoretical sciences we teach.
3. Allow students to be active parts in ongoing research in our department
4. Make connections with international institutions to get the best available support we can get academically and financially for our programs.
5. Increase awareness of laboratory safety concern and how to apply safe practices in the laboratory.

Learning Outcomes

1. Students will gain basic investigative skills through hands-on experiences in a laboratory setting.
2. The ability to apply effective time management and organizational skills
3. Ability to learn, retain and demonstrate knowledge of course materials
4. Ability to apply course materials at knowledge, comprehension, application and analysis levels
5. Ability to demonstrate critical thinking and problem solving skills
6. Ability to work effectively in a group
7. Ability to work independently and engage in self-directed learning
8. Ability to follow directions
9. Ability to work safely in a lab environment

EVALUATION:

Your grade in Practical Medical Biochemistry I will be determined by your performance on examinations, quizzes and lab report. The following ways will be used in determining your grade:

Attendance & activity in Lab.	20 points
Midterm exam	30 points
Final exam	50 points
Final Grade	**100 points**

Biostatistics and Research Methodology *

Course code : MEDC 1201
Study Hours : Two Credit hours (32 hours)

Course description:

This course provides an overview of the research process with specific attention to meet medical research needs particularly in Palestine. The course helps the student to be familiar with the basic research methods and techniques particularly those related to operations research and Primary care and emergency medicine system research. Additionally, the course presents an overview of research relevant to health professional in general with special emphasis on application of research methodology in designing and carrying out a research project. Focus is directed towards research that deals Palestinian health problems and challenges. Students also will be introduced to the elements of evaluating research. The use of research findings in decision making and setting policies is also highlighted. Uniquely, this course deals with issues related to quantitative and qualitative research as well. The course is given in a creative adult learning that utilizes different learning strategies and practical applications.
The course also includes general statistical concepts; study designs and sampling schemes; both graphical and numerical descriptive statistics; statistical methods (both estimation and hypothesis testing; parametric and non-parametric) for one-group, two-group and multi-group designs; and sample size and power considerations for designed experimental studies

Assignments include the critical review of research articles as well as analysis of real datasets, using SPSS, followed by written, tabular and graphical presentation of the results with interpretation.

Learning Objectives:

At the completion of the course, the student will be able to:

1. Discuss the role of research and it's implication on clinical practice.
2. Demonstrate awareness of the research process and the steps utilized in implementing a research activity.
3. Develop research plans and demonstrate the ability to implement those plans in the field of health research.
4. Carry out the entire research activity starting from writing research proposal till producing a research report
5. Analyze, interpret and use of research findings in clinical setting.
6. Demonstrate an understanding of the concepts of validity, reliability and scientific rigor.
7. Differentiate between qualitative and quantitative research in terms of philosophies, uses, designs, and practical applications.
8. Develop the skills of criticizing a research article and evaluating its credibility and usefulness.

Content

1. Introduction, background, values and uses of research
2. Research gaps, problems and challenges in the Palestinian context
3. Research problems, hypothesis and research questions
4. Research philosophies and types (qualitative and quantitative)
5. Reviewing the literature, citation,
6. Developing a conceptual context
7. Criticizing a research article
8. Developing a research proposal
9. Research ethics
10. Research designs
11. Sampling designs
12. Data collection
13. Data analysis
14. Communicating research findings
15. Evidence based practice and use of data for decision making

Methods of teaching:

- LECTURE
- INDIVIDUAL ASSIGNMENTS
- PRESENTATION
- DEMONSTRATION
- GROUP DISCUSSIONS

EVALUATION: DESCRIPTION AND PERCENTAGES

1. Attendance and discussions	15%
2. Writing a research proposal	25%
2. Midterm Exam	20%
4. Final Exam	40%
Total	100%

Medical Biochemistry I *

Course code: MEDC 1341
Study Hours: **Three Credit hours** (48 hours)

Course description:
This course provides students with basic aspects of medical biochemistry. Integrated function of the human body is considered ranging widely from cellular to higher organ- system levels. This course will cover the molecular composition of living cells, the chemical reactions that biological components undergo, the regulation of these reactions and the nutrients that are needed by the living cells. The course material covers bioenergetics and into mediary metabolism of carbohydrates, lipids and proteins and their enzymatic regulation. It is a fundamental biological and medical science course that provides an understanding to cell biology, microbiology, nutrition, pharmacology, pathology and physiology at the molecular level.

Contents:
Protein structure and function

- Amino Acids
- Structure of Proteins
- Globular Proteins
- Fibrous Proteins
- Enzymes

Intermediary metabolism

- Bioenergetics and Oxidative Phosphorylation
- Introduction to Carbohydrates
- Glycolysis
- Tricarboxylic Acid Cycle
- Gluconeogenesis
- Glycogen Metabolism
- Metabolism of Monosaccharides and Disaccharides
- Pentose Phosphate Pathway and NADPH
- Glycosaminoglycans and Glycoproteins

Course Objectives:

1. Define "biochemistry" science and its relation to medicine.
2. Identify the five classes of polymeric biomolecules and their monomeric building blocks.
3. Identify the structure and function of proteins
4. Explain the specificity of enzymes (biochemical catalysts), and the chemistry involved in enzyme action.
5. Explain how the metabolism of glucose leads ultimately to the generation of large quantities of ATP.

6. Describe how fats and amino acids are metabolized, and explain how they can be used for fuel.
7. Explain the principle of Glycolysis, Tricarboxylic Acid Cycle, Gluconeogenesis, Glycogen Metabolism and Metabolism of Monosaccharides and Disaccharides.
8. Teach the metabolism of Glycosaminoglycans and Glycoproteins.
9. Ensure through a strong core curriculum, that students acquire a basic knowledge in Biochemistry.
10. Encourage students to develop a life-long commitment to learning.
11. Help students acquire depth of knowledge and competence in Biochemistry.
12. Train students in methods of academic inquiry, scientific research and problem solving.
13. Promote high quality research in the fields of Biochemistry.

Learning Outcomes

1. On completion of this course, the student will be able to:
   Learn the structures, function, and metabolic interactions of amino acids, and proteins, an emphasis will be placed on metabolic processes that have an impact on human diseases.
2. Learn theoretical principles of catalysis, strategies that enzymes use to catalyze reactions, and physical techniques used to study enzyme mechanisms. Chemical mechanisms for representative enzymes, coenzymes, enzyme inhibitors, and drugs are explored in detail.
3. Learn a detailed examination of selected primary and secondary metabolic pathways and their relationship to human health and diseased states
4. Apply scientific principles in a creative, hands-on research experience outside the usual course format. Students will develop their own research projects in biochemistry under the supervision of a faculty member.
5. Apply effective time management and organizational skills
6. Be responsible to contribute towards the generation of new knowledge
7. Acquire Written and verbal communication skills, including oral presentation skills.

Evaluation:

1. Attendance and discussions	10%
2. Mid-term	30%
2. Quizzes	10%
4. Final Exam	50%

Human Anatomy I *

Course code : MEDC 1321
Study Hours : Three Credit hours (48 hours)

COURSE DESCRIPTION:
This is a comprehensive course of a study of the anatomical structure of the thorax and upper limbs regions of the human body. Form-function relationships will be emphasized.
This course consisting of lectures, demonstrations and dissection videos. Students will be introduced to the fundamental structural and functional principles of these regions.

Contents:
In this course, regions studied include **The thorax and upper limbs**

❖ Anatomy of the thorax

Part I: The Thoracic Wall:

1- Basic anatomy of the thorax.
2- Structure of the thoracic wall (Sternum , costal cartilage, ribs, intercostal spaces, suprapleural membrane)
3- Joints of the chest wall
4- Openings of the thorax

An understanding of the structure of the chest wall and the diaphragm is essential if one is to understand the normal movements of the chest wall in the process of aeration of the lungs.

Part II: The Thoracic Cavity: -

1- Mediastinum & pleura & trachea & lungs
2- Thorax (veins, arteries, lymphatics, nerves) & esophagus & thymus
3- Diaphragm
4- Heart

❖ Anatomy of the upper limbs

1- Bones of the shoulder girdle (scapula, clavicle, upper humerus)
2- Axilla and Brachial plexus
3- The shoulder (rotator cuff muscles)
4- The arm (humerus, muscles, arteries, nerves) and cubital fossa
5- The forearm 1
6- The forearm 2
7- The wrist and hand

Objectives:

1- The aim of the course is to teach students the topography of the human body and to assist them in developing a three-dimensional visualization of anatomic features.
2- Describe the structure, composition and functions of the organ systems of the human body.
3- Describe how the organ systems function and interrelate.
4- Learn basic technical terminology and language associated with anatomy.
5- Describe how humans adapt through their anatomical design.
6- Describe how human structure is unique and adaptive.

Learning Outcomes

On completion of this course, the student will be able to:

- To understand the general arrangement of the thoracic viscera and their relationship to one another and to the chest wall.
- To be able to define what is meant by the term mediastinum and to learn the arrangement of the pleura relative to the lungs. This information is fundamental to the comprehension of the function and disease of the lungs.
- Appreciating that the heart and the lungs are enveloped in serous membranes that provide a lubricating mechanism for these mobile viscera and being able to distinguish between such terms as thoracic cavity, pleural cavity (pleural space), pericardial cavity, and costodiaphragmatic recess.
- To learn the structure of the heart, including its conducting system and the arrangement of the different chambers and valves, which is basic to understanding the physiologic and pathologic features of the heart. The critical nature of the blood supply to the heart and the end arteries and myocardial infarction is emphasized.
- To understand that the largest blood vessels in the body are located within the thoracic cavity, namely, the aorta, the pulmonary arteries, the venae cavae, and the pulmonary veins.

Evaluation:

1. Quizzes (10 %)
2. Midterm (30 %)
3. Seminar (10 %)
4. Final Exam (50 %)

Medical Physiology I *

Course code: MEDC 1331
Study Hours : Three Credit hours (48 hours)

Course description
Medical physiology course, in general, provides students with basic aspects of medical physiology "cardiovascular, pulmonary, renal, gastrointestinal, reproduction, endocrine and metabolism. In addition to principles of general physiology the control of different organs and the coordination among them is reviewed. Special emphasis is made on water, electrolyte and acid base balance, body responses and adaptation to various stress condition and physiological disorders.
By the end of this course, the students will have mastered the respiratory and cardiovascular system from a physiological perspective.

Contents:

- In respiratory physiology, the students will study the mechanism and the regulation of ventilation as well as the respiratory volume. the respiratory circulation and the respiratory membrane and their effects on blood gases will be illustrated in details. An overview over some respiratory disease will be also added.

Respiratory physiology topics outline

1. **Pulmonary Ventilation**
   a. Mechanics of Pulmonary Ventilation.
   b. Pulmonary Volumes and Capacities.
   c. Alveolar Ventilation.
   d. Functions of the Respiratory Passageways.
2. **Pulmonary Circulation, Pulmonary Edema, Pleural Fluid**
   a. Physiologic Anatomy of the Pulmonary Circulatory System.
   b. Pressures in the Pulmonary System.
   c. Blood Volume of the Lungs.
   d. Blood Flow through the Lungs and Its Distribution.
   e. Effect of Hydrostatic Pressure Gradients in the Lungs on Regional Pulmonary Blood Flow.
   f. Pulmonary Capillary Dynamics.
   g. Fluid in the Pleural Cavity.
3. **Physical Principles of Gas Exchange, Diffusion of Oxygen and Carbon Dioxide through the Respiratory Membrane**
   a. Physics of Gas Diffusion and Gas Partial Pressures.
   b. Composition of Alveolar Air—Its Relation to Atmospheric Air.
   c. Diffusion of Gases through the Respiratory Membrane.
   d. Effect of the Ventilation-Perfusion Ratio on Alveolar Gas Concentration.
4. **Transport of Oxygen and Carbon Dioxide in Blood and Tissue Fluids Transport of**
   a. Oxygen from the Lungs to the Body Tissues.
   b. Transport of Carbon Dioxide in the Blood.

c. Respiratory Exchange Ratio.

5. Regulation of Respiration

a. Respiratory Center.
b. Chemical Control of Respiration.
c. Peripheral Chemoreceptor System for Control of Respiratory Activity—Role of Oxygen in Respiratory Control.
d. Regulation of Respiration during Exercise .
e. Other Factors That Affect Respiration.

6. Respiratory Insufficiency— Pathophysiology, Diagnosis, Oxygen Therapy

a. Physiologic Peculiarities of Specific Pulmonary Abnormalities.
b. Hypoxia and Oxygen Therapy.
c. Hypercapnia .
d. Artificial Respiration.

- In cardiovascular physiology, the students will learn the function of heart and vessels, the cardiac cycle and the blood & nerve supply to the heart, they will study the hormonal and nervous regulation of vascular bed in the different parts of the body

Cardiovascular physiology topics outlines:

1. Physiology of Cardiac Muscle .
2. Relationship of the Heart Sounds to Heart Pumping.
3. Work Output of the Heart.
4. The Cardiac Cycle.
5. Chemical Energy Required for Cardiac Contraction: Oxygen Utilization by the Heart
6. Regulation of Heart Pumping.
7. Rhythmical Excitation of the Heart.
8. The Normal Electrocardiogram.
9. Electrocardiographic Interpretation of Cardiac Muscle and Coronary Blood flow Abnormalities.
10. Cardiac Arrhythmias and Their Electrocardiographic Interpretation.
11. The Circulation.
12. Physical Characteristics of the Circulation.
13. Vascular Distensibility and Functions of the Arterial and Venous Systems.
14. The Microcirculation and the Lymphatic System: Capillary Fluid Exchange, Interstitial Fluid, and Lymph Flow
15. Local and Humoral Control of Blood Flow by the Tissues
16. Nervous Regulation of the Circulation, and Rapid Control of Arterial Pressure.
17. Role of the Kidney in Long-Term Regulation of Arterial Pressure and in Hypertension: The Integrated System for Pressure Control.
18. Cardiac Output, Venous Return, and Their Regulation.
19. Muscle Blood Flow and Cardiac Output during Exercise; the Coronary Circulation and Ischemic Heart Disease.
20. Cardiac Failure.
21. Heart Valves and Heart Sounds.
22. Circulatory Shock and Physiology of Its Treatment

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand the Unique Characteristics of Cardiac Muscle and the Electrophysiology of the Heart
2. Understand the cardiac cycle, cardiac function and the physiology of the cardiac defects(heart sounds)
3. Differentiate between the normal Electrocardiogram (ECG) and the ECG in Cardiac Arrhythmias and Myopathies
4. Understand the relationship between pressure, flow, and resistance in the vasculature
5. Understand the organization of the circulatory system and explain how the systemic and pulmonary circulations are linked physically and physiologically
6. Understand the blood pressure and its measurement ,and how the normal body regulates the blood pressure
7. Define many of the cardiac diseases that result from disruption of cardiovascular homeostasis as heart failure, circulatory shock, cardiomyopathies and hypertension
8. Diagram how pleural pressure, alveolar pressure, airflow, and lung volume change during a normal quiet breathing cycle
9. Know the Pulmonary Mechanics, Draw a normal spirogram, labeling the four lung volumes and four capacities. List the volumes that comprise each of the four capacities.
10. Identify which volume and capacities cannot be measured by spirometry.
11. Label the forced vital capacity (FVC), timed forced expiratory volumes (FEVs), and the maximal expiratory flow rate between 25-75% of FVC (FEF25-75%).
12. Understand the pulmonary circulation and pulmonary gas exchange
13. Identify the regions in the central nervous system that play important roles in the generation and control of cyclic breathing
14. Understand the pathophysiology of the common respiratory diseases.

Evaluation:

- **Respiratory physiology 50%**
- 15% midterm exam
- 35% final exam
- **Cardiovascular physiology 50%**
- 15% midterm exam
- 30% final exam
- 5% quizzes

Practical Human Anatomy II **

Course code: MEDC 2221
Study Hours: **Two Credit hours (32 hours**)

Course description:
The course takes the advantage of the well-equipped anatomy lab to illustrate the theoretical science of lower limb, abdomen, pelvis, Perineum and back anatomy and make it easy to master.
Anatomical models are a great educational tool to study and explain the internal and external structure of the human body as well as the various functions of the body's system.
State-of-the-art computer-based learning with online self-assessment and hologram and imaging techniques are used in the study of anatomy to improve spatial ability and to help the students think three-dimensionally.
The student studies the anatomy of abdomen and lower limbs using the facilities the Anatomy lab which are:

1. human skeletons.
2. virtual anatomy lab.
3. plastic models.
4. Illustrations and models of various sections of the human body.
5. Cadaver Dissection lectures and videos.

Contents:

topic	***week***
Orientation	1
Bones of Lower Limps	2
Anterior Fascial Compartment of the Thigh	3
Medial & posterior Fascial Compartments of the Thigh	4
The Leg	5
Arterial, venous and nerve supply for L.L.	6
Back anatomy	7
MIDTERM 8TH Week	
Abdominal wall and cavity (muscles and vessels)	9
Liver, Pancreas, Biliary system, Spleen	10
GIT	11
Urinary system	12
Pelvis	13
Perineum anatomy	14
Final Exam (40%)	

Objectives:

1. Describe the structure, composition and functions of the organ systems of the human body including lower limb, abdomen, pelvis, perineum and back.
2. Teach basic technical terminology and language associated with anatomy.
3. Describe how humans adapt through their anatomical design.
4. Describe how human structure is unique and adaptive.
5. Use the process of dissection to investigate anatomical structure.
6. Use the 3D computer programs and plastic anatomy models to increase the understanding of anatomical structure.
7. Increase awareness of laboratory safety concern and how to apply safe practices in the laboratory.
8. Obtain desired information about human structures, functions or pathology using common references.

Learning Outcomes:

On completion of this course, the student will be able to:

- Ability to learn, retain and demonstrate knowledge of course materials
- Ability to apply course materials at knowledge, comprehension, application and analysis levels
- Ability to demonstrate critical thinking and problem solving skills
- Ability to work effectively in a group
- Ability to work independently and engage in self-directed learning
- Ability to follow directions
- Ability to work safely in a lab environment

EVALUATION:

30 points	Midterm (Static)
10 points	Attendance
	Activity in Lab. • Group Discussion • Assignments
20 points	• Quizzes
40 points	Final Exam (stations)
100 points	**Final Grade**

Practical Medical Physiology II **

Course code: MEDC 2131
Study Hours : One Credit hours (32 hours)

The course takes the advantage of the well-equipped LAB to illustrate the theoretical science and make it easy to master. This course aims to apply theoretical knowledge of physiological lectures. Student performs lab. Experiments and be evaluated.
Topics include:

a. Sampling of blood – venipuncture , finger puncture
b. Measurment of erythrocyte sedimentation rate (esr)
c. Determination of the packed cell volume (pcv)
d. White blood cell count
e. Red blood cell count
f. Measurement of the haemoglobin concentration
g. Haematological indicess
h. Measurefment of the bleeding time and clotting time
i. Prothrombin time, activated partial thromboplastin time and
j. Fibrinogen time.
k. Identification of leucocytes and differential count.
l. Blood grouping
m. Seminal fluid analysis.
n. Cerebrospinal fluids analysis (CSF)
o. Lumbar puncture
p. Endocrinal hormonal tests

Objectives:
The students are expected to benefit from the practical classes in the following ways:

1. Learn and acquire skills .
2. Acquire an aptitude for careful observation .
3. Familiarize with nomograms .
4. Gain skill in designing simple experiments .
5. Familiarize with simple statistical concepts .
6. Gain skills in recording an experiments, tabulating and condensing data .
7. Learn to draw valid conclusions from available data .
8. Practice writing a report
9. Practice looking up, indexing, and abstracting journals and tracing the literature references on a particular subject .
10. Gain knowledge of concepts of validity, reliability, precision and errors in measurements .
11. Supplement to oral classes .
12. Apply Physiological learning to health and community problems

Evaluation:

- Quizzes 10%
- Mid-term written Exam 30%
- Final written and practical exam 50%
- Homework and attendance 10%

Practical Medical Biochemistry II **

Course Code: MEDC 2141
Study Hours: One Credit hour (32 hours)

Course description:
The Introductory Biochemistry course covers fundamental biochemical laboratory techniques, supporting concepts, and data analysis. The aims of this course are to provide students with practical knowledge and hands-on experience with some of the most common experimental methods used in biochemical research, to introduce students to the fundamentals of scientific writing. Methods include reagent preparation, proper use of instrumentation, biochemical analysis and utilizing computers to analyze and present data. Laboratory safety is also emphasized.

Contents:

Week	***Topic***
1.	Introduction, Triglyceride and cholesterol
2.	Lipid profile
3.	
4.	kidney functions
5.	
6.	
7.	Urine analysis
8.	
9.	
10.	Serology
11.	Practical Exam

Objectives:

1. Teach practical biochemistry to our students in the best available methods of teaching, provide them with the up-to-date knowledge and use the best methods for evaluation.
2. Integrate the medical applications of biochemistry to the theoretical sciences we teach.
3. Allow students to be active parts in ongoing research in our department
4. Make connections with international institutions to get the best available support we can get academically and financially for our programs.
5. Increase awareness of laboratory safety concern and how to apply safe practices in the laboratory.

Learning Outcomes

1. Students will gain basic investigative skills through hands-on experiences in a laboratory setting.
2. the ability to apply effective time management and organizational skills
3. Ability to learn, retain and demonstrate knowledge of course materials
4. Ability to apply course materials at knowledge, comprehension, application and analysis levels
5. Ability to demonstrate critical thinking and problem solving skills
6. Ability to work effectively in a group
7. Ability to work independently and engage in self-directed learning
8. Ability to follow directions
9. Ability to work safely in a lab environment

EVALUATION:

The grade in Practical Medical Biochemistry II will be determined by your performance on examinations, quizzes and lab report. The following ways will be used in determining your grade:

Quizzes	10 point
Lab report & Homework	10 point
Attendance & activity in Lab.	10 point
Practical exam	20 points
Final Exam	50 point
Final Grade	100 point

Laboratory Report

You will **write a laboratory report** for each experiment. It should be well integrated, and follow this format:

1. **Introduction**.
2. purpose and principle.
3. **Materials and Methods**.
4. Results.
5. Comment.

Practical Molecular Biology **

Course code: MEDC 2151
Credit hours: one Credit hour (32 hours)

Course description:
This course is organized as full two hours teaching per week including theoretical part and practical laboratory work. The practical part of the course will include basic methods in Molecular Biology which used in molecular diagnosis, including polymerase chain reaction (PCR), DNA purification, DNA sequencing etc.to investigate the mutant genes and correlate with the genetic diseases. As well as understanding the techniques used in investigation many types of cancer such as tissue culture and related tests and application of all these techniques in the lab.
Contents:

Week	Topic
12.	Introduction
13.	Mitotic Cell Division
14.	Human Metaphase Chromosomes
15.	Human Chromosomes Identification by G-Banding (Karyotyping)
16.	Extraction of Human DNA
17.	The polymerase chain reaction (PCR)
18.	Midterm exam
19.	Agarose Gel Electrophoresis
20.	Sodium Dodecyl Sulphate- Polyacrylamide Gel Electrophoresis (SDS-PAGE)
21.	Restriction Enzyme Digestion & Southern Blotting of DNA
22.	Plasmid DNA Isolation
23.	Final exam

Objectives:

1. Understanding of the key concepts of the molecular biology of the cell, integrating principles of cell structure and function with the underlying molecular mechanism(s)
2. Teaching the students the best available methods in molecular biology, and provide them with the up-to-date knowledge.
3. Teaching the students the most common genetic disorders in our community and their percentage.
4. Integrate the medical applications of molecular biology to the theoretical sciences we teach.
5. Allow students to be active parts in ongoing research in our department
6. Make connections with international institutions to get the best available support we can get academically and financially for our programs.
7. Increase awareness of laboratory safety concern and how to apply safe practices in the laboratory.

Learning Outcomes:

After completion of the course the candidate should:

1. Accurately, safely and appropriately use all the equipment regularly used in DNA manipulation, including balances, pipettes, electrophoresis and centrifuges.
2. Prepare chemical solution and reagents to the precision appropriate to the task demonstrate knowledge of the biochemical basis underpinning the molecular biology techniques taught in the workshop.
3. Independently clone any gene into a plasmid vector (from RNA extraction, reverse transcription, polymerase chain reaction, ligation, bacterial transformation, to DNA extraction, DNA mapping and primer design).
4. Transfect plasmids and silencing RNAs to over-express or knock down protein expression in a primary cell line, extract protein, assess and quantify expression using Western blotting.
5. Carry out molecular biology experiments and interpret the results, designing a strategy to circumvent potential failed experiments.

Evaluation:

Quizzes	40 point
Attendance and activity	10 points
Home work	10 points
Final Exam	40 point
Final Grade	**100 points**

Molecular Biology *

Course Title: MEDC **2251**
Credit hours: Two Credit hours (32 hours)

Course description:
The course will cover basic properties of cells, techniques used in cell and molecular biology, the structure and function of the nucleus, Genes and chromosomes, DNA replication, transcription, translation and cell signaling. This will be linked to diseases and its diagnosis and treatment.

Contents:
Week topics:

1. The Molecular Nature of Genes
2. Gene Function
3. From gene to protein
4. DNA replication and telomere maintenance
5. Cell cycle control , apoptosis, autophagy
6. DNA repair and recombination
7. Cancer
8. Molecular diagnostics
9. Molecular Therapeutics

Objectives:
The principal aim of the course is to equip students with a basic knowledge of the molecular biology of the cells.

Learning Outcomes

After completing this course students should be able to:

- Understand the structure of DNA and RNA and the importance of 5' and 3' ends.
- Get familiar with the mechanisms of replication, transcription and translation.
- Learn basic methods in molecular biology, the principles and applications.
- Relate basic molecular biology information to its clinical implication (Disease and treatment).

EVALUATION:

Quizzes	40 point
Attendance and activity	10 points
Home work	10 points
Final Exam	40 point
Final Grade	**100 points**

Medical Biochemistry II *

Course code: MEDC 2441
Study Hours: Four Credit hours (64 hours)

Course description:
This course provides students with basic aspects of medical biochemistry. Integrated function of the human body is considered ranging widely from cellular to higher organ- system levels. This course will cover the molecular composition of living cells, the chemical reactions that biological components undergo, the regulation of these reactions and the nutrients that are needed by the living cells. The course material covers bioenergetics and into mediary metabolism of carbohydrates, lipids and proteins and their enzymatic regulation. It is a fundamental biological and medical science course that provides an understanding to cell biology, microbiology, nutrition, pharmacology, pathology and physiology at the molecular level.

CONTENTS:
Lipid metabolism: -

- Metabolism of Dietary Lipids
- Fatty Acid and Triacylglycerol Metabolism
- Complex Lipid Metabolism
- Cholesterol and Steroid Metabolism

Nitrogen metabolism: -

- Amino Acids: Disposal of Nitrogen
- Amino Acid Degradation and Synthesis
- Conversion of Amino Acids to Specialized Products
- Nucleotide Metabolism

Integration of metabolism: -

- Metabolic Effects of Insulin and Glucagon
- The Feed/Fast Cycle
- Diabetes Mellitus
- Obesity
- Nutrition
- Vitamins

Clinical chemistry: -

- Evidence-Based Laboratory Medicine and Test Utilization
- Molecular Diagnostics and Genetics
- Hemostasis and Thrombosis
- Enzymes and Protein Markers
- Lipids, Lipoproteins, and Cardiovascular Risk Factors

- Drug Monitoring and Toxicology
- Hematology
- Endocrinology and Metabolism
- Automation and Analytical Techniques
- Laboratory Management
- General Clinical Chemistry
- Clinical Immunology
- Nutrition
- Pediatric Clinical Chemistry

Objectives:

1. Teach principle of metabolism of lipid and nitrogen.
2. Explain the Metabolic Effects of Insulin and Glucagon.
3. Describe the Feed/Fast Cycle.
4. Teach related diseases include Diabetes Mellitus, Obesity.
5. Explain the role of Nutrition and Vitamins in metabolic function of bodes.
6. Explain role and importance of biochemistry in clinical practice of doctors is several related topics include Evidence-Based Laboratory Medicine and Test Utilization, Molecular Diagnostics and Genetics, Hemostasis and Thrombosis
7. Explain Enzymes and Protein Markers, Lipids, Lipoproteins, and Cardiovascular Risk Factors.
8. Summarize what is currently known about the biochemical basis of cancer.
9. To ensure through a strong core curriculum, that students acquire a basic knowledge in Biochemistry.
10. To encourage students to develop a life-long commitment to learning.
11. To help students acquire depth of knowledge and competence in Biochemistry.
12. To train students in methods of academic inquiry, scientific research and problem solving.
13. To promote high quality research in the fields of Biochemistry.

Learning Outcomes

On completion of this course, the student will be able to:

1. Learn the structures, function, and metabolic interactions of lipids, steroids, vitamins, nucleotides, nucleic acids, amino acids, and proteins. An emphasis will be placed on metabolic processes that have an impact on human diseases.
2. Learn theoretical principles of catalysis, strategies that enzymes use to catalyze reactions, and physical techniques used to study enzyme mechanisms. Chemical mechanisms for representative enzymes, coenzymes, enzyme inhibitors, and drugs are explored in detail.
3. Learn a detailed examination of selected primary and secondary metabolic pathways and their relationship to human health and diseased states
4. Apply scientific principles in a creative, hands-on research experience outside the usual course format. Students will develop their own research projects in biochemistry under the supervision of a faculty member.
5. Apply effective time management and organizational skills
6. Be responsible to contribute towards the generation of new knowledge
7. Acquire Written and verbal communication skills, including oral presentation skills.

EVALUATION:

1. Attendance and discussions	10%
2. Mid-term	30%
2. Quizzes	10%
4. Final Exam	50%

Human Anatomy II *

Course code: MEDC 2321
Study Hours: Three Credit hours (48 hours)
Course description:
This is a comprehensive course of the structure of the abdomen, pelvis, perineum, lower limbs and back regions of the human body consisting of lectures, demonstrations and dissection videos. Students will be introduced to the fundamental structural and functional principles of these regions.
In this course, Regions studied include, the abdomen, pelvis, perineum, lower limb and back. The aim of the course is to teach students the topography of the human body and to assist them in developing a three-dimensional visualization of anatomic features.

Contents:

- Anatomy of the abdomen:
  - Part I: the abdominal wall:
    - Surface topography of the abdomen
    - Abdominal wall anatomy
    - Groin anatomy
    - Peritoneum and the peritoneal cavity.
  - Part II: the abdominal cavity:
    - Esophagus anatomy
    - Stomach anatomy
    - Small intestine anatomy
    - Large intestine anatomy
    - Rectum and anal canal anatomy
    - Liver anatomy
    - Gallbladder anatomy
    - Pancreas anatomy
    - Spleen anatomy
    - Posterior abdominal region
    - Kidneys anatomy
    - Ureters, bladder anatomy
    - Suprarenal glands anatomy
- Anatomy of the pelvis:
  - Part I: The Pelvic Walls
  - Part II: The Pelvic Cavity
- Anatomy of the perineum
- Anatomy of the lower limbs
  - Gluteal region anatomy
  - Thigh detailed anatomy
  - Leg detailed anatomy
  - Foot detailed anatomy
- Anatomy of the back

Objectives:

- Teach the anatomy of the anterior abdominal wall in detail.
- Give the student an understanding of the significant anatomy relative to clinical problems in topics related to abdominal cavity organs, including the gastrointestinal tract, liver, biliary ducts, pancreas, spleen, parts of the urinary system and abdominal vessels, nerves and lymphatics.
- Review the significant anatomy of the pelvic walls relative to clinical problems. Particular attention is paid to age and sexual differences and to the anatomic features associated with pelvic examinations.
- Consider the important anatomy relative to common clinical conditions involving the pelvic organs.
- Review intestinal and urinary tracts and the internal organs of reproduction as well as their nerve supply, blood supply, and lymphatic drainage.
- Teaching problems related to pelvic cavity which include infections, injuries, and prolapses of the rectum, uterus, and vagina.
- Cover emergency situations involving the bladder, the pregnant uterus, ectopic pregnancy, spontaneous abortion, and acute pelvic inflammatory disease are examples of problems found in the female.
- Review the structure of the perineum and related organs.
- The anatomy of the lower limb is discussed in relation to common clinical conditions.
- A general description of the bones, joints, and actions of muscles is given.
- The basic anatomy of the vascular supply, lymphatic drainage, and distribution of the nerves is reviewed
- review the basic anatomy of the vertebral column and related soft nervous tissue structures so that the physician will feel reasonably confident to institute the appropriate treatment.

Learning Outcomes

1. Recognize and explain the interrelationships within and between anatomical and other medical basic sciences.
2. Bridge the gray zone between preclinical anatomy and clinical anatomy through application of the anatomical knowledge throughout the medical teaching.
3. Making the optimum use of time allocated for teaching anatomy by using Prosections Atlases, videos, X – rays pictures, CT scans, MRI, Models from clinical skills lab, and anatomy museum specimens.
4. The medical students will be trained well in clinical problem solving by using anatomical knowledge.
5. The ability to apply effective time management and organizational skills
6. An appreciation of the responsibility to contribute towards the generation of new knowledge

7. Reaching a high level of achievement in problem-solving, communication and understanding the anatomy of different parts of the body include abdomen, pelvis, lower limb, perineum and back.
8. Written and verbal communication skills, including oral presentation skills.

Evaluation:

1. Attendance and discussions	10%
2. Mid-term	30%
2. Quizzes	10%
4. Final Exam	50%

Medical Physiology II *

Course Code: MEDC 2431

Credit hours: **Four Credit hours** (64 hours)

Course description:

The medical physiology courses, in general, provides students with basic aspects of medical physiology "cardiovascular, pulmonary, renal, gastrointestinal, reproduction, endocrine and metabolism. In addition to principles of general physiology, the control of different organs and the coordination among them is reviewed. By the end of this course, the students will have mastered the endocrine and gastrointestinal system from a physiological perspective.

Contents:

Gastrointestinal Physiology

- General Principles of Gastrointestinal Function - Motility, Nervous Control, and Blood Circulation
- Propulsion and Mixing of Food in the Alimentary Tract
- Secretory Functions of the Alimentary Tract
- Digestion and Absorption in the Gastrointestinal Tract
- Physiology of Gastrointestinal Disorders

Endocrinology and Reproduction

- Introduction to Endocrinology
- Pituitary Hormones and Their Control by the Hypopthalamus
- Thyroid Metabolic Hormones
- Adenocortical Hormones
- Insulin, Glucagon, and Diabetes Mellitus
- Parathyroid Hormone, Calcitonin, Calcium and Phosphate Metabolism, Vitamin D, Bone, and Teeth
- Reproductive and Hormonal Functions of the Male (and Function of the Pineal Gland)
- Female Physiology Before Pregnancy and Female Hormones
- Pregnancy and Lactation
- Fetal and Neonatal Physiology

OBJECTIVES:

The primary objective of the Medical Physiology Course is to ensure that students understand how the body works and interacts, the regulatory mechanism and basic pathophysiology of common diseases.

LEARNING OUTCOMES

After completing this course students should be able to:

1. Define homeostasis and explain how homeostatic mechanisms normally maintain a constant interior milieu.

2. State the functions of each organ system of the body, explain the mechanisms by which each functions, and relate the functions and the anatomy and histology of each organ system.

3. Understand and demonstrate the interrelations of the organ systems to each other.

4. Predict and explain the integrated responses of the organ systems of the body to physiological and pathological stresses.

5. Explain the pathophysiology of common diseases related to the organ systems of the body.

EVALUATION:

Quizzes	40 point
Attendance and activity	10 points
Home work	10 points
Final Exam	40 point
Final Grade	**100 points**

Practical Medical Histology **

Course Code : MEDC 2110
Study Hours : One Credit hours (Two hours per week / 32 hours)

Course description:
This practical course provides an opportunity for students to understand and examine the microscopic appearance of normal structures in the human tissues using glass slides with the light microscope and virtual slides on the computers.

Each Laboratory session is a (2-3)-hour period during which you will examine and analyze the materials being studied in the lecture using microscopic slides of them.

In addition, to assist the student in understanding the fine structure of cells and tissues, a computer assisted, electron/ordinary micrographs based training to identify histology of tissues is also included the lab component.

Histology lab Course contents :
Each one of the following topics consists of a series of Microscopic slides demonstrating the normal structure of tissue

- Epithelial Tissue
- Connective Tissue
- Adipose tissue
- Cartilage
- Bone
- Nerve Tissue & the Nervous System
- Muscle Tissue
- Circulatory System histology
- Blood & Hemopoiesis
- The Immune System & Lymphoid Organs
- Digestive Tract
- Organs Associated with the Digestive Tract
- Respiratory System histology
- Skin histology
- Urinary System histology
- Endocrine System histology
- Male Reproductive System histology
- Female reproductive System histology
- The eye and ear histology

Course Objectives:

The principal objective of this course is to provide students with an understanding of the structural and functional organization of the human body at the cellular and subcellular levels.
In the lab component,

Learning Outcomes:

Students will be able to

- use a microscope to analyze and examine the microstructure of tissues
- identify organs, tissues and cells of the human body
- perform various fixation and staining procedures
- Integrate the knowledge gained as a foundation for the subsequent study of pathology and aspects of other diagnostic laboratory disciplines

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Evaluation:

- Attendance 10%
- Quizzes 10%
- Mid-term Exam 30%
- Final Exam 50 %

Practical Anatomy III **

Course Code : MEDC 2222
Study Hours : Two Credit hour (32 hours)

Course description
The Human Anatomy Laboratory is a comprehensive survey of human anatomy. An outstanding feature of this course is to illustrate the theoretical science of head and neck anatomy and make it easy to master by using a plastic models

The course also provides students the opportunity to study models of nervous system in anatomy lab and gain an appreciation for three-dimensional organization in the central nervous system

Anatomical models are a great educational tool to study and explain the internal and external structure of the human body as well as the various functions of the body's system .
The student studies the anatomy of head & neck using the facilities of the Anatomy lab which are:

1. human skeletons.
2. virtual anatomy lab.
3. plastic models.
4. Illustrations and models of various sections of the human body.

The course will deal with the following topics:

topic	***Week***
Neck	1
Thyroid / Larynx/ Trachea	2
Skull	3
Face & scalp	4
Nasal cavity, Oral cavity & Salivary glands	5
Ear	6
Eye	7
MID-EXAM	
Spinal cord	9
Brain stem	10
Cerebellum	11
Cerebral hemisphere	12
Blood supply of CNS	13
THE FINAL	

Objectives

1- The lab is intended to complement the lecture.
2- teach students the topography of the human body and to assist them in developing a three-dimensional visualization of anatomic features.
3- Learn anatomy through hands on study of plastic models
4- State-of-the-art computer-based learning with online self-assessment and hologram and imaging techniques are used in the study of anatomy to improve spatial ability and to help the students think three-dimensionally.

learning outcomes

On completion of this course, the student will be able to:

1- Identify all the muscles of the head and neck indicating points of attachment, function, innervation and vascularization for each muscles.
2- Identify all the arterial branches of the external and internal carotids and describe what structures are suggested by each of the arteries.
3- Name the twelve cranial nerves, individual exit site from the skull and particular functions.
4- Identify all the bones of the skull. In addition the student will be able to identify the landmarks foramen and articulations for each bone in the skull.
5- Know the anatomic structure of CNS

Evaluation and grading:

30 points	Mid term
10 points	Attendance
10 points	Activity in Lab.
50 points	Final Exam (stations)
100 points	**Final Grade**

Practical Medical Physiology III **

Course Code : MEDC 2132
Study Hours: **One Credit hour** (32 hours)

Course description:

This course help student master nervous system clinical examination methods.

Contents:

Neurophysiology

- Motor system examination
- Sensory system examination
- Cerebellar function tests
- Cranial verves examination

Objectives:

The primary objective of this practical course is to ensure that students can apply their knowledge and master specific clinical skills mentioned earlier.

Learning Outcomes:

After completing this course students should be able to:

- Master nervous system clinical examination methods.
- Learn clinical manifestation of common neurological diseases and injuries.

Evaluation:

Quizzes	40 point
Attendance and activity	10 points
Home work	10 points
Final Exam	40 point
Final Grade	**100 points**

Fiqh of Medicine and Medical Ethics *

Course Code : MEDC 2300
Study Hours : Three Credit hours (48 hours)

This course previews some ethical issues that may face every doctor in the practice, it aims to present a suitable solution to these situations in a way that saves the rights of both sides. It also displays some issues from an Islamic perspective.
This course will take an in-depth of a selection of issues in biomedical ethics. The course will include careful examination of the philosophical theories of ethics which have guided medical ethics since its inception.

Course Objectives:

- To understand the importance of ethics and professionalism in the practice of medicine.
- To understand the principles of medical ethics.
- To understand the process of analyzing an ethical case.
- To know several sources of information regarding the legal regulation of medical practice.
- To understand the relationship between medical ethics and medical professionalism.
- To understand ethical and legal concepts relating to informed consent, surrogate decision making, and advance directives.
- To understand ethical and legal concepts relating to confidentiality.

General Topics outline

- Fiqh of Medicine and Medical Cases from the Islamic Point of View.
- Contemporary Approaches to Medical Ethics.
- Medical Professionalism.
- Doctor-Patient Relationship.
- Confidentiality.
- Truth Telling.
- Autonomy, Paternalism & Informed Consent.
- Abortion.
- Seriously Ill Infants.
- Euthanasia/Assisted Suicide.
- Medical Research & Experiments
- Justice and the Health Care System.
- Biotechnology.
- Health-Community issues.
- Health Law and Medicine.

Course Outcomes:

By the end of this course, the student will be expected to:

1. Understand the regulations of Islam regarding medical cases.
2. Understand the social evolution of medical practice.
3. Appreciate the models of patient-health provider relationship.
4. Formulate opinion regarding certain ethical issues faced in medical practice including:
    1. The "informed consent" and competence.
    2. The eligibility criteria for signing the informed consent
    3. "Confidentiality" and the "right to know" issues
    4. Truth telling
    5. end-of-life issues
    6. Ethical issues in human experimentation.
    7. Ethical issues in health care.

Assessment :

- Quizzes
- Assignments
- Seminar presentations
- Final written Exam

Embryology *

Course Code : MEDC 2211
Study Hours: Two Credit hours (32 hours)

Course description:
This course introduces students to human embryology from fertilization to the end of the fetal period. During the course various organ systems, the principles of teratology, mechanisms of malformation and the etiology and pathogenesis of some of the more common human congenital abnormalities will be reviewed. The first half of the course will focus on developmental mechanisms and early development. The second half of the course will focus on development of organ systems in the human body.
The syllabus is supplemented with additional educational material and animations that will provide thorough understanding on clinical correlations of human embryological development.

Course content

Part I Early Development and Developmental Mechanisms

1. Organizational Meeting and Introduction
2. Gametogenesis
3. Fertilization and Cleavage
4. Early Development and Implantation
5. Gastrulation and Primary Germ Layers,
6. Neurulation and Neural Induction
7. Establishment of Basic Body Plan
8. Placenta

Part II Development of Organs Systems

1. Development of Cardiovascular system
2. Development of GI and Respiratory System
3. Development of Urinary System
4. Development of Reproductive System
5. Development of Blood and Immune System
6. Development of Musculoskeletal System
7. Development of Head & Neck
8. Development of Endocrine System

Course Objectives:
• Describe the major events related to early embryogenesis including fertilization, implantation, gastrulation, neurulation and body folding.
• Describe the major events related to organogenesis.
• Define the embryonic derivatives of major adult anatomical structures.

Learning Outcomes:
As a result of completing this course, students will be able to:

1. Describe early human development
2. Illustrate developmental control mechanisms
3. Describe the development of selected organ systems in the human body
4.Explain and identify normal embryological anatomy and identify anomalies in development of various tissues through a comparison of normal and abnormal development
5. Illustrate clinical correlates.

Evaluation:

- Attendance 5%
- Quizzes & Seminar 5%
- Mid-term written Exam 30%
- Final written Exam 60 %

Medical Histology *

Course Code: MEDC 2210
Study Hours: Two Credit hours (32 hours)

Course description:
Histology is the science of tissues (Greek; Histos means web or tissue and logia means branch of learning). This course focuses on the microscopic study of tissues and the tissue organization of organs in relation to their function using light and electron microscopy. Tissue preparation for microscopic study, histochemistry, stains and stain technology will be included.

Histology Course contents:
The students study the following topics :

- Epithelial Tissue
- Connective Tissue
- Adipose tissue
- Cartilage
- Bone
- Nerve Tissue & the Nervous System
- Muscle Tissue
- Circulatory System histology
- Blood & Hemopoiesis
- The Immune System & Lymphoid Organs
- Digestive Tract
- Organs Associated with the Digestive Tract
- Respiratory System histology
- Skin histology
- Urinary System histology
- Endocrine System histology
- Male Reproductive System histology
- Female reproductive System histology
- The eye and ear histology

Course Objectives :

- provide a foundation of the fundamental concepts of the microscopic anatomy of the human body;
- familiarize students with basic tissues and the extracellular matrices surrounding them: epithelium, connective tissues, including blood, bone and cartilage, muscles, and nerves
- familiarize students with organs and the systemic arrangement of tissues performing a specific function, as of respiration, digestion, etc
- develop an understanding how organ integrity and functions are maintained by the organization of cells and tissues; and

- promote critical thinking of the clinical consequences of cellular disorders and tissue-related diseases, intracellular pathogens, cancer and diabetes.

Learning Outcomes:

Upon completion of this course, students will be able to:

- identify organs, tissues and cells of the human body & describe their functions
- demonstrate an understanding of the microscopic organization and relationships of cells, tissues and organs of the human body;
- Integrate the knowledge gained as a foundation for the subsequent study of pathology and aspects of other diagnostic laboratory disciplines.
- develop problem solving skills to evaluate both normal and pathologic structure and function of cells and tissues that comprise the organs of the human body; and
- demonstrate critical thinking skills to describe possible pathologic outcomes of dysfunctional cells and tissues.

Evaluation:

- Attendance 5%
- Quizzes & Seminar 5%
- Mid-term written Exam 30%
- Final written Exam 60 %

Human Anatomy III *

Course Code : MEDC 2322
Study Hours : Three Credit hours (48 hours)

Course description:
This is a comprehensive course of the structure of the head and neck region and nervous system of the human body. The course presents anatomy of the human head and neck and surrounding structures. Emphasizes basic anatomical terminology, landmarks, and a complete description of the skeletal, muscular, lymphatic, vascular, and innervation systems.
The course is consisting of lectures, demonstrations and dissection videos. Students will be introduced to the fundamental structural and functional principles of these regions.
Contents:
In this course Regions studied include

1. Head and Neck.
2. Neuroanatomy

1.The Head and Neck anatomy:

Clearly, many signs and symptoms related to the region of the head and neck are determined by the anatomic arrangement of the various structures. This course discusses the basic anatomy of this complicated region and highlights the clinical relevance of the structures considered.

Topics include :

1- Superficial anatomy of the neck
2- Muscles of the neck
3- Triangles of the neck
4- Vessels & root of the neck
5- Nerve of the neck
6- Lymphatic of head & neck
7- Viscera of the neck
8- Temporomandibular joint & submandibular region
9- Parotid & infratemporal fossa
10- Larynx
11- Oral cavity & pharynx
12- Nose & paranasal sinuses
13- Endocrine glands in the head and neck
(pituitary gland , pineal gland , thyroid gland and parathyroid glands)
14- Face
15- Scalp
16- Skull

(Bones of the skull, the cranial cavity, Vault of the skull, Base of the skull, anterior cranial fossa, Middle cranial fossa, Posterior cranial fossa, Neonatal skull, the meninges, the venous blood sinuses)

17- Ear anatomy (outer , middle and inner)

Objectives:

1-The aim of the course is to teach students the topography of the human body and to assist them in developing a three-dimensional visualization of anatomic features.
2- Describe the structure, composition and functions of the organ systems of the human body.
3- Describe how the organ systems function and interrelate.
4- Learn basic technical terminology and language associated with anatomy.
5-Describe how humans adapt through their anatomical design.
6-Describe how the anatomy of humans relates to that of other vertebrate animals.
7-Describe how human structure is unique and adaptive.

Learning Outcomes

On completion of this course, the student will be able to:

1- Define and use anatomical terms, directional reference terms and anatomical planes of section.
2- Identify and explain the function of the various regions and associated surface landmarks of the head and neck.(Oral Region, Oral Cavity, Palate ,Tongue, Floor of the Mouth ,Pharynx)
3- Identify all the muscles of the head and neck indicating points of attachment, function, innervation and vascularization for each muscles.
4- Identify all the arterial branches of the external and internal carotids and describe what structures are suggested by each of the arteries.
5- Locate and identify all the major groups of lymph nodes of the head and neck. In addition the student will be able to integrate the knowledge about head and neck lymphatics into clinical practice.
6- Name the twelve cranial nerves, individual exit site from the skull and particular functions.
7- Identify all the bones of the skull. In addition the student will be able to identify the landmarks foramen and articulations for each bone in the skull.

Evaluation:

Quizzes (10 %)
Mid-term written Exam (15%)
Final written Exam (25 %)

Neuroanatomy Topics includes :

External Anatomy of the Brain

- Cerebrum or cerebral hemisphere
- Cerebellum
- Brainstem Spinal cord
- Lobes: frontal, parietal, temporal, occipital
- Insula

- Uncus
- Cerebral cortex
- Central sulcus or Rolandic sulcus
- Precentral and postcentral gyri
- Lateral Sulcus or Sylvian fissure
- Longitudinal Fissure or Sagittal fissure
- Corpus callosum (including splenium, body and genu)
- Medulla
- Pons
- Midbrain or mesencephalon
- Diencephalon (Thalamus, Hypothalamus)
- IIIrd ventricle
- Septum pellucidum
- Cingulate gyrus
- Olfactory tract
- Optic nerve, optic chiasm and optic tract
- Pyramidal decussation
- Olive Pontine protuberance
- Cerebral peduncle
- Interpeduncular fossa (lying between the cerebral peduncles)
- Mammillary bodies
- Inferior cerebellar peduncle
- Middle cerebellar peduncle
- Superior cerebellar peduncle
- Floor of IVth ventricle
- Cerebral aqueduct or Aqueduct of Sylvius
- Superior colliculus
- Inferior colliculus
- Pineal gland or body Pituitary gland (hypophysis)
- Cranial nerves III-XII

Blood supply and meninges.

- Circle of Willis Major arteries (internal carotid; middle cerebral; anterior cerebral; posterior cerebral; anterior and posterior communicating; vertebral; basilar; anterior spinal; posterior inferior cerebellar; anterior inferior cerebellar; superior cerebellar; posterior spinal)
- Superior sagittal sinus
- Choroid plexus
- Interventricular Foramen or Foramen of Monro
- Cisterna magna
- Lumbar cistern
- Falx cerebri

- Tentorium cerebelli
- Arachnoid granulations

PRODUCTION AND CIRCULATION OF THE CEREBROSPINAL FLUID

CRANIAL NERVES

Internal anatomy of the brainstem.

- Superior colliculus
- Inferior colliculus
- Periaqueductal or Central gray
- Cerebral Aqueduct or Aqueduct of Sylvius
- Substantia Nigra
- Red Nucleus
- Basis pedunculi or cerebral peduncle
- Medial longitudinal fasciculus
- Medial lemniscus Decussation of the superior cerebellar peduncle
- Pons Fourth Ventricle
- Superior, middle and inferior cerebellar peduncles
- Pontine nuclei
- Corticospinal/corticobulbar tract
- Medial lemniscus
- Medial longitudinal fasciculus
- Cerebellum
- Medulla
- Dorsal column nuclei
- Nucleus gracilis
- Nucleus cuneatus
- Fourth Ventricle
- Inferior cerebellar peduncle
- Pyramid (corticospinal tract)
- Inferior olivary nucleus
- Reticular formation
- Medial lemniscus
- Medial longitudinal fasciculus

Learning Outcomes

After completing this course students should be able to:

1. To gain an understanding of the structural neuroanatomy of the central nervous system.
2. To gain an understanding of the functional connections within the central nervous system.
3. To deduce structure/function relationships in order to understand clinical diagnoses of various neurological conditions.

4. To recognize functional manifestations of classic neural disorders, and be able to explain their etiology.
5. To introduce methods of neuroradiology and imaging techniques important to the study of brain function.
6.

Evaluation:

Quizzes	20 point
Attendance and activity	5 points
Home work	5 points
Final Exam	20 point
Final Grade	**50 points**

Medical Physiology III *

Course code : MEDC 2432
Credit hours: Four Credit hours (64 hours)

Course description:
The medical physiology courses, in general, provides students with basic aspects of medical physiology "cardiovascular, pulmonary, renal, gastrointestinal, reproduction, endocrine and metabolism. In addition to principles of general physiology, the control of different organs and the coordination among them is reviewed. By the end of this course, the students will have mastered

1. **Renal system and Body Fluids from a physiological perspective.**
2. **Nervous system physiology**

1. Renal system and Body Fluids

Contents:
The Body Fluids and Kidneys

- The Body Fluid Compartments: Extracellular and Intracellular Fluids; Edema
- The Urinary System: Functional Anatomy and Urine Formation by the Kidneys
- Glomerular Filtration, Renal Blood Flow, and Their Control
- Renal Tubular Reabsorption and Secretion
- Urine Concentration and Dilution; Regulation of Extracellular Fluid Osmolarity and Sodium Concentration
- Renal Regulation of Potassium, Calcium, Phosphate, and Magnesium; Integration of Renal Mechanisms for Control of Blood Volume and Extracellular Fluid Volume
- Acid-Base Regulation
- Diuretics, Kidney Diseases

Objectives:
The primary objective of the Medical Physiology Course is to ensure that students understand how the body works and interacts, the regulatory mechanism and basic pathophysiology of common diseases.
Learning Outcomes

After completing this course students should be able to:

1. Define homeostasis and explain how homeostatic mechanisms normally maintain a constant interior milieu.

2. State the functions of each organ system of the body, explain the mechanisms by which each functions, and relate the functions and the anatomy and histology of each organ system.

3. Understand and demonstrate the interrelations of the organ systems to each other.

4. Predict and explain the integrated responses of the organ systems of the body to physiological and pathological stresses.

5. Explain the pathophysiology of common diseases related to the organ systems of the body.

2. Nervous system physiology

Topics outline

- The Nervous System: General Principles and Sensory Physiology
  - General Design of the Nervous System
  - Major Levels of Central Nervous System Function
  - Central Nervous System Synapses
  - Some Special Characteristics of Synaptic Transmission
- Sensory Receptors, Neuronal Circuits for Processing Information
  - Types of Sensory Receptors and the Sensory Stimuli They Detect
  - Transduction of Sensory Stimuli into Nerve Impulses
  - Nerve Fibers That Transmit Different Types of Signals, and Their Physiologic Classification
  - Transmission of Signals of Different Intensity in Nerve Tracts—Spatial and Temporal Summation
  - Transmission and Processing of Signals in Neuronal Pools
  - Instability and Stability of Neuronal Circuits
- Somatic Sensations
- Organization, the Tactile and Position Senses
- Pain, Headache, and Thermal Sensations
- The Special Senses
- The Eye
- The Sense of Hearing
- The Chemical Senses—Taste and Smell
- Motor and Integrative Neurophysiology
  - Organization of the Spinal Cord for Motor Functions.
  - Flexor Reflex and the Withdrawal Reflexes.
  - Crossed Extensor Reflex.
  - Reciprocal Inhibition and Reciprocal Innervation.
  - Reflexes of Posture and Locomotion.
  - Scratch Reflex.
  - Spinal Cord Reflexes That Cause Muscle Spasm.
  - Autonomic Reflexes in the Spinal Cord.

  - Spinal Cord Transection and Spinal Shock.
- Cortical and Brain Stem Control of Motor Function
- Contributions of the Cerebellum and Basal Ganglia to Overall Motor Control
- The Limbic System and the Hypothalamus States of Brain Activity—Sleep, Brain Waves, Epilepsy, Psychoses
- The Autonomic Nervous System and the Adrenal Medulla
  - General Organization of the Autonomic Nervous System
  - Basic Characteristics of Sympathetic and Parasympathetic Function
  - Autonomic Reflexes
- Cerebral Blood Flow, Cerebrospinal Fluid, and Brain Metabolism

Evaluation:

Midterm Exam	40 point
Attendance and activity	10 points
Home work	10 points
Final Exam	40 point
Final Grade	**100 points**

Practical Medical Parasitology **

Course code : MEDC 3111

Study Hours : One Credit hour (32hours)

Practical medical parasitology course aims to provide students with the skills required for the diagnosis of intestinal and blood parasites. Also to make the students aware about the diagnostic methods and investigations used in isolation, detection and identification of parasites in medical laboratories and handling microscope to see the samples of parasites on microscopic slides.

Practical sessions are very important to confirm the theoretical data that have been taught in lectures, so the practical sessions and the lectures are considered complementary to each other.

Practical session is designed to identify different types of parasites & vectors from the morphological point of view.

SLIDES, JARS AND SNAILS:

- *Entamoeba histolytica trophozoite.*
- *Entamoeba histolytica cyst.*
- *Plasmodium vivax ring, thin blood film.*
- *Plasmodium falciparum gametocyte, thick blood films.*
- *Giardia intestinalis trophozoite.*
- *Giardia intestinalis cyst.*
- *Leishmania donovani, spleen.*
- *Balantidium coli trophzoite.*
- *Balantidium coli cyst.*
- *Pneumocytis carinii rat lung.*
- *Pneumocytis carinii human lung*
- *Heterophyes heterophytes adult.*
- *Shistosoma mansoni male.*
- *Taenia solium adult.*
- *Taenia egg.*
- *Entrobius egg.*
- *Taenia Gravid Segment.*
- *Hydatid Cyst.*
- *Trichina Capsule.*
- *Dipylidium caninum Scolex.*
- *Entrobius male.*
- *Ancylostoma mouth.*
- *Ascaris egg.*

- A Jar for *Hydatid Cyst* liver.
- A Jar For *Ascaris Female.*
- *Trypanoaoma cruzi (blood film).*
- *Toxoplama gondii (blood film)..*
- *Paragonimus westermani adult worm.*
- *Leishmania amastigotes (blood film).*

Outcomes

The ability to give description about different medically important parasites based on their appearance under microscope, and to notice to differences about them.

Assessment :

- Quizzes
- Mid-term Practical Exam
- Final written and Practical Exam

Practical Pathology I **

Course Code: MEDC 3121
Study hours: One Credit hour (32 hours)

Course description:

This practical course will provide an opportunity for students to examine macroscopic and microscopic specimens illustrating the pathology covered in lectures.

The objective is to be familiar with the morphological patterns of disease through looking at photographs, gross and histological sections and link those with pathogenetic mechanisms and specific disease

Students are required to look at the slides, and to draw the basic concepts of the morphologic changes depicted in the specimens. Some sessions may include student presentations under the supervision of a staff member. In gross pathology, students are to look at & describe pathology specimens.

Computer based laboratory sessions are a major component of the practical classes

Course contents
Each one of the following topics consists of a series of Microscopic slides and gross pathological specimens demonstrating pathologic findings:

- Cellular Injury:
- Immunopathology:
- Infection:
- Inflammation:
- Neoplasia:
- Infection:
- Cardiovascular Pathology:
- Atherosclerosis and Thrombosis:
- Pulmonary Pathology:

Course Objectives & Learning Outcomes
The objective is to be familiar with the morphological patterns of disease through looking at photographs, gross and histological sections and link those with pathogenetic mechanisms and specific disease
By the end of this course the student is expected to

- Develop sufficient knowledge of gross pathology and histopathology
- Interpret findings at surgery
- Interpret pathology reports
- Intelligently review pathology slides with a consulting pathologist

Evaluation:

- Attendance 10%
- Quizzes 10%
- Mid-term Exam 30%
- Final Exam 50 %

Practical Medical Microbiology I **

Course Code: MEDC 3131

Study Hours: One Credit hour (Two hours per week / 32 hours)

Course description:

This course is organized as full two hours teaching per week including theoretical part and practical laboratory work. The practical part of the course covers basic principles of microbiology which include Isolation of microorganisms, preparing stained smears, culturing micro-organisms, performing biochemical tests (such as tests for metabolism of carbohydrates, tests for metabolism of proteins and amino acids and tests for enzymes) to identify bacteria, and studying microbial growth control methods. As well as teaching the students how to use aseptic technique in all microbiological methods.

Contents:

Week	Topic
24.	Introduction
25.	Isolation of pure culture and sterile transfer & Simple stain
26.	Gram stain & Acid fast stain
27.	Spore stain & Negative stain
28.	Bacterial motility, Amylase production
29.	gelatin liquefaction, Catalase Production &Coagulase test
30.	Oxidase Production, (MR-VP), Indole Test, Citrate Test, Urease Test, Nitrate Test
31.	Single Media / Multiple Tests & Selective and differential media
32.	Bacterial oxygen requirements, Anaerobic bacteria
33.	The serial dilution and generation time
34.	Bacteria identification

Objectives:

1. Understanding of the key concepts of the microbiology.
2. Teaching the students the best available methods in microbiology, and provide them with the up-to-date knowledge.
3. Learn the proper use of a phase contrast microscope to observe microorganisms and report observed characteristics.

4. Master aseptic technique and be able to perform routine culture handling tasks safely and effectively.
5. Apply their knowledge of microbial structure and metabolism to the identification of unknown microorganisms.

Learning Outcomes

Upon completion of the course students will be able to:

1. Understand the structural similarities and differences among gram positive and negative bacteria.
2. Prepare of bacterial smear and staining (Gram's, Acid-fast, staining of bacterial spores ,flagella, capsule)
3. Prepare of media, and how to distinguish between different types of media.
4. Cultivate of bacteria on different types of media (agar plate, deep, slant and broth)
5. Perform biochemical tests for identification of bacteria
6. Preserve of stock cultures of bacteria.
7. Conduct aseptic technique while handling with bacterial specimens.

Evaluation:

Attendance & activity in Lab.	20%
Midterm exam	30%
Practical exam	20%
Final exam	30%

Practical Medical Pharmacology I **

Course Code: **MEDC 3141**

Study Hours: One Credit hour (32 hours)

Pharmacology lab one is a consecutive group of presentations that break the traditional way of pharmacology teaching. In this course various educational approach are applied to enhance better understanding of the theoretical courses. These approaches include Pharmacology animation videos, interactive animation program, and student's presentation and discussion groups.

Course content	
General principles of Pharmacokinetics	1
Drug production and regulations	1
Pharmacokinetic discussion	1
Autonomic Nervous System	1
Autonomic Nervous System discussion	1
Central Nervous System	1
Central Nervous System discussion	1
Cardiovascular System	1
Cardiovascular System discussion	1
Respiratory System	1
Respiratory System discussion	1
Ant inflammatory drugs	1
Antihistamines	1
Herbal Medicine	1

Course Objectives

- Demonstrate the new untraditional methods of pharmacology educations
- Encourage the students to adapt self-learning approach in various pharmacological topics
- Use the pharmacology animation videos technique to enhance the understanding of theoretical lectures
- Encourage the students to design lectures in some selected pharmacological topics

Course outcome

By the end of this course the students should

- Understand how to apply new untraditional educational approaches in pharmacological studies
- Demonstrate the ability to do self-readings in a selected pharmacological topics
- Be able to design and present pharmacological lectures in selected topics
- Be able to engaged in active discussion in various pharmacological debate topics
- Represent comprehensive understanding of general pharmacological topics discussed in this course

Medical Parasitology *

Course Code : MEDC 3211
Study Hours : Two Credit hours (32 hours)

The medical parasitology course aims to provide the students with knowledge and concepts in parasitology, epidemiological and ecological aspects of parasites causing diseases to humans. To make the students fully aware of the pathogenesis, clinical presentations and complications of these parasitic infections. To enable the student, choose the diagnostic method in order to reach the proper diagnosis. To enable the student to know the general outline of treatment, the best drug of choice, prevention and control of parasitic diseases. To provide the students with fairly good knowledge about endemic parasitic diseases in Palestinian environment in Gaza Strip and their impact on health. To study different examples of medical insects transmitting diseases to human.

Topics

-Definitions and Concepts in Parsitology
-Lumen-Dwelling Protozoa- :
Intestinal Protozoa (E.g .*Entamoeba histolytica, ,*
The Flagellates *(Giardia lamblia, Trichomonas vaginalis, Dientamoeba fragilis*). The ciliate *Balantidium coli*, The Apicomplexa "sporozoa" (*Cryptosporidium parvum*).
- Malaria
-Other Blood -and Tissue-Dwelling Protozoa The Haemoflagellates (E.g.*Trypanosoma, Leishmania sp., Toxoplsma gondii.* The Opportunistic Free-living Amebae (e.g. Naegleria fowleri, Acanthamoeba).
The Trematodes
-The Intestinal Flukes (e.g. *fasciolopsis buski, Heterophyes heterophyes*)
-The liver flukes (e.g. *Fasciola hepatica*)
-The blood flukes (e.g. Schistosoma spp.)
-The lung flukes (e.g. Paragonimus spp.).
The Cestodes
- *Diphylobpthrium latum* (Sparganosis), *Taenia solium* (Cysticercosis),*Taenia saginata, Ecchinococcus granulosus, Hymenolepis nana, Hymenolepis diminuta*
The Intestinal Nematodes or Round Worms:
-(E.g. *Ascaria lumbricoides, Enterobius vermicularis, Ancylostoma duodenalae, Strongyloides stercoralis, Trichuris trichiura,*
-The Blood-and Tissue-Dwelling nematodes (*Wucheraria bancrofti, Loa loa*).
-Other Tissue Nnematodes (e.g.*Trichinella spiralis*).

Objectives:

1. To provide the students with knowledge concerning biological (taxonomy, morphology, Life cycle), some concepts in parasitology, epidemiological and ecological aspects of parasites causing diseases to humans.

2. To make the students fully aware of the pathogenesis, clinical presentations and complications of these parasitic infections.

3. To enable the students to select the diagnostic methods in order to reach the final proper diagnosis.

4. To enable the students to know the general outline of treatment, the best drug of choice, prevention and control of parasitic diseases.

5. To provide the students with fairly good knowledge about endemic parasitic problems in Gaza Strip and their impact upon health.

6. To study different examples of medical insects transmitting diseases to human.

Outcomes

The ability to describe different types of medically important parasites, modes of transmission, pathogenesis, associated symptoms, to diagnose and treat these diseased, also to describe tics with medical significance, and how to prevent and control parasitic disease.

Assessment:

- Mid-term Exam
- Seminar
- Final Exam
- Oral Exam

Immunology *

Course Code: MEDC 3312
Study hours: Three Credit hours (48 hours)

This course presents the fundamentals of immunology, with an emphasis on human immune system and diseases. Topics covered include the basic elements of immune systems including lymphoid tissues/organs and cells with immune functions; principles of natural immunity and acquired immunity including humoral immunity and cell-mediated immunity; cellular and molecular basis of B cell and T cell development and diversity; immune tolerance; immune mediators and cytokines; clinical aspects of immunology including microbial immunity, hypersensitivities/immune- mediated diseases, immune deficiencies and other disorders such as tumor immunity, transplantation immunology, and immunodeficiency.

Topics:

- General properties of immune response both innate and adaptive.
- Cells and tissues of the immune response.
- Antibodies and antigens.
- MHC molecules.
- Antigen processing and presentation.
- Maturation, activation and regulation of lymphocytes
- Tolerance and autoimmunity.
- Cytokines and Immune Function.
- Immunity in defense and disease with respect to microbes, transplantation and tumors.
- Immunodeficiency.

Course Objectives

1. Knowing the concept of "Lines of defense" and principles of immunology.
2. Knowing the function of the nonspecific immune response.
3. Understanding the specific immune response and its molecular basis.
4. Understanding the function of integration of the immune system.
5. Understanding the basics of immune system disorders.

Outcomes:

Upon successful completion of this course, students will be able to fulfill related course objectives.

Assessment:

- Quizzes
- Mid-term Exam
- Final Exam

Medical Microbiology I *

Course Code : MEDC 3331

Study Hours : Three Credit hours (48 hours)

This course introduces medical students to basic concepts in microbiology including, bacteriology, virology and mycology. It also concentrates on medical microbiology and provides core knowledge of infectious disease processes affecting each organ system, as well as working knowledge of the appropriate clinical laboratory investigations.

Topics

BASIC BACTERIOLOGY

Bacteria compared with other microorganisms
Structure of bacterial cells
Growth
Genetics
Classification of medically important bacteria
Normal flora
Pathogenesis
Host defenses
Laboratory Diagnosis
Antimicrobial Drugs: Mechanism of Action
Antimicrobial drugs: Resistance
Bacterial Vaccines
Sterilization & Disinfection

BASIC VIROLOGY

Structure
Replication
Genetics & Gene Therapy
Classification of Medically Important Viruses
Pathogenesis
Host Defenses
Laboratory Diagnosis
Antiviral Drugs
Viral Vaccines

MYCOLOGY

Basic Mycology
Cutaneous & Subcutaneous Mycoses
Systemic Mycoses
Opportunistic Mycoses

Objectives

1. To briefly review basic concepts of microbiology, with emphasis on the processes which allow bacteria, fungi, and viruses to cause disease.
2. To introduce the students to the organization and function of host responses and host defense to disease.
3. To provide students with a survey of the clinically significant bacterial, fungal, and viral diseases in the world, with an emphasis on those most common in Palestine and the middle east and have important social, financial, and ethical consequences.
4. To study the morphology, physiology, virulence factors, pathology and epidemiology, of pathogenic microbes and methods of detection, prevention and treatment of the diseases they cause.

Outcomes

Be the end of this course the student should be able to name different species of bacteria, viruses, and fungi, in addition to mention special characteristics to each microorganism that are medically important.

Assessment

- Mid-term Exam
- Seminar
- Final Exam

Medical Pharmacology I *

Course Code: MEDC 3341
Total Hours: Three Credit hours (48 hours)

Pharmacology studies the effects of the drugs on the body and the effects of the body on the drugs. Pharmacology for medical students focus in the application of major pharmacological principles in clinical practice. In this course the students are equipped the necessary pharmacological knowledge that enable them to have better clinical practice in the next clinical year.

Course Content	Number of lectures
Introduction to Pharmacology	
Pharmacokinetics	1
Pharmacodynamics	1
Pharmacogenetics	1
Drug metabolism	1
Drugs evaluation and regulation	1
Autonomic nervous system	
Physiology of autonomic nervous system	1
Cholinergic agonists and antagonists	3
Adrenergic agonists and antagonists	3
Drugs for Cardiovascular disease	
Hypertension	2
Heart failure	1
Arrhythmia	1
Ischemic heart diseases	1
Diuretic drugs	1
Anti-hyperlipidemia	1
Drugs with important effect on smooth muscles	
Antihistamine	1
Vasoactive peptides	1
Prostaglandin and eicosanoid	1
Nitric oxide donors and inhibitors	1
Drugs for respiratory system	3
Drugs for Central Nervous System	
Introduction to CNS	1
Sedatives and hypnotics	2
Ant seizure drugs	1
General anesthesia	1
Local anesthesia	1

Skeletal muscle relaxant	1
Anti-Parkinson drugs	1
Antipsychotic	1
Antidepressants	1
Opioids	2
Addictions	2

Course objective

- Explain the main differences between pharmacokinetics and Pharmacodynamics
- Explain the bases for classification of major drugs groups
- Describe the mechanism of actions of major drugs groups
- Explain the side effects of major drugs groups
- Demonstrate the potential clinical applications of various drugs groups

Course outcome

- By the end of this course the students should
- Understand the major concepts of pharmacokinetics and pharmacodynamics
- Be able to list the major drugs groups
    - Autonomic nervous system drugs
    - Central nervous system drugs
    - Cardiovascular drugs
    - Drugs with main effects on smooth muscle cells
- Describe the mechanism of action of the above mentioned main drugs groups
- Explain the main side effects of the above mentioned major drugs groups
- Demonstrate the clinical application of the above mentioned drug groups

Pathology I *

Course Code: MEDC 3421
Study Hours: Four Credit hours (64 hours)

Course description:

Pathology is the branch of medicine that deals with the causes and mechanisms of human diseases, therefore it is one of main foundations of medicine, and it serves to bridge basic medical disciplines with clinical sciences.

Pathology as a whole is usually divided into

- General pathology: deals with disease processes in general and the study of the basic molecular, cellular and tissue reactions to different injurious agents
- Systemic pathology: Deals with diseases specific to particular organs or systems.

- Laboratory medicine **:** Throughout the course we introduce and integrate laboratory data that are frequently used in clinical medicine.

In this course, the general pathology and part of the systemic pathology (Cardiovascular & Respiratory) are going to be covered.

Content of Pathology I course: -

- Cell injury, cell death, and adaptations
- Acute and chronic inflammation
- Tissue repair: regeneration, healing, and fibrosis
- Hemodynamic disorders, thrombosis, and shock
- Neoplasia –nomenclature. characteristics of benign and malignant neoplasms, epidemiology, carcinogenesis: the molecular basis of cancer etiology of cancer: carcinogenic agents , host defense against tumors: tumor immunity and clinical aspects of neoplasia

- The heart pathology
  - Heart failure
  - Congenital heart disease
  - Ischemic heart disease
  - Hypertensive heart disease
  - Valvular heart disease
  - Cardiomyopathies
  - Pericardial disease
  - Cardiac tumors

- Vascular disease
- Congenital anomalies
- Vascular wall cells and their response to injury
- Arteriosclerosis
- Atherosclerosis
- Hypertensive vascular disease
- Aneurysms and dissections
- Vasculitis
- Raynaud phenomenon
- Veins and lymphatics
- Tumors
- Pathology of vascular intervention

- The lung pathology
- Atelectasis (collapse)
- Acute lung injury
- Obstructive versus restrictive pulmonary diseases
- Obstructive pulmonary disease
- Diffuse interstitial (restrictive, infiltrative) lung diseases
- Diseases of vascular origin (pulmonary embolism, hemorrhage, and infarction) Pulmonary infections
- Lung tumors
- Pleural lesions
- Lesions of the upper respiratory tract

Course Objectives

- Explain basic tissue reactions to different types of injuries
- Explain the etiology of major diseases
- Describe the pathogenesis (how) of the diseases
- Describe the morphologic effects produced by the disease
- Correlate the pathological changes with the clinical picture
- Describe the effects of the disease on the function of organs
- Know the outcome and possible complications of the disease

Learning Outcomes

By the end of the course the student will be able to

- Understand and describe the four aspects of the major disease processes covered in the course:
  - Cause (etiology).
  - Mechanisms of development (pathogenesis).
  - Structural alterations induced in the cells and organs (morphologic changes).
  - Functional consequences of the morphologic changes (clinical significance)

- Use knowledge of pathological principles in order to formulate possible diagnoses on the basis of a patient' history and findings on clinical examination.
- Know when and how to request a laboratory investigation (e.g. a biopsy, a clinical pathology laboratory assay, an autopsy)
- Understand the significance of a result or report that comes back from the pathology laboratories.
- Explain the result or report to a patient when so authorized.

Evaluation:

- Attendance 5%
- Quizzes & Seminar 5%
- Mid-term written Exam 30%
- Final written Exam 60 %

Practical Pathology II **

Course Code: MEDC 3122
Study hours : One Credit hour (32 hours)

Course description:
This practical course will provide an opportunity for students to examine macroscopic and microscopic specimens illustrating the pathology covered in lectures. The objective is to be familiar with the morphological patterns of disease through looking at photographs, gross and histological sections and link those with pathogenetic mechanisms and specific disease.

Students are required to look at the slides, and to draw the basic concepts of the morphologic changes depicted in the specimens. Some sessions may include student presentations under the supervision of a staff member. In gross pathology, students are to look at & describe pathology specimens. Computer based laboratory sessions are a major component of the practical classes

Course contents
Each one of the following topics consists of a series of Microscopic slides and gross pathological specimens demonstrating pathologic findings:

- Renal Pathology
- Gastrointestinal Pathology:
- Liver,biliary system & pancreas pathology
- Endocrine Pathology:
- Hematopathology:
- Male Genital Tract Pathology
- Female Genital Tract Pathology:
- Central Nervous System Pathology:
- Skin & musculoskeletal pathology

Course Objectives & Learning Outcomes
The objective is to be familiar with the morphological patterns of disease through looking at photographs, gross and histological sections and link those with pathogenetic mechanisms and specific disease
By the end of this course the student is expected to

- Develop sufficient knowledge of gross pathology and histopathology
- Interpret findings at surgery
- Interpret pathology reports
- Intelligently review pathology slides with a consulting pathologist

Evaluation:

- Attendance 10%
- Quizzes 10%
- Mid-term Exam 30%
- Final Exam 50 %

Practical Medical Microbiology II **

Course Code: MEDC 3132

Study Hours: **One Credit hour (32 hours)**

Course description:

This advanced course of medical microbiology covers the diagnosis of infectious diseases. It addresses common procedures used to collect clinical specimens (such as urine, blood, CSF, ear, eye and vaginal discharge, pus, wound and throat swab, sputum and stool) and their handling and processing. Also, it emphasizes the characteristics of the most pathogenic bacteria, methods of their isolation and identification. It helps the student to perform the common procedures for serological and antibiotic susceptibility testing & the recent advances in the diagnosis of infectious diseases.

Contents:

Week	Topic
1	Introduction
2	Urine Culture
3	Blood Culture
4	Cerebrospinal Fluid (CSF) and Sterile Body Fluid culture
5	Conjunctival Discharge, Ear Discharge
6	Genital discharge culture
7	Pus culture and Sputum Culture
8	Stool Culture: Routine, Salmonella & Shigella, E. coli O157:H7 and Vibrio spp.
9	Throat Swab for Beta-Haemolytic Streptococcus Culture, Group A Only
10	API 20E
11	Antimicrobial Chemotherapy to Control Microorganisms

Objectives:

8. Teaching the students the best available methods in diagnostic microbiology, and provide them with the up-to-date knowledge.
9. Teaching the students criteria of specimen selection, collection, storage, transport, and processing to recover pathogens from clinical specimens.
10. Conducting aseptic technique while handling clinical specimens.
11. Diagnosis of different types of bacteria, gram positive, gram negative, aerobes and anaerobes.
12. Teaching the students assays for antimicrobial agents and chemotherapy testing, basis of antibiotic selection, and interpretation.
13. Introducing the students to automation in microbiology, and use of commercial available kits and tools in bacterial isolation, identification, and antimicrobial testing.
14. Introducing the students to diagnostic aspects of fungal infections.

Learning Outcomes

Upon completion of the course students will be able to:

1. Describe the purpose of clinical microbiology, and apply it.
2. Correlate safety requirements, laboratory design, and quality assurance in laboratory practice.
3. Select, collect specific clinical sample, in specific container, and process it microscopically and culturally.
4. Isolate and detect of the specific pathogens utilizing traditional identification criteria.
5. Perform antimicrobial susceptibility tests based on organism and sample source.
6. Perform fungal diagnostic techniques including culture and microscopy.

Evaluation:

Attendance & activity in Lab.	20%
Midterm exam	30%
Practical exam	20%
Final exam	30%

Practical Medical Pharmacology II **

Course Code: **MEDC 3142**
Study Hours: **One Credit hour (32 hours)**

Pharmacology lab two is a consecutive group of presentations that break the traditional way of pharmacology teaching. In this course various educational approach are applied to enhance better understanding of the theoretical courses. These approaches include Pharmacology animation videos, interactive animation program, and student's presentation and discussion groups.

Course content	
Antibiotics	1
Antibiotics discussion	1
Antiviral	1
Antifungal	1
Anti-tuberculosis	1
Anthelmintic	1
Diabetes Miletus	1
DM discussion	1
Endocrine System	1
Endocrine discussion	1
Drugs for blood	1
Gastrointestinal drugs	1
Electronic resources for Pharmacology	1
Toxicology	1

Course Objectives

- Demonstrate the new untraditional methods of pharmacology educations
- Encourage the students to adapt self-learning approach in various pharmacological topics
- Use the pharmacology animation videos technique to enhance the understanding of theoretical lectures
- Encourage the students to design lectures in some selected pharmacological topics

Course outcome

By the end of this course the students should

- Understand how to apply new untraditional educational approaches in pharmacological studies
- Demonstrate the ability to do self-readings in a selected pharmacological topics
- Be able to design and present pharmacological lectures in selected topics
- Be able to engaged in active discussion in various pharmacological debate topics
- Represent comprehensive understanding of general pharmacological topics discussed in this course

Psychology *

Course Code: 3213
Study Hours: Two Credit hours (32 hours)

This course provides the student with the basic principles for understanding the structure of the human psyche in it's normal state, personality traits, normal types of personality and patterns of normal reactions and behaviour. Topics as history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics also explained.

Topics include:

- **Introduction to psychology**
- **Structure of human psyche**
- History of Psychology (explores major developments and ideas in psychology such as: the history of ideas about the mind; the effects of theorists' life experiences on their ideas; key historical and social events that shaped the field; when and how psychology became a science; and how ideas about what is "normal" shape and are shaped by psychology)
- **Brain, Mind, and Behavior** (Particular emphasis is placed on human processes of perception, cognition, learning, memory, and language.)
- Principles of Learning and Behavior (the principles and methods used in the study of how behavior changes as a function of experience.)
- Cognitive Psychology (Principals of attention, memory and forgetting, problem solving, reasoning, and language.)
- Normal Sleep and Sleep-Wake Disorders
- The Psychology of Gender (feminist psychological theory and research dedicated to understanding and critiquing biological, psychological, social, and cultural meanings and implications of gender and its intersections with race, physical ability, sexual orientation, etc. Issues as socialization and social development, stereotypes, bodies and body image, social relationships, identity, language, violence, sexuality and sexual behavior, well-being, work, etc.)
- Social Psychology (social phenomena influence the thoughts, feelings, and behavior of individuals. Topics include emotion, aggression, conformity, attitudes, altruism, prejudice, persuasion, and group dynamics.)
- **Developmental Psychology**(life-span human development; the processes that shape our lives between conception and death. issues related to physiological/biological, cognitive/linguistic, and social/emotional development.)
- Health Psychology (multiple, interactive factors that contribute to human health; a biopsychsocial approach to understanding how best to promote and maintain health, prevent and treat illness, and adapt and thrive in the context of chronic illness. the roles of stress, coping, immune response, social relationships, personality, and structural inequalities in the progression and prevention of disease. The ways in which behaviors (e.g. physical activity, nutrition, substance use, sleep) can contribute to wellbeing or sickness.

- Clinical and Counseling Psychology (Applications of psychological principles to the mental health field by exploring strategies for therapeutic intervention. Discussion a wide range of approaches (e.g., psychoanalysis; humanistic therapy; cognitive behavioral and dialectical behavior therapy; mindfulness based stress reduction; family therapy; art therapy) .
- Psychiatric Interview, History, and Mental Status Examination

Course Objectives

- Understand the structure of the human psyche
- Discuss the Biological/Psychological/Social models and their interaction for understanding health and disease.
- Recognize psychological landmarks, behaviors and developmental stages of the human life cycle.
- Discuss the importance of the brain as a regulator of emotional and somatic functions and the role of biologic and psychological functions of the brain in the genesis and maintenance of disorders
- Understand the concepts of biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, normal sleep and sleep-sake disorders
- Build a basic knowledge about personality traits, normal types of personality and patterns of normal reactions and behavior.
- Recognize the principles and parts of the psychiatric interview including the Mental Status Exam.

Learning Outcomes

By the end of the course the student will be able to

- Understand human behavior in health and disease.
- Understand psychosocial aspects of disease.
- Be prepared for Psychiatry Clerkship.

Evaluation:

- Attendance 5%
- Quizzes & Seminar 5%
- Mid-term written Exam 30%
- Final written Exam 60 %

Introduction to Medical Genetics *

Course Code: MEDC 3310
Study hours: Three Credit hours (48 weeks)

Course description:
"Genetics is fundamental to the basic sciences of preclinical medical education and has important applications to clinical medicine, public health and medical research.
This course is expected to provide an accurate exposition of the fundamental principles of human and medical genetics. It will provide students with a framework for understanding the field of medical genetics, including an introduction to genetics and genomics in medicine, principles of clinical cytogenetics, disorders of the autosomes and the sex chromosomes, patterns of single-gene inheritance, genetics of common disorders with complex inheritance, genetic variation in individuals and populations, cancer genetics and genomics. Clinical cases, will be discussed to demonstrate and reinforce general principles of disease inheritance, pathogenesis, diagnosis, management, and counseling.

Course contents:
The students study the following topics:

- Principles of Clinical Cytogenetics
- Clinical Cytogenetics-Disorders of the Autosomes and the Sex Chromosomes Patterns of Single-Gene Inheritance
- Genetics of Common Disorders with Complex Inheritance
- Genetic Variation in Individuals and Populations: Mutation and Polymorphism
- Cancer genetics and genomics
- Cases for presentation

1. Cystic Fibrosis
2. Hemophilia
3. Thalassemia
4. Hereditary Hemochromatosis
5. Sickle Cell Disease
6. Tay-Sachs Disease
7. Glucose-6-Phosphate Dehydrogenase Deficiency
8. Duchenne Muscular Dystrophy
9. Fragile X Syndrome
10. Beckwith-Wiedemann Syndrome

11. Familial Hypercholesterolemia
12. Insulin-Dependent Diabetes Mellitus
13. Non-Insulin-Dependent Diabetes Mellitus
14. Alzheimer Disease
15. Hirschsprung Disease
16. Huntington Disease
17. Marfan Syndrome
18. Crohn Disease
19. Ornithine Transcarbamylase Deficiency
20. Thiopurine *S*-Methyltransferase Deficiency
21. Intrauterine Growth Restriction
22. Retinoblastoma
23. Hereditary Breast and Ovarian Cancer
24. Chronic Myelogenous Leukemia
25. Familial Adenomatous Polyposis
26. Hereditary Nonpolyposis Colon Cancer
27. Polycystic Kidney Disease
28. Xeroderma Pigmentosum
29. CHARGE Syndrome

Required textbook : Thompson and Thompson Genetics in Medicine) 7th Edition

Course Objectives

1- understand gene structure and human genome organization and function.
2- appreciate the complexities of gene regulation and epigenetics in normal and disease states.
3- explain the basic principles of cytogenetics and how chromosomal abnormalities result in disease.
4- recognize familial patterns of inheritance and the role of pedigrees for both classical Mendelian and common disease.
5- explain the basis of mutation and genetic variation, and their impact on human diversity and health.

6- explain the impact of prenatal and newborn screening on the diagnosis and management of genetic disease.
7- understand the genetic basis of normal development and of cancer.
8- appreciate the importance of communicating with and learning from patients and their caregivers about risk, diagnosis and coping with genetic disease.
9- understand that genetics provides the basis for a future of "personalized medicine", i.e. disease prevention, diagnosis, and therapy based on an individual's genotypes.

Learning Outcomes

By the end of the course the students are expected to know how to:

- Record a relevant history including family-history
- Consider, and inform about the relevant inheritance
- Consider, and inform about all available prenatal diagnostic options
- Know about the most common inheritable disease groups
- Know about the main types of tests for chromosome- and DNA abnormalities
- Know about the procedures of clinical genetic examination and dysmorphology
- The student should be able to account for the occurrence, causes, pathophysiology, genetically background, symptoms and findings, diagnostic principles, follow-up, prognosis and ethical questions of the most common genetic disorders.
- The student should be able to talk with a sick person and its family in order to identify the genetically health problem.
- The student should be able to perform a goal-oriented and systematic clinical genetic examination of patients.
- The student should be able to make a joint evaluation from the history and clinical genetically examination, suggests tentative diagnoses, and suggests further investigations and treatment of the most common genetically disorders.
- The student should be able to communicate medical genetic information in a way patients can understand.

Evaluation:

- Attendance 5%
- Quizzes & Seminar 10%
- Mid-term written Exam 35%
- Final written Exam 50 %

Medical Microbiology II *

Course Code: MEDC 3332

Study Hours: Three Credit hours (48 weeks)

This course introduces medical students to clinical concepts in microbiology including, clinical bacteriology, clinical virology and clinical mycology. It also concentrates on medical microbiology and provides core knowledge of infectious disease processes affecting each organ system, as well as working knowledge of the appropriate clinical laboratory investigations. This course provides the student basic knowledge about diseases caused by microorganisms.

Topics

CLINICAL BACTERIOLOGY

Overview of the major pathogens & Introduction to Anaerobic Bacteria

Gram positive cocci

Gram negative Cocci

Gram positive rods

Gram-Negative Rods Related to the Enteric Tract

Gram-Negative Rods Related to the Respiratory Tract

Gram-Negative Rods Related to Animal Sources (Zoonotic Organisms)

Mycobacteria

Actinomycetes

Mycoplasmas

Spirochetes

Chlamydiae

Rickettsiae

Minor Bacterial Pathogens

CLINICAL VIROLOGY

DNA Enveloped Viruses

DNA Non-enveloped Viruses

RNA Enveloped Viruses

RNA Non-enveloped Viruses

Hepatitis Viruses

Arboviruses

Tumor Viruses

Slow Viruses & Prions

Human Immunodeficiency Virus

Minor Viral Pathogens

Objectives:

1. To provide the student with detailed insight in epidemiology, pathogenesis, prevention and treatment of important infectious diseases, and contemporary issues and novel developments in the field of Medical Microbiology.
2. To address the Global Health aspects of infectious diseases.

Outcomes:

By the end of this course, the student should be able to diagnose infectious diseases that are commonly occurred and involved important systems such as central nervous system, gastrointestinal, respiratory, urinary and musculoskeletal systems based on patient symptoms, physical findings and related laboratory tests.

Assessment:

- Quizzes
- Mid-term written Exam
- Seminar
- Final written Exam

Medical Pharmacology II *

Course Code: MEDC 3342
Total Hours: **Three Credit hours (48 hours)**
Pharmacology studies the effects of the drugs on the body and the effects of the body on the drugs. Pharmacology for medical students focus in the application of major pharmacological principles in clinical practice. In this course the students are equipped the necessary pharmacological knowledge that enable them to have better clinical practice in the next clinical years.

Course content
Chemoreceptor agents
B-lactam antibiotics Cell wall inhibitors Protein synthesis inhibitors Quinolone Tuberculosis Antifungal Antiviral Antiprotozoal Anthelmintic Antiseptic and disinfectant Miscellaneous Anticancer drugs
Drug of blood and inflammation
Drugs for anemia Drugs for coagulation disorders Ant inflammatory drugs
Endocrine system
Drugs for hypothalamus and pituitary Drugs for thyroid gland Corticosteroid hormones Antidiabetic drugs Bone mineral hemostasis
Special topics
GIT drugs Herbal medicine
Toxicology
Principles of Clinical Pharmacology: lecture series covering the fundamentals of clinical pharmacology as a translational scientific discipline focused on rational drug development and utilization in therapeutics. In addition, it will provide an introductory review of pharmacokinetics, drug metabolism and transport, pharmacogenetics, assessment of drug effects, drug therapy in special populations, and drug discovery and development.

Course objective

- Explain the bases for classification of major drugs groups
- Describe the mechanism of actions of major drugs groups
- Explain the side effects of major drugs groups
- Demonstrate the potential clinical applications of various drugs groups

Course outcome

- By the end of this course the students should
- Understand the major concepts of pharmacokinetics and pharmacodynamics
- Be able to list the major drugs groups
    - Chemotherapeutic drugs
    - Endocrine drugs
    - GIT drugs
    - Drugs for blood diseases
    - Anti-inflammatory drugs
- Describe the mechanism of action of the above mentioned main drugs groups
- Explain the main side effects of the above mentioned major drugs groups
- Demonstrate the clinical application of the above mentioned drug groups

Pathology II *

Course Code: MEDC 3422
Study Hours: Four Credit hours (64 hours)

Course description:
This course will continue the study of disease and dysfunction. Course concepts will focus on the cause, development and progress of disease, and how the body is affected. The pathologies of the renal, gastrointestinal, , liver and biliary system, pancreas, male genital , female genital, endocrine system, bones and joints, skeletal muscle and nervous system will be covered.
This course also provides a basic understanding of diagnostic laboratory evaluation and of the relationship between laboratory and morphological changes in diseases states and increases the awareness of the role of the autopsy in medicine.

Content of Pathology II course

The kidney and its collecting system pathology

- Clinical manifestations of renal diseases
- Diseases affecting tubules and interstitium
- Diseases involving blood vessels
- Cystic diseases of the kidney
- Urinary outflow obstruction
- Tumors

The oral cavity and the gastrointestinal tract pathology

- The oral cavity
- Ulcerative and inflammatory lesions
- Leukoplakia and erythroplakia
- Cancers of the oral cavity and tongue
- Salivary gland diseases
- Esophagus
- Stomach
- Small and large intestines (developmental anomalies, vascular disorders, colonic diverticulosis, bowel obstruction , enterocolitis , inflammatory bowel disease and tumors

The liver, gallbladder, and biliary tract

- Infectious and inflammatory disorders
- Alcohol- and drug-induced liver disease
- Metabolic and inherited liver disease
- Diseases of the intrahepatic biliary tract
- Circulatory disorders
- Tumors and hepatic nodules
- Disorders of the gallbladder and the extrahepatic biliary tract

The pancreas
- Congenital anomalies
- Pancreatitis
- Pancreatic neoplasms

The male genital system
- Penis pathology
- Scrotum, testis, and epididymis pathology
- Prostate pathology
- Sexually transmitted diseases (stds)

The female genital system and breast
- Vulva pathology
- Vagina pathology
- Cervix pathology
- Uterus pathology
- Ovarian pathology
- Breast pathology

The endocrine system
- Pituitary gland pathology
- Thyroid gland pathology
- Parathyroid gland pathology
- Adrenal gland pathology
- Pancreatic pathology
- Multiple endocrine neoplasia syndromes

The hematopoietic and lymphoid systems
- Red cell disorders
- White cell disorders
- Bleeding disorders
- Disorders that affect the spleen and thymus

The musculoskeletal system pathology
- Bone pathology
- Joint pathology
- Skeletal muscle pathology
- Soft tissue tumors

The skin pathology
- Acute inflammatory dermatoses
- Chronic inflammatory dermatoses
- Infectious dermatoses
- Blistering (bullous) disorders
- Tumors

The nervous system
- Patterns of injury in the nervous system
- Cerebral edema, herniation, and hydrocephalus
- Cerebrovascular diseases
- Central nervous system trauma

- Congenital malformations and perinatal brain injury
- Infections of the nervous system
- Tumors
- Primary diseases of myelin
- Acquired metabolic and toxic disturbances
- Degenerative diseases and dementias
- Diseases of the peripheral nervous system
- Familial tumor syndromes

- **Clinical Pathology & Laboratory medicine:** Throughout the course we introduce and integrate laboratory data that are frequently used in clinical medicine.

Course Objectives

- Describe the different disease processes affecting the different body systems including the cause, pathogenesis, morphologic changes and clinical significance
- Continue to learn the pathophysiology of disease
- Interpret signs and symptoms elicited in a patient's history and create a differential diagnosis
- Interpret laboratory data
- Anticipate the natural course of disease
- Develop sufficient knowledge of gross pathology and histopathology
- Develop a basic understanding of diagnostic laboratory evaluation and of the relationship between laboratory and morphological changes in diseases states.

Learning Outcomes

By the end of the course the student will be able to

- Demonstrate applied knowledge of Pathology, by describing the four aspects of the major disease processes covered in the course:
  - Cause (etiology).
  - Mechanisms of development (pathogenesis).
  - Structural alterations induced in the cells and organs (morphologic changes).
  - Functional consequences of the morphologic changes (clinical significance)
- Develop skills in self-directed learning, problem solving, critical reasoning, presenting data, and intellectual team work.
- Relate basic science knowledge to clinical medicine.
- Read and assess with critical intelligence the current medical literature to facilitate life-long learning.

Evaluation:

- Attendance 5%
- Quizzes & Seminar 5%
- Mid-term written Exam 30%
- Final written Exam 60 %

Clinical Sciences

Introduction to Clinical Skills I ***

Course code: MEDC4401
Study hours: Four Credit hours (Total 120 hours)

COURSE DESCRIPTION:

This is an introductory course to bridge the students toward clinical skills. It is a transition period for students from the basic medical sciences to clinical medicine. Students are introduced to patients and exposed to hospital environment under direct supervision of specialists focusing on clinical skills performance .

Contents:
Vital signs : Blood pressure, respiratory rate, Temperature, Pulse
Drug administration : enteral and topical, subcutaneous , Intramuscular, Intradermal, IV cannula
First Aid : Choking, Drowning, Primary survey, Burns, Heat stroke, Electrical shock Bites, Epistaxis

How to wear sterile gloves
Dressing
Soft tissue injury

Objectives :

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a focused history from patients.
3. Perform common, important interventions on patients.
4. Provide patient education for performed procedure and its importance.

Learning Outcomes
On completion of this course, the student will be able to:

1. Understand how to recognize the sick medical patient and how to Perform common, important interventions on patients.
2. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

EVALUATION:

1- Attendance: 5%
Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very

reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Quizzes 5%

3- Log Book: 5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

4- Objective Structured Clinical Examination (OSCE) 25%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations (usually 4 to 5 stations in majors) on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly.
OSCE stations Include:

- Clinical Skill performance e.g IV line insertion, blood withdrawal, Arterial blood gas withdrawal, Suturing, Lumber Puncture, chest tube insertion,.. etc
- Communication with patients (Patient Education) e.g education about how to give insulin injections, or how to use inhalers, also How to Break Bad News for a patient .. etc

5- Static OSCE Exam 10%

6- Multiple Choice Questions Exam: 50%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Introduction to clinical skills II ***

Course code : MEDC 4402
Study hours: Four credit hours (Total 120 hours)

Course Description:

This is an introductory course in both internal medicine and general surgery. It is a transition period for students from the basic medical sciences to clinical medicine. Students are introduced to patients and exposed to hospital environment under direct supervision of specialists in medicine and surgery Emphasis is given to approach to patients, history taking and clinical examination.

Contents:

- General Approach to the Medical and Surgical Patients
- Communication with Patients
- Complete History Taking
- General Examination
- Gastrointestinal System History and Physical Examination
- Respiratory System History and Physical Examination
- Cardiovascular System History and Physical Examination
- Central and peripheral nervous System History and Physical Examination
- Thyroid History and Physical Examination
- Examination of Hernias
- Musculoskeletal System History and Physical Examination

Objectives:

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused medical history from patients.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.
5. Recognize common and important abnormal clinical findings.
6. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick patient and how to Communicate with patient, obtain complete history and perform complete physical examination from the patient.

2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Developing a problem list and differential diagnosis regarding the history and the physical examination findings.

EVALUATION:

1- Attendance: 5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 5%

3- Quizzes 5%

4- Log Book: 5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Static OSCE Exam 20%

6- Multiple Choice Questions Exam: 60%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Public health ***

Course code : MEDC 4300
Study hours: Three credit hours (Total 90 hours)

Course description:
This course focuses on dimensions of personal and environmental health and their relationship to economic, psycho-social and political factors, measurements and indices of community health status. Theoretical frame work for viewing organizational issues in the delivery of health services are discussed. The training involves variety of activities including lectures, field trips and primary health care centers visits.

CONTENTS:

- Historical Context of Public Health.
- Determinants of Health (Concepts of Health, Vulnerable Populations, Disease Prevention, and Health Promotion Strategies).
- Measurements of Health and Disease in a Population.
- Epidemiology.
- Association & causation
- Surveillance
- Types of Study Design.
- Methods of Analysis (Distributions, Data Analysis, Common Statistical Tests, Causation, Assessing Evidence).
- Health Services Research (Continuous Quality Improvement and Cost Analysis).
- Outbreak of Infectious Diseases.
- Reportable Diseases
- Environmental Health (Environmental Health Jurisdiction, Risk Assessment, Air, Water, Soil, Food, and Heavy Metal Toxicity)
- Occupational Health
- School health
- Community Mental Health
- Roles and settings for community health medicine practice
- Public health and community medicine assessment and diagnosis.

Objectives :

Objectives include training the students to:

1. Demonstrate basic understanding of common public health issues
2. Define concept of PHC
3. Describe elements of PHC services / activities
4. Develop knowledge , skills, and attitudes to practice the basic principles of prevention.
5. Understand health planning for communities and populations

Learning Outcomes :

All students will be able to:

1- Demonstrate a thorough understanding and comprehension of public health by Explaining the history and philosophy of public health as well as its core values, concepts, and functions across the globe and in society
2- Demonstrate problem solving skills by applying, analyzing, and synthesizing content knowledge in public health .
3- Identify and interpret the components of the definition of Epidemiology.
4- Explain the ultimate aims of, and the scope of epidemiology
5- Estimate, apply, and interpret correctly epidemiological measures of disease frequency Including incidence and prevalence.
6- Demonstrate use of research tools and analytical methods to critically analyze, monitor and assess the health status of populations.
7- Identify, explain, and utilize the basic concepts, methods, and tools of public health data collection, use, and analysis and why evidence-based approaches are an essential part of public health practice
8- Describe the underlying science of human health and disease including opportunities for promoting and protecting health across the life course.
9- Identify and explain the socio-economic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities

EVALUATION:

The students in these courses are grading using many different methods including:

1. **MCQ exams:**
   These are multiple choice questions exams. They aim to test the students theoretical knowledge, and analytical skills. They are usually 60 in number and are held at the end of the academic year in May each year.
2. **Students' seminars and assignments :**
   The students are expected to show evidence of their genuine interest in the course. This can be tested by ordering the student to prepare powerpoint presentations for selected topics in public health, also, prepare a health promotion plan for a particular issue.
3. **Attendance:**
   Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the course activities will not be allowed to enter the final exam and should be marked as failed.

Psychiatry I & II ***

Course code : MEDC 4404+ MEDC 4204
Study hours: Six credit hours (Total 180 hours)

COURSE DESCRIPTION:

The 5-weeks course is designed to teach the diagnosis of basic psychiatric disorders e.g. Depression, sleep and eating disorders, organic disorders, schizophrenia, psychoactive substances abuse, child and adolescent mental disorders as well as the therapeutic procedures available to non- psychiatrists. The course includes the assessment of the patient's mental state and psychiatric examination. A substantial part of the course teaching students communication skills with somatic and psychiatric patients. Special attention is paid to the proper doctor-patient relationship. Furthermore, the course underlines the significance of clinical psychology in diagnosis and therapy.

CONTENTS:

- Introduction to Psychiatry.
- Psychiatric interview.
- Psychiatric assessment (MAA-GAF).
- Mental state examination.
- Depression and related Mood disorders.
- Schizophrenia and related Psychotic disorders.
- Anxiety and related disorders.
- Somatic Symptom and Related Disorders.
- Eating disorders.
- Factitious and related disorders.
- Sexual and gender identity disorders.
- Personality disorders.
- Sleep disorders.
- Amnestic And Dissociative disorders.
- Substance-Related and Addictive Disorders.
- Psychopharmacology.

Objectives :

After finishing this course, the students are expected to know the main diseases related to the Psychiatry, their presentations, diagnostic methods and management options. This level of their knowledge should be at least suitable for the work as a junior house officer or a general practitioner.

Some of the objectives include training the students to:

1. Show theoretical knowledge of the clinical presentation, epidemiology, etiology, diagnosis, differential (including medical), and assessment/management of different Psychiatric disorders.

2. Employ clinical techniques and analytical skills so as to be able to
- Conduct a general interview.
- Perform a mental status examination.
- Assess different aspects of a patient with psychiatric illness.
- Propose a preliminary understanding of a patient in a biopsychosocial model.
- Demonstrate proficiency in documentation and communication in psychiatry.

3. Practice an appropriate and non-stigmatizing behavior and support towards those experiencing mental illness in demonstrating Knowledge:
- Of indications for referral to psychiatry.
- Of legal issues, the Mental Health Act and when to raise it.
- Of the determinants of health and outcomes in mental illness.
- Of the impact of stigma of mental illness upon patients, and society, and the role of advocacy.

LEARNING OUTCOMES :

By finishing the course students should be able to:

1. Take psychiatric history and do mental state examination on patients .
2. Make differential diagnosis .
3. Know general information about management and prognosis .
4. Council patients and families about their mental disorder .

EVALUATION:

The students in these courses are grading using many different methods including:

1. **MCQ exams:**
   These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 50 in number and are held at the end of the academic year in May each year.

2. **Logbook:**
   All students must be able to perform well-structured client interview including; history taking, mental state examination, physical examinations (to rule out organic diseases), case presentation and case sheet preparation, and routine and basic Psychiatric interventions. The acquisition of these skills must be certified, and monitored by a physician.

3. **Case sheet preparation and discussion :**
   The students are expected to show evidence of their genuine interest in the course. This can be achieved by ordering the students to do case sheet preparation to be presented and discussed with course instructors by the end the of the course.

4. **Attendance:**
   Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

General Surgery Junior I & II ***

Course code : MEDC 4621+ MEDC 4622
Study hours: Twelve credit hours (Total 360 hours)

Course description:

The primary goal of the junior clerkship is to expose students to the broad field of general surgery. The student is expected to be familiar with the diagnosis of surgical diseases; understand pathophysiology; enumerate treatment options, including indications for operative procedure and prevention of disease; and perform basic surgical skills.

The student is provided with both didactic instruction and hands-on clinical training

Contents:

- Introduction to General surgery
- Wound care
- Trauma and Critical Care
- Fluids, Electrolytes, and Nutrition in surgical patient
- Burns
- Acute Abdomen
- Gastrointestinal Surgery
  - The Esophagus
  - The Stomach
  - Small Bowel
  - Colon, Rectum, and Anal Canal
  - The Appendix
- Endocrine
- Liver, biliary tract and Pancreas
- Spleen
- Breast

Objectives:

Students is expected to :

1. Obtain a complete and focused surgical history from patients.
2. Perform physical examinations on patients.
3. Communicate with patients and their families effectively.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.
9. Recognize life threatening emergencies and initiate appropriate primary intervention.

10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the surgical patient and how to diagnose and treat common acute abdomen cases.
2. Be knowledgeable of the status of assigned patients
3. Obtain a complete and focused surgical history from patients.
4. Perform physical examinations on patients.
5. Communicate with patients and their families effectively.
6. Documentation of patient health information in a concise, complete way.
7. Order appropriate investigations and interpret its results for the common or important diseases
8. Recognize common and important abnormal clinical findings.
9. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
10. Provide patient education for their health problems

Evaluation:

1- Attendance: 2.5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

3- Quizzes 2.5%

4- Log Book: 2.5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Long Case Examination: 10%

The Long Case Examination is a component of majors evaluation, in which the student assesses a new patient (complete history taking and examination), then presents the case to the examiner followed by some questioning of the findings presented and about the case diagnosis and management. The student will be allowed to approach the case for around 1 hour, the degree of sophistication will be as expected for level of 4th year medical students.

The mark will depend on checklist to assess main items that student should cover depending on his/her level.

6- Objective Structured Clinical Examination (OSCE) 20%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations (usually 4 to 5 stations in majors) on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly.
OSCE stations Include:

- Physical examination e.g Abdomen Examination, Heart Examination .. etc
- Focused History Taking e.g History talking from patient with red urine or vomiting .. etc
- Clinical Skill performance e.g IV line insertion, blood withdrawal, Arterial blood gas withdrawal, Suturing, Lumber Puncture, chest tube insertion, episiotomy .. etc
- Communication with patients (Patient Education) e.g education about how to give insulin injections, or how to use inhalers, also How to Break Bad News for a patient .. etc

7- Static OSCE Exam 10%

8- Multiple Choice Questions Exam: 50%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Internal Medicine Junior I & II ***

Course code : MEDC 4631+ MEDC 4632
Study hours: Twelve credit hours (Total 360 hours)

Course description:

This course covers the theoretical and practical knowledge of internal medicine which enables students to take case history and perform complete clinical examination. The course also teaches differential diagnosis with regard to clinical and laboratory procedures. Special attention is paid to the etiology and the pathogenesis of disease. After accomplishing the course students should be able to plan the diagnostic and therapeutic procedures and be aware of the prophylaxis and prevention of the most common disorders. The course also includes strategies most frequently applied in acute states. Furthermore, students learn how to deal with patients with chronic diseases, especially with those in the older age.

Contents:

- General Approach to the Medical Patient
- Communication with Patients
- Medical Respiratory Diseases
- Medical Cardiac Diseases
- Medical Gastrointestinal and Liver Diseases
- Medical Infectious Diseases
- Medical Nephrology and urological Diseases
- Medical Fluid, electrolytes, blood gas Diseases
- Medical Gastrointestinal Diseases
- Medical Neurological Diseases
- Medical Endocrine Diseases
- Medical Rheumatology Diseases
- Medical Hematology and Oncology Diseases

Objectives :

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused medical history from patients.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.

9. Recognize life threatening emergencies and initiate appropriate primary intervention.
10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick medical patient and how to diagnose and treat common emergency and nonemergency medical presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1- Attendance: 2.5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

3- Quizzes 2.5%

4- Log Book: 2.5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Long Case Examination: 10%

The Long Case Examination is a component of majors evaluation, in which the student assesses a new patient (complete history taking and examination), then presents the case to the examiner followed by some questioning of the findings presented and about the case diagnosis and management. The student will be allowed to approach the case for around 1 hour, the degree of sophistication will be as expected for level of 4th year medical students.

The mark will depend on checklist to assess main items that student should cover depending on his/her level.

6- Objective Structured Clinical Examination (OSCE) 20%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the

stations, each student will complete all the stations (usually 4 to 5 stations in majors) on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly.
OSCE stations Include:

- Physical examination e.g Abdomen Examination, Heart Examination .. etc
- Focused History Taking e.g History talking from patient with red urine or vomiting .. etc
- Clinical Skill performance e.g IV line insertion, blood withdrawal, Arterial blood gas withdrawal, Suturing, Lumber Puncture, chest tube insertion, episiotomy .. etc
- Communication with patients (Patient Education) e.g education about how to give insulin injections, or how to use inhalers, also How to Break Bad News for a patient .. etc

7- Static OSCE Exam 10%

8- Multiple Choice Questions Exam: 50%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Rehabilitation Medicine ***

Course code : MEDC 4205
Study hours: Two credit hours (Total 60 hours)

Course Description:
This course provides students with both theoretical and practical knowledge regarding the most important aspects of medical rehabilitation including both managerial and clinical skills.

Contents:

1. **Theoretical Lectures** in this module include:

    1.Historical background on Rehabilitation medicine, WHO definitions of impairment, disability and handicap with focus to increase awareness of medical, physical, psycho-social and vocational impact of disabling illnesses.
    2. Comprehensive history taking & assessment for patients with neurological or functional disability including techniques of clinical assessment of consciousness, cognition, communication, feeding, sphincter function and mobility;
    3. Stroke pathology, management and rehabilitation and future prevention.
    4. Head injurypathology, management and rehabilitation and future prevention.
    5. Geriatric Changes & Rehabilitation and Reconditioning
    6. Complication in the bed-ridden, management and rehabilitation
    7. Palliative Medicine

2. Clinical Training:

The student will be attending in an inpatient rehabilitation hospital and will be divided into group to rotate with rehabilitation teamsin different departments including medical department, Physiotherapy, occupational therapy, rehabilitation nursing, pscho-social department.

During their rotations, the students will learn the comprehensive, management of adults undergoing rehabilitation (interdisciplinary, multidisciplinary).

The training course put emphasis on thorough evaluation and comprehensive management of patients with neurological or musculoskeletal disorders requiring rehabilitation.
It also highlights physiological effects, indications and contraindications of different therapeutic modalities and their application to common musculoskeletal disorders.

Objectives:

Students should learn how to :

1. Communicate with patients and their families effectively.

2. Obtain a complete and/or focused medical history from patients with neurological or musculoskeletal disorders requiring rehabilitation..
3. Perform physical examinations on same patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient and patients family education for their health problems.
9. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to deal with rehabilitation patient and how to diagnose and treat common emergency and nonemergency medical problems in them.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making regarding patients with neurological or musculoskeletal disorders requiring rehabilitation..
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1. Attendance and discussions
2. Evidence-based Rehabilitation presentations
3. Final Exam

Medical Imaging ***

Course code: MEDC 4211

Study hours: Two credit hours (Total 60 hours)

This 3 week course is designed to familiarize students in the interpretation of medical images including chest radiographs, abdominal films and bone film in addition to introduction to ultrasound, C-T scan and MRI. Emphasis is given on case studies and on correlation between radiographic findings with clinical data. Students also become acquainted with the working of the radiology department and observe performance of variety of diagnostic procedures.

Method of Instruction.

- Tour in different sections of the radiology department.
- Seminars.
- Lectures.
- Practical sessions

General Topics Include :

- **Introduction to Radiology**
- **Imaging Modalities**

Plain x-rays.
Fluoroscopy.
Ultrasound.
Computed tomogaphy(CT).
Magnetic resonance imaging(MRI).
Nuclear medicine (nm)

CONTRAST MEDIA

Arteriography.
Venography.
Myelogaphy.
Cholangiography.
Hystrosapingiography (HSG).
Arthography.
Sialography.

- **ALLERGIC REACTION OF Contrast Media**

Minor reactions.
Intermediate reactions.
Severe reactions.

- **RADIATION PROTECTION**

DOSES.
PREGNANCY.

CLEAR REQUESTS.
DISCUSSIONS.
REPEAT CXR.
US&MRI

- **CARDIOVASCULAR INVESTIGATIONS**

PLAIN FILMS
ULTRASOUND
ISOTOPE SCANNING
CT
MRI
ANGIOGRAPHY

- **RESPIRATORY TRACT INVESTIGATIONS**

PLAIN FILMS
CT
MRI
US
BIOPSY
PULMONARY ANGIOGRAPHY
ISOTPES

- **GASTROINTESTINAL TRACT RADIOLOGY**

PLAIN FILMS
Barium studies
ORAL CHOLECYSTOGRAM
OPERATIVE CHOLANGIOGRAM
T-TUBE CHOLANGIOGRAM
TRANSHEPATIC CHOLANGIOGRAM
An endoscopic retrograde cholangiopancreatogram ERCP
US
ISOTOPE SCAN (HIDA SCAN)
MRI
ANGIOGRAPHY

- **IMAGING OF Genitourinary SYSTEM**

A kidney, ureter, and bladder (*KUB*) X-ray
RETROGRADE PYELOGRAPHY
PERCUTANEOUS NEPHROSTOMY
A *micturating cysto-urethrogram* (MCU)
URETHROGRAM
US
CT
ISOTOPE: STATIC and DYNAMIC

ANGIOGRAPHY
MRI

- **MUSCULOSKELETAL RADIOLOGY**

X-ray
ULTRASOUND
CT/MRI
ISOTOPE BONE SCAN

- **NEURORADIOLOGY**

PLAIN FILMS
US
CT
MRI
ANGIOGRAPHY : DSA&MRA
MYELOGRAPHY
ISOTOPE SCANS

Objectives :

- Familiarize students with the interpretation of medical images including chest radiographs, abdominal films and bone film.
- familiarize students with introduction to ultrasound, CT scan and MRI
- Recognize common and important abnormal clinical findings.
- Put on correlation between radiographic findings with clinical data.
- Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
- condition

Learning Outcomes

On completion of this course, the student will be able to:

- Students also become acquainted with the working of the radiology department and observe performance of variety of diagnostic procedures.
- Order appropriate investigations and interpret its results for the common or important diseases.
- Recognize common and important abnormal clinical findings.
- Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
- Working with different teams each according to their subspecialty.

Evaluation:

1. Attendance and discussions.
2. Quizzes.
3. OSCE Static.
4. Logbook.
5. Final Exam.

Forensic Medicine and Toxicology ***

Course code: MEDC 5205

Study hours: Two credit hours (Total 60 hours)

Course description:

- This course deals with the effects of disease, particularly its role in suspicious death, and examines the effects of various external agents (e.g. firearms, poisons blunt trauma, etc.) on the human body. Also the course will discuss situations requiring notification of the coroner, autopsy consents, death certification and steps taken by a medical expert in preparing for court.

Contents:

- Introduction for medical low.
- The autopsy report.
- Sign of death
- Sudden unexpected death
- Injuries
- Head injury
- Firearm Injury
- Asphyxia
- Sexual offenses
- General toxicology

Objectives :

- Communicate with patients and their families effectively.
- Perform physical examinations on patients.
- Recognize common and important abnormal clinical findings.
- Examines the effects of various external agents (e.g. firearms, poisons blunt trauma, etc.) on the human body.
- Steps taken by a medical expert in preparing for court.

Learning Outcomes

On completion of this course, the student will be able to:

- Deals with the effects of disease, particularly its role in suspicious death.
- examines the effects of various external agents on the human body
- Recognize common and important abnormal clinical findings.
- Discuss situations requiring notification of the coroner, autopsy consents, death certification.
- Able to write medical Report.

Evaluation:

1. Attendance and discussions.
2. Logbook.
3. Medical Report.
4. Students' seminars.
5. Final Exam.

Cardiology and Cardiac Surgery ***

Course code: MEDC 5211

Study hours: Two credit hours (Total 60 hours)

Course Description:

This course introduces the student to routine and emergent cardiovascular conditions commonly encountered in the primary care setting, with emphasis on clinical manifestations, assessment and appropriate therapeutic measures. The training involves working in the cardiology ward, catheterization lab., echocardiography training and dealing with cardiac emergencies.

The course is also designed to provide students with an overview of clinical cardiac surgery. It also acquaints with diagnosis, operative treatment and post–operative care of cardiac surgical patients.

Contents:

- General Approach to the cardiovascular Patient
- Communication with cardiovascular Patients
- Acute Coronary Syndrome
- Ischemic Heart Disease
- Hypertention
- Valvular Heart Diseases
- Cardiomyopathies
- Arrythmias
- ECG reading
- Cardiovascular Emergencies
- Pericardial Diseases
- Infective Endocarditis
- Myocarditis

Objectives :

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused cardiovascular history from patients.
3. Perform cardiovascular physical examination on patients.
4. Order appropriate investigations and interpret its results for the common or important diseases
5. Recognize common and important abnormal clinical findings
6. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations

7. Provide patient education for their health problems
8. Recognize life threatening cardiovascular emergencies and initiate appropriate primary intervention
9. Continually reevaluate management plans based on the progress of the patient's condition

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick cardiovascular patient and how to diagnose and treat common cardiovascular emergency and nonemergency presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1- Attendance: 5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History and students seminars 2.5%

3- Quizzes 2.5%

4- Log Book: 5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Objective Structured Clinical Examination (OSCE) 15%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly. OSCE stations Include:

Cardiovascular Physical examination

- Cardiovascular Focused History Taking
- Communication with patients

6- Static OSCE Exam 10%

7- Multiple Choice Questions Exam: 60%

These are multiple choice questions exams. They aim to test the student's theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Orthopaedics ***

Course code: MEDC 5302

Study hours: Three credit hours (Total 90 hours)

Course description:

This course concentrates on the care and treatment of the orthopedic patients. It focuses on the establishment of diagnosis and management of orthopedic conditions commonly encountered in a primary care setting. Orthopedic physical examination and casting skills are included. Students also learn how to deal with trauma patients. The training involves working in the orthopaedics ward, operating theatres, outpatient clinics and emergency department.

Contents:

- General Approach to the Orthopedic Patient
- Communication with Orthopedic Patients
- Orthopedic Emergencies
- Anatomy of Musculoskeletal system
- Fractures and dislocations
- Knee Joint Diseases
- Ankle Joint Diseases
- Shoulder Joint Diseases
- Hip Joint Diseases
- Common pediatric orthopedic problems
- Other Joint Diseases

Objectives :

Students should be able to:

1. Communicate with Orthopedic patients and their families effectively.
2. Obtain a complete and/or focused Orthopedic history from patients.
3. Perform Orthopedic physical examination on patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations
8. Provide patient education for their health problems
9. Recognize life threatening emergencies and initiate appropriate primary intervention
10. Continually reevaluate management plans based on the progress of the patient's condition

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick medical patient and how to diagnose and treat common emergency and nonemergency medical presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1- Attendance: 5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

3- Quizzes 2.5%

4- Log Book: 5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Objective Structured Clinical Examination (OSCE) 15%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations () on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly.

OSCE stations Include:

- History and Physical examination e.g Knee joint
- Communication with patients

6- Static OSCE Exam 10%

7- Multiple Choice Questions Exam: 60%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Urology ***

Course code: MEDC 5403

Study hours: 4 credit hours (Total 120 hours)

COURSE DESCRIPTION:
This course aims to ensure that the candidate understands the skills and knowledge needed to care for patients with common urological problems.
It will also look at clinical decision making in the acute medical context. Clinical decision-making is an important but often neglected part of health care provision today.

Contents:

- Anatomy & physiology of the Genitourinary Tract
- Symptoms and physical Examination of Disorders of the Genitourinary Tract
- Urologic laboratory & radiology and urodynamic Studies
- Instrumentation in Urology (upper – lower)
- UTI & STDs and VUR
- Infections of male Genitalia [Orchitis , Prostatitis]
- Urine Incontinence diagnosis and management
- Neurogenic Bladder disorders
- Urolithiasis
- Pharmacology of the Lower Urinary Tract & BPH.
- Disorders of the Penis & Urethra.
- Cancer in Urology
- Pediatric urology
- Urologic Trauma
- Male Sexual Dysfunction & Priapism
- Male Infertility.

- **Objectives :**

1. Obtain a complete and/or focused medical history from patients.
2. Perform physical examinations on patients.
3. Order appropriate investigations and interpret its results for the common or important diseases
4. Recognize common and important abnormal clinical findings.
5. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
6. Recognize life-threatening emergencies and initiate appropriate primary intervention.
7. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes
On completion of this course, the student will be able to:

1. Understand how to deal with the patient and how to diagnose and treat common urological presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision-making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1. Attendance and discussions
2. log book and history
3. Static
4. Final Exam

Pediatrics Junior I & II ***

Course code : MEDC 5441 + MEDC 5442
Study hours: Eight credit hours (240 hours)

COURSE DESCRIPTION:

This course reviews the normal growth and development of the child and covers the fundamental aspects of common childhood disorders and diseases. Instruction is also provided in the areas of physical assessment of neonatal and pediatric and adolescent patients, preventive medicine during childhood, congenital disorders, common psychological disorders relating to pediatrics and adolescent medicine, and pediatric drug therapy

The curriculum of the course includes taking the case history from the child and the family as well as performing clinical examination taking into account all the differences of the child's development and physiology. Furthermore the course teaches how to assess completely the child's general state and to plan the diagnostic and therapeutic procedures.

CONTENTS:

- General Approach to the Pediatric Patient.
- Developmental Milestones.
- Nutrition in Pediatrics and its Disorders.
- Pediatric Genetic Diseases.
- Pediatric Respiratory Diseases.
- Pediatric Cardiac Diseases.
- Infectious Diarrheal Disease and Dehydration in pediatrics.
- Pediatric Genitourinary and Renal Tract Diseases.
- Pediatric Hematological Diseases.
- Pediatric Infectious Diseases.
- Pediatric Rheumatology Diseases .
- Pediatric Endocrine Diseases.
- Diseases in Neonates.
- Epilepsy in Pediatrics.

OBJECTIVES :

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused pediatric medical history.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.

7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.
9. Recognize life threatening emergencies and initiate appropriate primary intervention.
10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick pediatric patient and how to diagnose and treat common emergency and nonemergency medical presentations in pediatric age.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1- Attendance: 2.5%
Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%
Students are asked to present a number of cases written in a complete way including the history taken from the patient, physical examination, differential diagnosis and the investigations done to the patient.

3- Quizes 2.5%

4- Log Book: 2.5%
All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Long Case Examination: 10%
The Long Case Examination is a component of majors evaluation, in which the student assesses a new patient (complete history taking and examination), then presents the case to the examiner followed by some questioning of the findings presented and about the case diagnosis and management. The student will be allowed to approach the case for around 1 hour, the degree of sophistication will be as expected for level of 5th year medical students. The exam is held at the end of the course.

The mark will depend on checklist to assess main items that student should cover depending on his/her level.

6- Objective Structured Clinical Examination (OSCE) 20%

An OSCE usually comprises a circuit of short around 8–10 minutes stations held at the end of the course, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations (usually 4 to 5 stations in majors) on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly.
OSCE stations Include:
Physical examination e.g Abdomen Examination, Heart Examination .. etc

- Focused History Taking e.g History talking from patient with red urine or vomiting, diarrhea, seizure .. etc
- Clinical Skill performance e.g, Lumber Puncture, Growth parameters measurement .. etc
- Communication with patients (Patient Education) e.g education about breast feeding and weaning, how to use inhalers, how to deal with dehydration .. etc

7- Static OSCE Exam 10%

8- Multiple Choice Questions Exam: 50%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Obstetrics & Gynecology Junior I & II ***

Course code: MEDC 5451 + MEDC 5452
Study hours: Eigh credit hours **(240 hours)**

Course description:
This course aims to ensure that the candidate understands the skills and knowledge needed to care for patients with common gynecological problems, the well-woman examination and pregnancy from prenatal care through delivery and postpartum.
It will also look at clinical decision making in the acute medical context. Clinical decision-making is an important but often neglected part of health care provision today.

Contents:

- Approach to the gynecologic patient.
- Symptoms of gynecologic disorders
- Female reproductive endocrinology
- Menstrual abnormalities
- Menopause
- Vaginitis, cervicitis, and pelvic inflammatory disease
- Endometriosis, adenomyosis, and uterine fibroid
- Infertility
- Family planning
- Prenatal genetic counseling and evaluation
- Approach to the pregnant woman and prenatal care
- Symptoms during pregnancy
- Normal labor and delivery
- Drugs in pregnancy
- Pregnancy complicated by disease
- Abnormalities of pregnancy
- Abnormalities and complication of labor and delivery
- Postpartum care and associated disorders

Objectives:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused medical history from patients.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.

8. Provide patient education for their health problems.
9. Recognize life threatening emergencies and initiate appropriate primary intervention.
10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to deal with the pregnant and non-pregnant women and how to diagnose and treat common obstetric and gynecological presentations.
2. Understand the theory behind normal and abnormal labor and understand how to continue patient care afterwards.
3. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
4. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1. Attendance and discussions
2. Long case exam
3. Quizzes, log book, and history
4. OSCE
5. Static
6. Final Exam

Ophthalmology ***

Course code: MEDC 5206

Study hours: Two credit hours (Total 60 hours)

Course description:

This course aims to ensure that the candidate understands the skills and knowledge needed to care for patients with common ophthalmological problems.
It will also look at clinical decision making in the acute medical context. Clinical decision-making is an important but often neglected part of health care provision today.

Contents:

- Ocular anatomy and physiology
- Ocular history and examination
- Cataract
- Visual pathway
- Clinical optics
- Uveitis
- Ocular trauma
- Strabismus
- Conjunctivitis and lid disease
- Pupil
- Ocular pharmacology
- Red eye
- Glaucoma
- Cornea and sclera
- Lacrimal system and orbit
- Retinal vascular diseases
- Ocular manifestation of systemic disease
- Retina and choroid
- Refractive error and practice

Objectives :

1. Obtain a complete and/or focused medical history from patients.
2. Perform physical examinations especially direct ophthalmoscope on patients.
3. Order appropriate investigations and interpret its results for the common or important diseases
4. Recognize common and important abnormal clinical findings.
5. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
6. Recognize life-threatening emergencies and initiate appropriate primary intervention.

7. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to deal with the patient and how to diagnose and treat common ophthalmological presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision-making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1. Attendance and discussions
2. log book and history
3. Static
4. Final Exam

E.N.T ***

Course code: MEDC 5207

Study hours: Two credit hours **(Total 60 hours)**

COURSE DESCRIPTION:

- The course covers basic knowledge of the most common diseases of the larynx, throat, nose and ear. Special attention is paid to proper examination and differential diagnosis. Providing experience in the use of basic instruments in otolaryngology. The training involves working in the E.N.T ward, operating theatres, daycare surgeries, outpatient clinics and dealing with the emergency cases related to the E.N.T.

Contents:

- Introduction anatomy.
- History and examination.
- External ear diseases.
- Middle ear diseases.
- inner ear diseases.
- pharynx diseases.
- upper Respiratory airway diseases.
- neck masses.
- paranasal sinus diseases.

Objectives:

- The students are expected to know the main diseases related to the ENT, their presentations, diagnostic methods and management options. Order appropriate investigations and interpret its results for the common or important diseases.
- Recognize common and important abnormal clinical findings.
- Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
- Provide patient education for their health problems.
- Recognize life threatening emergencies and initiate appropriate primary intervention.
- Continually reevaluate management plans based on the progress of the patient's condition

Learning Outcomes
On completion of this course, the student will be able to:

- Communicate with patients and their families effectively.
- Obtain a complete and/or focused medical history from patients.
- Perform physical examinations on patients.

- Order appropriate investigations and interpret its results for the common or important diseases.
- Recognize common and important abnormal clinical findings.
- Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.

Evaluation:

1. Attendance and discussions.
2. Quizzes.
3. OSCE Static.
4. Logbook.
5. History cases.
6. Final Exam.

Dermatology ***

Course code: MEDC 5208

Study hours: Two credit hours **(Total 60 hours)**

Course Description:

- This course is designed to teach the etiology, clinical picture, diagnostic and therapeutic procedures of skin diseases and sexually transmitted diseases (STD). The curriculum includes practical assessment of the most common dermatological changes, performing basic therapeutic procedures and collecting samples for laboratory tests. Emphasis is made on outpatient diagnosis and treatment of common skin conditions and the cutaneous manifestations of systemic diseases. Special attention is paid to the prophylaxis and prevention of skin diseases and STD. The training is focused on the dermatology outpatients clinics in different part of the city, in addition to the didactic lectures.

Contents:

- Skin structure and Skin lesions
- Bacterial infection and venereal diseases
- viral infection and Fungal diseases
- Parasitic infestation and Urticaria and angioedema Drug eruption
- Eczema
- Papulosquamous diseases
- Vitiligo
- Blistering dermatosis
- Disorders of skin appendages
- Genodermatoses
- Tumors of the skin

Objectives:

- The students are expected to know the main diseases related to the **Dermatology**, their presentations, diagnostic methods and management options. Order appropriate investigations and interpret its results for the common or important diseases.
- Recognize common and important abnormal clinical findings.
- Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
- Provide patient education for their health problems.
- Continually reevaluate management plans based on the progress of the patient's condition

Learning Outcomes
On completion of this course, the student will be able to:

- Students are expected to know the etiology, clinical picture, diagnostic and therapeutic procedures of skin diseases and sexually transmitted diseases (STD).
- performing basic therapeutic procedures and collecting samples for laboratory tests.
- expected to know diagnosis and treatment of common skin conditions and the cutaneous manifestations of systemic diseases.
- prophylaxis and prevention of skin diseases and STD.

Evaluation:

1. Attendance and discussions.
2. OSCE Static.
3. Logbook.
4. Final Exam.

Neurology & Neurosurgery ***

Course code: MEDC 5404

Study hours: Four credit hours (Total 120 hours)

Course description:
In this three-week neurology course, Students learn how to take history and perform medical examination and will be involved in the evaluation and treatment of neurological diseases. The instruction includes case discussions, seminars, and presentations, in addition to didactic lectures.

The course is also designed to provide students with an overview of clinical neurosurgery..

The emphasis is on applying knowledge gained in neuro-anatomy and neuro-physiology to clinical problem.

Contents:

- Approach to the neurologic patient
- Neurotransmission
- Brain functions
- Function And dysfunction of the cerebral lobes
- Movement and cerebellar disorders
- Cranial nerves and its abnormalities
- Peripheral nervous system and motor unit disorders
- Autonomic nervous system
- Stroke
- Coma And impaired consciousness
- Delirium and dementia
- Seizure disorders
- Headache
- Meningitis and related Central nervous system infection
- Demyelinating disorders
- Spinal cord disorders
- Intracranial and spinal tumor

Objectives :

After finishing this course, the students are expected to know the main diseases related to the subspecialty, their presentations, diagnostic methods and management options. The level of their knowledge should be at least suitable for the work as a junior house officer or a general practitioner.

In order to achieve that, the students should develop the theoretical knowledge, clinical techniques and analytical skills needed to pass this course

Some of the objectives include training the students to:

1- Order appropriate investigations and interpret its results for the common or important neurologic diseases.
2- Recognize common and important abnormal neurologic clinical findings.
3- Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
4- Provide patient education for their health problems.
5- Recognize life threatening emergencies and initiate appropriate primary intervention.
6- Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick neurologic patient and how to diagnose and treat common emergency medical presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety and Privacy May be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.
4. Communicate with patients and other colleagues.
5. Use information technology in learning and practice of medicine.
6. Develop the capacity of life-long self learning.

EVALUATION:

The students in these courses are grading using many different methods including:

1. **MCQ exams:**

   These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 50-60 in number and are held at the end of the academic year in May each year.

2. **Dynamic OSCE exams:**

   These are Objective Structured Clinical Examination exams. They aim to test the student clinical and practical skills. They involve varying number of stations; each aim to test a certain skill e.g. History taking, physical examination, communication skills, clinical skills.

3. **Static OSCE exams:**

   This exam consists of different number of photo slides that examines the students' skills in spot diagnosis and general management.

4. **Logbook:**

   All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5. **History cases and students' seminars:**

   The students are expected to show evidence of their genuine interest in the course. This can be tested using case presentations and short clinical seminars.

6. **Attendance:**

   Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

Elective Course ***

Course code : MEDC5400
Study Hours : Four Credit Hours (Total 120 Hours)

Course description:

This period offers the student an opportunity to complete an elective period of his choice (4 Weeks). The elective period is spent in a clinical area of interest to the student or a repeat area in which the student wishes to increase knowledge. The student selects an elective clinical area with the approval of the faculty advisor. The student develops an individualized learning contract which includes objectives for elective rotation and a method to demonstrate achievement of these objectives at the conclusion of the period.

Contents:
It depends on the subject of choice taken by the student, but generally speaking it will include the contents of the subject as mentioned in other course descriptions with all its practical contents.

Objectives :

Students should be able to do the followings regarding the student's subject of choice:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused medical history from patients.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.
9. Recognize life threatening emergencies and initiate appropriate primary intervention.
10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes
On completion of this students subject of choice, the student will be able to:

1. Understand how to recognize the sick patient and how to diagnose and treat common emergency and nonemergency medical presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

The Evaluation is done by the head of the department (Instructor) with only clear pass or fail as following :

	Fair	Good	Very good	Excellent
Attendance				
Effort \ Attitude				
Knowledge				
Skill level				
Problem solving				
Responsibility and patient care				
Relation with Doctors, Nurses and other staff				
Comment:…… …… ……				

Obstetrics & Gynecology Senior I & II ***

Course code: MEDC 6351+ MEDC 6352
Study hours: Six credit hours (total 180 hours)

Course Description:
This course aims to ensure that the candidate understands the skills and knowledge needed to care for patients with common gynecological problems, the well-woman examination and pregnancy from prenatal care through delivery and postpartum.
It will also look at clinical decision making in the acute medical context. Clinical decision-making is an important but often neglected part of health care provision today.
Contents:

- Approach to the gynecologic patient.
- Symptoms of gynecologic disorders
- Female reproductive endocrinology
- Menstrual abnormalities
- Menopause
- Vaginitis, cervicitis, and pelvic inflammatory disease
- Endometriosis, adenomyosis, and uterine fibroid
- Benign gynecologic lesions
- Pelvic relaxation syndromes
- Gynecologic tumors
- Infertility
- Family planning
- Prenatal genetic counseling and evaluation
- Approach to the pregnant woman and prenatal care
- Symptoms during pregnancy
- Normal labor and delivery
- Drugs in pregnancy
- Pregnancy complicated by disease
- Abnormalities of pregnancy
- Abnormalities and complication of labor and delivery
- Postpartum care and associated disorders

Objectives:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused medical history from patients.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.

5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.
9. Recognize life threatening emergencies and initiate appropriate primary intervention.
10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to deal with the pregnant and non-pregnant womenand how to diagnose and treat common obstetric and gynecological presentations.
2. Understand the theory behind normal and abnormal labor and understand how to continue patient care afterwards.
3. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
4. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1. Attendance and discussions
2. Quizzes, log book, and history
3. OSCE
4. Static
5. Final Exam

Pediatrics Senior I & II ***

Course code: MEDC 6361 + MEDC 6362
Study hours: Six credit hours (total 180 hours)

Course description:

This course reviews the normal growth and development of the child and covers the fundamental aspects of common childhood disorders and diseases. Instruction is also provided in the areas of physical assessment of neonatal and pediatric and adolescent patients, preventive medicine during childhood, congenital disorders, common psychological disorders relating to pediatrics and adolescent medicine, and pediatric drug therapy

The curriculum of the course includes taking the case history from the child and the family as well as performing clinical examination taking into account all the differences of the child's development and physiology. Furthermore the course teaches how to assess completely the child's general state and to plan the diagnostic and therapeutic procedures.

Contents:

- General Approach to the Pediatric Patient.
- Advanced Pediatric Respiratory Diseases.
- Advanced Pediatric Cardiac Diseases.
- Advanced Pediatric Gastrointestinal Diseases.
- Advanced Pediatric Genitourinary and Renal Tract Diseases.
- Advanced Pediatric Hematological and oncological Diseases.
- Advanced Pediatric Infectious Diseases.
- Advanced Pediatric Rheumatology Diseases .
- Advanced Pediatric Endocrine Diseases.
- Advanced Diseases in Neonates.
- Advanced Pediatric Neurology
- Pediatric Immunological Diseases.
- Pediatric Metabolic Diseases.

Objectives :

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused pediatric medical history.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.

7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.
9. Recognize life threatening emergencies and initiate appropriate primary intervention.
10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick pediatric patient and how to diagnose and treat common emergency and nonemergency medical presentations in pediatric age.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1- Attendance: 2.5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

Students are asked to present a number of cases written in a complete way including the history taken from the patient, physical examination, differential diagnosis and the investigations done to the patient.

3- Quizes 2.5%

4- Log Book: 2.5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Midterm Multiple Choice Questions Exam: 10%

6- Objective Structured Clinical Examination (OSCE) 20%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations (usually 4 to 5 stations in majors) on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly. They are held at the end of the academic year in May each year.

OSCE stations Include:

- Physical examination e.g Neurological Examination, Heart Examination .. etc
- Focused History Taking e.g History talking from patient with red urine, short stature, bedwitting, seizure .. etc
- Clinical Skill performance e.g, Lumber Puncture, Growth parameters measurement, Neonatal Life Support.. etc
- Communication with patients (Patient Education) e.g education bedwitting, how to use inhalers, how to deal with dehydration, breaking bad news.. etc

7- Static OSCE Exam 10%

8- Multiple Choice Questions Exam: 50%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

General Surgery Senior I & II ***

Course code : MEDC 6421, MEDC 6422
Study hours: Eight credit hours (total 240 hours)

Course Description:

In the senior clerkship the students are involved with surgical patients admitted to hospital. This course aims to develop proficiency in taking histories, performing physical examinations, formulating working diagnoses, and developing plans of management of surgical conditions. Students participate in the care of patients on the wards, in the clinics, in the operating room. and during their postoperative follow-up.

Contents:

- Advanced Pediatric surgery
- Advanced Vascular surgery
- Advanced Trauma and Critical Care course
- Fluids, Electrolytes, and Nutrition in surgical patient
- Advanced Burns management
- Advanced Acute Abdomen management
- Advanced Gastrointestinal Surgery
    - The Esophagus
    - The Stomach
    - Small Bowel
    - Colon, Rectum, and Anal Canal
    - The Appendix
- Advanced Surgical Endocrinology
- Liver, biliary tract and Pancreas
- Advanced Surgical Spleen care
- Advanced Surgical management of Breast

Objectives:

Students is expected to :

1. Obtain a complete and focused surgical history from patients.
2. Perform physical examinations on patients.
3. Communicate with patients and their families effectively.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.
9. Recognize life threatening emergencies and initiate appropriate primary intervention.

10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the surgical patient and how to diagnose and treat common acute abdomen cases.
2. Be knowledgeable of the status of assigned patients
3. Obtain a complete and focused surgical history from patients.
4. Perform physical examinations on patients.
5. Communicate with patients and their families effectively.
6. Documentation of patient health information in a concise, complete way.
7. Order appropriate investigations and interpret its results for the common or important diseases
8. Recognize common and important abnormal clinical findings.
9. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
10. Provide patient education for their health problems

EVALUATION:

1- Attendance: 2.5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

3- Quizzes 2.5%

4- Log Book: 2.5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Long Case Examination: 10%

The Long Case Examination is a component of majors evaluation, in which the student assesses a new patient (complete history taking and examination), then presents the case to the examiner followed by some questioning of the findings presented and about the case diagnosis and management. The student will be allowed to approach the case for

around 1 hour, the degree of sophistication will be as expected for level of 4th year medical students.
The mark will depend on checklist to assess main items that student should cover depending on his/her level.

6- Objective Structured Clinical Examination (OSCE) 20%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations (usually 4 to 5 stations in majors) on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly.
OSCE stations Include:

- Physical examination e.g Abdomen Examination, Heart Examination .. etc
- Focused History Taking e.g History talking from patient with red urine or vomiting .. etc
- Clinical Skill performance e.g IV line insertion, blood withdrawal, Arterial blood gas withdrawal, Suturing, Lumber Puncture, chest tube insertion, episiotomy .. etc
- Communication with patients (Patient Education) e.g education about how to give insulin injections, or how to use inhalers, also How to Break Bad News for a patient .. etc

7- Static OSCE Exam 10%

8- Multiple Choice Questions Exam: 50%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Internal Medicine Senior I & II ***

Course code : MEDC 6431 + MEDC 6432
Study hours: Eight credit hours (total 240 hours)

Course description:

This course covers advanced theoretical and practical knowledge of internal medicine which enables students to take complete case history and perform complete clinical examination. The course also teaches differential diagnosis with regard to clinical and laboratory procedures. Special attention is paid to the etiology and the pathogenesis of disease. After accomplishing the course students should be able to plan advanced diagnostic and therapeutic procedures and be aware of the prophylaxis and prevention of the most common disorders. The course also includes strategies most frequently applied in acute states. Furthermore, students learn how to deal with patients with chronic diseases, especially with those in the older age.

Contents:

- General Approach to the Medical Patient
- Communication with Patients
- Advanced Medical Respiratory Diseases
- Advanced Medical Cardiac Diseases
- Advanced Medical Gastrointestinal and Liver Diseases
- Advanced Medical Infectious Diseases
- Advanced Medical Nephrology and urological Diseases
- Advanced Medical Fluid, electrolytes, blood gas Diseases
- Advanced Medical Gastrointestinal Diseases
- Advanced Medical Neurological Diseases
- Advanced Medical Endocrine Diseases
- Advanced Medical Rheumatology Diseases
- Advanced Medical Hematology and Oncology Diseases

Objectives :

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused medical history from patients.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, complete way.
5. Order appropriate investigations and interpret its results for the common or important diseases
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.

9. Recognize life threatening emergencies and initiate appropriate primary intervention.
10. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick medical patient and how to diagnose and treat common emergency and nonemergency medical presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

EVALUATION:

1- Attendance: 2.5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

3- Quizzes 2.5%

4- Log Book: 2.5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Midterm Multiple Choice Questions Exam: 10%

6- Objective Structured Clinical Examination (OSCE) 20%

An OSCE usually comprises a circuit of short around 8–10 minutes stations, in which each student is examined with one or two examiner(s) and either real or simulated patients. With a different examiner for Each station. Students rotate through the stations, each student will complete all the stations (usually 4 to 5 stations in majors) on their circuit.

In each OSCE station, student gets marks for each step on the mark checklist that he/she performs correctly.
OSCE stations Include:

- Physical examination e.g Abdomen Examination, Heart Examination .. etc
- Focused History Taking e.g History talking from patient with red urine or vomiting .. etc
- Clinical Skill performance e.g IV line insertion, blood withdrawal, Arterial blood gas withdrawal, Suturing, Lumber Puncture, chest tube insertion, episiotomy .. etc
- Communication with patients (Patient Education) e.g education about how to give insulin injections, or how to use inhalers, also How to Break Bad News for a patient .. etc

7- Static OSCE Exam 10%

8- Multiple Choice Questions Exam: 50%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Family & Community Medicine ***

Course code: MEDC 6441

Study hours: Four credit hours (Total 120 hours)

Course description:

The 3-weeks course is aimed to teach the 6th year medical students the basic principles of family medicine as a unique clinical discipline including the holistic approach to a patient's care with special attention to family problems. Attention is drawn to the influence of socio-psychological factors on health and its promotion as well as prophylaxis. Part of the course is designed to present the differences between primary health care and hospital treatment and the organization of a family doctor's work. Students participate in the primary care and are taught the importance of the doctor –patient relationship, communication skills, clinical problem solving and physical examination.
This course provides students with an overview of key issues and contributing factors related to the health of families and communities. It includes focus on current and emerging public health concerns at each stage in the life-cycle, the needs of special populations and the range of policy and program responses. The course provides a framework for assessing the health of families and communities and for developing strategies for intervention and promotion of health and wellness.

Contents:

1. Introduction to family medicine
2. The Consultation
3. Communication Skills
4. Breaking bad news
5. Diagnostic Process
6. Management Plan
7. Anticipatory Care
8. Health Promotion and Counseling
9. Doctor-patient relationship (DPR)
10. Patient-centered Case Presentation
11. Periodic Health Examination
12. Common Presenting Problems
13. Roles and settings for community health medicine practice
14. Community medicine assessment and diagnosis.

Objectives:

After finishing this course, the students are expected to know the main diseases that a family physician most likely to deal with , their presentations, diagnostic methods and management

options. This level of their knowledge should be at least suitable for the work as a junior house officer or a general practitioner.

In order to achieve that, the students should develop the theoretical knowledge, clinical techniques and analytical skills needed to pass this course.

Some of the objectives include:

1. Introduce the concept of family medicine as a specialty
2. Deal efficiently with acute, chronic and psychological diseases
3. Provide comprehensive patient care in the context of family and community (whole person medicine)
4. Anticipate potential health problems and provide national health maintenance and disease prevention
5. Training the students to order appropriate investigations and interpret its results for the common or important diseases.
6. Recognize common and important abnormal clinical findings.
7. Students should be able to develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Provide patient education for their health problems.
9. Recognize when and how to refer patients.

Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes :

On completion of this course, the student should have the skill of :

1. Setting the scene and identifying implicit reasons behind each consultation.
2. Gaining competence in consultation skills (interviewing, problem-solving, management, holistic approach and doctor-patient relationship).
3. Interviewing skills with focused history taking and physical examination.
4. Problem-solving skills and generating appropriately- ranked diagnostic possibilities/hypotheses based on probability, seriousness, treatability and novelty.
5. Interpersonal communication.
6. Recognition of proper doctor-patient relationship.
7. Patient-centered and management planning.
8. Improving Health promotion and disease prevention.

EVALUATION:

The students in these courses are grading using many different methods including:

1. **MCQ exams:**

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 50-60 in number and are held at the end of the academic year in May each year.

2. **Logbook:**

All students must be able to perform history taking, physical examinations, case presentations. The acquisition of these skills must be certified, and monitored by a physician.

3. **Students' seminars:**

The students are expected to show evidence of their genuine interest in the course. This can be tested using case presentations and short clinical seminars.

4. Attendance:

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

Anesthesia and intensive care ***

Course code: MEDC 6201

Study hours: Two credit hours (Total 60 hours)

Course description:

This course is designed to expose students to the varieties of practice available in anesthesia and the application of basic knowledge in pharmacology and physiology in clinical situations. It also prepares the students to the management of victims of cardiac arrest. Students will acquire the knowledge and skills necessary for resuscitation of critically ill patient. The training involves, in addition to the didactic lectures, working in the intensive care unit under the supervision of different teams each according to their area of most experience.

Contents:

Introduction and anesthesia techniques
Inhalation /volatile anesthetics and Intravenous Hypnotics
Preoperative evaluation of patients
Premedication
Airway management and Tracheal intubation
Intravenous access and Fluids management
Muscle relaxants, Analgesia, narcotics
Complications of general anesthesia and Management of complications
Regional Anesthesia and Complications of regional anesthesia
Pain Medicine

Objectives :

Students should be able to:

1. Communicate with patients and their families effectively.
2. Obtain a complete and/or focused history from Intensive Care Unit patients.
3. Perform Important techniques of tracheal intubation, arterial blood withdrawal, laryngeal mask insertion .. etc.
4. Perform physical examinations on Intensive Care Unit patients.
5. Documentation of patient health information in a concise, complete way.
6. Order appropriate investigations and interpret its results for the common or important diseases
7. Recognize common and important abnormal clinical findings.
8. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
9. Provide patient education for their health problems.
10. Recognize life threatening emergencies and initiate appropriate primary intervention.
11. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Medical student capable of performing important techniques of tracheal intubation, arterial blood withdrawal, laryngeal mask insertion .. etc.
2. Understand how to recognize and deal with the sick Intensive Care Unit patient .
3. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
4. Reflect how patient safety specially at ICU may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1- Attendance: 5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

3- Quizzes 2.5%

4- Log Book: 5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Static OSCE Exam 25%

6- Multiple Choice Questions Exam: 60%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

Emergency Medicine ***

Course code: MEDC 6310

Study hours: Three credit hours **(Total 90 hours)**

Course description:

This course exposes the students to various aspects of management of patients in emergency departments. It provides the student with the opportunity to see an undifferentiated patient population with varying modes of presentation. This experience will stress diagnostic skills, ability to prioritize patient care and exposure to new diagnostic skills. The training involves working in the different emergency departments – surgical, medical, paediatric, etc. – under the supervision of the different emergency teams. in this course students are obligated to work nightshifts to widen the spectrum of the cases they see.

Contents:

- Introduction to Emergency Medicine
- General Approach to the Patients at Emergency Room
- Communication with Patients at Emergency Room
- Poly trauma –Head & Neck
- Cardiovascular emergencies
- Respiratory emergencies
- Advanced cardiac life support
- Basic Life Support (BLS)
- Poly trauma –Abdomen & Chest
- Shock
- Wounds management
- Approach to Coma
- Poisoning /drug overdose

Objectives :

Students should be able to:

1. Communicate with patients and their families at Emergency room effectively.
2. Obtain a focused history from patients at Emergency room.
3. Perform physical examinations on patients.
4. Documentation of patient health information in a concise, rapid way.
5. Order appropriate investigations and interpret its results for effectively at ER
6. Recognize common and important abnormal clinical findings.
7. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
8. Recognize life threatening emergencies and initiate appropriate primary intervention.

9. Continually reevaluate management plans based on the progress of the patient's condition.

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand how to recognize the sick medical patient and how to diagnose and treat common emergency presentations.
2. Understand the role of decision making in the clinical environment and the main theoretical models of decision making.
3. Reflect how patient safety may be compromised by poor decision making and ineffective healthcare environments and create strategies to overcome these.

Evaluation:

1- Attendance: 5%

Students are expected to behave in a professional way during the courses. For that, students aren't allowed to skip classes, seminars or teachings unless they provide very reasonable excuse for that. Any student who misses more than 25% of the courses activities will not be allowed to enter the final exam and should be marked as failed.

2- Case History 2.5%

3- Quizzes 2.5%

4- Log Book: 5%

All students must be able to perform history taking, physical examinations, case presentations, nightshifts, routine and basic medical procedures. The acquisition of these skills must be certified, and monitored by a physician.

5- Static OSCE Exam 25%

6- Multiple Choice Questions Exam: 60%

These are multiple choice questions exams. They aim to test the students theoretical knowledge, analytical skills and principles of management of the diseases of the subspecialty the course discusses. They are usually 100 in number and are held at the end of the academic year in May each year.

University Requirements

Holy Quran : (Part 30 : Juz 'Amma) *

Course Code : HADETA1100
Duration : One Credit hour (16 hours)

Course description:
Introduction to a novel of Imam Asim, introduction to the Tajweed Science , the melody and its types, the study of the provisions of Ista'idah and Basmalah, and the provisions of the static letter(N) and Characterization, and the provisions of static the letter (M) and the rule of strict, and save the part of "Amma" is the thirtieth part of the Quran, and preservation the meanings of strange words in the part.

Course Objective
This course aims to equip learners with the introductory knowledge to understand the Surahs in Juz 'Amma besides providing a refresher course on the Tajweed knowledge.

Learning outcomes:
At the end of this course, students are expected to have a clearer understanding concerning the book of Allah; to explain its meanings, extract its legal rulings and grasp its underlying reasons.

Course Outline
- Introduction to Tafsir - Why learning it is important, the definition and its significance
- Basic Arabic to understand the Qur'an (common vocabularies and grammars frequently used in the Qur'an)
- Surah Al-Fateha - Recitation, common mistakes during recitation, revelation of this Surah, the meanings behind every ayah (sentence), history
- Tafsir of other commonly recited Surahs from Juz 'Amma (based on the format above)
- Highlight the proper recitation, pronunciation of words in every Surah
- Healthy dosage of recitation practice with proper Tajweed every week
- Selected stories from the Qur'an - important lessons to be learnt
- Memorization of verses from Juz 'Amma - the effective techniques and tips
- Written exercises to grasp the topics learnt better

Assessments Plan
The students will be assessed as follow
1. **Homework : you will have to do a home work a new assignment or a review**
2. **In Class Assignments: will assign you a number of ayat to memorize every class 10 moderate ayat or equivalent**
3. **Exams: one final exam**

Holy Quran: (Part 29 Juz " Tabarak") *

Course Code: HADTB1100
Study Hours: One Credit hour (16 hours)

Course description:
Study the provisions of the tide and the palace and its sections with its application, and save the part of Tabarak which is the twenty-ninth part of the Quran, and save the meanings of strange words in the part.

Objective:
- Fine tuning the fundamentals of Tajweed and recitational fluency without major mistakes.
- The correct recitation of the Chapter 29 (Juz' Tabarak)
- Completion of the rules and types of Mad (extension).

Assessments Plan
The students will be assessed as follow

4. **Homework : you will have to do a home work a new assignment or a review**
5. **In Class Assignments: will assign you a number of ayat to memorize every class 10 moderate ayat or equivalent**
6. **Exams: one final exam**

Arabic Language (Grammar) *

Course Code : ARAB 1301
Study Hours : Three Credit hours (48 hours)

Course description
This course introduces students to the definition of Nahw (syntax; less common: grammar) and its relationship to other sciences of language.

- Syntactic (grammatical) introductions: Speech and sentence, parts of speech and characteristics of each part, al-'i'rab inflection and al-Bina' structure, parsing cases and markers, types of parsing, Almabniyyat (phrasing) and Almu'rabat (wording), wording using sub-markers, indefiniteness and definiteness, types of definite articles.
- The nominal sentence: subject and predicate, al-af'aal an-nasikha (case abrogating verbs): kana (to be) and akhawatiha (its sisters: similar verbs), kada and akhawatiha , al-huruf an-nasikha (case abrogating particles): particles similar to the verb laisa (not to be), inna (emphatic particle: indeed) and akhawatiha, and la (pre-nominal negative particle: no; not). The course also provides exercises and applications on these issues.

Course objective:

- Acquire a clear understanding of the basic elements of Arabic grammar, syntax, and morphology, with special emphasis on oral and writing skills

Course outlines:
In this course students study Arabic grammar under the following headings:

- Nominal sentences, verbal sentences, the subject and the predicate, the weak verb complements to the verbal sentence, requests, conditional sentences, the vocative, "exclamations" and oaths, the forms expressive of surprise or wonder, and practical applications of grammatical analysis. general view of the verb and its forms, the voices, tenses of the verb, moods, numerals, particles, adverbs, complements, conditional and particles of meaning.

Biography of Prophet Mohammed *

Course code: HADTC1302
Study Hours: Three Credit hours (24 hours)

Course description:
The course deals briefly with the life of the Arabs in Jahiliyyah, this course provides a brief account of the biography of the Prophet Muhammad (saw) in relation to the revelation of the Quran, his role in explaining the Quran as a prophet, and propagating the Divine message to Mankind as the last Prophet of Allah. the impact of prophet Muhammad`s mission, the importance of studying Syrah, the phases of Syrah from the start of Muhammad`s mission until his death with emphasis on major events like the Prophet's emigration from Mecca to Medina, the Aqaba oath of allegiance or Bay`ah.

Course Aims:
To provide an opportunity for students to:

- Become acquainted with the biography of Prophet Muhammad (saw) in relation to the revelation of the Quran
- Understand the role and the message of Prophet Muhammad (saw)
- Become acquainted with the major events like the Prophet's emigration from Mecca to Medina, the Aqaba oath of allegiance

Course Learning Outcomes:
At the end of the course students should be able to:

- Make connection between the Seerah and its significance in understanding the Quran
- Appreciate the perseverance of the Prophet (saw) in conveying the message of Allah
- Grasp the role and the message of the Prophet (saw) and its application in our time
- Understand the noble character of the Prophet (saw) which is to be followed
- Understand the characteristics of the Prophet's successful leadership

Course Contents:
The lineage and family of Muhammad (saw)
Birth of the Prophet and the 40 years prior to prophethood
The mission of Prophet Muhammad (saw)
The role of the Prophet (saw)
Stages of secret and open Dawah
The general social boycott
The year of grief
Calling to Islam beyond Makkah
Al-Isra and Al-Miraj
Aqabah pledges and migration to Madinah
Life in Madinah
The Prophet and the Sahabah at Badr

The Prophet and the Sahaba at Uhud
The Prophet and the Trench
The Treaty of Hudaybiya
The Prophet and the Sahabah at Muta
The conquest of Makkah
The Prophet and the Sahabah at Hunayn
The Prophet and the Sahabah at Tabuk
The year of delegations
The farewell Pilgrimage
The journey to Allah
The characteristics of the Prophet's leadership
The character of the Prophet (saw)

Islamic World Today *

Course code : HADTC3306
Study Hours : Three Credit hours (24 hours)

Course Description:
This course deals with the contemporary reality of Muslims, the reasons for their weakness, their backwardness from the leadership of humanity, and the phenomenon of military and political colonization of the Islamic world. Intellectual and cultural invasion: preaching its means and objectives, orientalism, its origins, its schools, its means and its objectives. Westernization, its origin, its means and its effects in Islamic life. Destructive movements such as Qadianism, Masonic and Baha'i. Study of intellectual doctrines that have an impact in the Islamic world such as secularism, democracy and globalization. Explain the means of confronting intellectual invasion and its effects. The Islam and the future of humanity.

Course Objectives:
1. To recognize the nature of the conflict and the image declared by the enemies against Islam.
2. To familiarize students with contemporary intellectual doctrines that is contrary to Islam.
3. To develop the student's skills in defending the Islamic civilization and responding to suspicions of skeptics
4. The students should know the danger of dropping Islamic values and concepts.

Basis of assessment:
The quarterly exam
Attendance and participation
Reports
Final exam

Holy Quran (Part 28 : Juz ” Qad Smea”) *

Course code: HADTC2100
Course duration: One Credit hour (16 hours)

Course description:
Study the exits of characters and their characteristics, sections of attributes in terms of strength and weakness, and the preservation of the first party of the part has heard, which is the twenty-eighth part of the Quran, and the preservation of the meanings of the strange words in the party with an objective study of the purposes and objectives of Surah's.

Objective:

- Introduce the application of Tajweed rules and improvement in recitational fluency in preparation for the Advanced Courses.
- The correct recitation of the Chapter 28 (Juz' Qad Sami'a),
- Introduction to various advanced topics in Tajweed, such as heavy and light letters and Quranic script.

Assessments Plan
The students will be assessed as follow

7. **Homework : you will have to do a home work a new assignment or a review**
8. **In Class Assignments: will assign you a number of ayat to memorize every class 10 moderate ayat or equivalent**
9. **Exams: one final exam**

Holy Quran (PART 27: Juz AL"-dhariat") *

Course code HADETD2100
Study hours: One Credit hour (16 hours)

Course description:

Study the provisions of amplification and degradation, and the provisions of the imposition of the three sections (symmetric - convergent - homogeneous), and the provisions of static letters "L", and the rule of confluence of the inhabitants, and the preservation of the first party of the twenty-seventh part of the Quran, and starts from the first Surat Al-Dhariat to the end of Surat Al Qamar,

Learning Objectives:

A special emphasis will be given to the correct recitation and implication of the rules of Tajweed. In order for the students to get the full benefit of their memorization, they will be taught the overall meaning of the memorized verses.

Assessments Plan
The students will be assessed as follow

1. **Homework : you will have to do a home work a new assignment or a review**
2. **In Class Assignments: will assign you a number of ayat to memorize every class 10 moderate ayat or equivalent**
3. **Exams: one final exam**

STUDIES IN FAITH *

Course code : HADT 2303
Study Hours : Three Credit hours (48 hours)

Course description:
This course covers the major aspects of Islamic creed. The course focuses on correct belief in Allah (swt), Issues Connect with faith in God, his Existence, believing in his divinity, Names and attributes. The course also deals with the divine destiny and relation with Unity of Lordship. while giving a clear description of the Day of Judgment and life after death in general. It also outlines the clear boundaries of faith and disbelief and its consequences in the Hereafter.

Course Aims
To enable students to:

- Understand the principles of correct Islamic belief and the prerequisites for a believer
- Acquire a clear understanding of life after death and its eternal reward/punishment with detailed descriptions

Course Learning Outcomes
At the end of the course students should have:

- Gained the knowledge of the fundamentals of (Aqidah)
- Gained a clear understanding of invalidations of Iman
- Gained a better understanding of differences between sects
- Acquired adequate knowledge of principles of relationship with non-Muslims
- Gained a better understanding of the boundaries of Iman (faith), Kufr (disbelief) and Takfir (charge of disbelief)

Course Contents

- Belief in Allah (swt)
- Belief in (Lordship)
- Belief in (Worship)
- Belief in (Names and Attributes)
- Difference between Sects
- Belief in Angels
- Belief in Divine Books
- Belief in Prophets and Messengers
- Belief in the Day of Judgment
- Belief in Predestination
- Belief in life after death
- The essence of Iman
- The invalidations of Iman
- Signs before the Day of Judgement
- Inevitable death & The end of the world

- The interim world (Barzakh) & Punishment of the Qabr
- The Resurrection & Description of the Day of Judgment
- The description of Hell
- The description of Paradise

STUDIES IN FIQH *

Course code : SHAR 1303

Study Hours : Three Credit hour (48 hours)

Course description

This course introduces the student to the foundations of fiqh, with a brief introduction to its origins; as well as the most prominent contributing scholars, and the most important schools and curricula. This course will also shed light on the importance fiqh in making informed judgments (ijtihad), and the derivation of Islamic legislation. Additionally, this course encompasses a study of the most important divisions of fiqh such as: complete evidence, which includes: the quran and sunnah, consensus, and striking comparisons. Students will also learn about: general and specific meanings, obstacles to qualifications, informed judgment, and.

OBJECTIVES

1. Providing the student with knowledge enabling him to understand the acts of worship and their correct etiquette

2. Clarifying the wisdom behind the legislation of acts of worship and their effects on human behavior.

3. To develop the students' understanding of how Islamic Law evolved from the time of the Prophet (pbuh) until the present.

Holy Quran (PART 26 : Juz Al- Ahqaf) *

Course code: HADTD3100
Study hours: One Credit hour (16 hours)

Course description
study of stopping and starting during Al-Quran reading, the provisions of the cessation and its sections, the signs of cessation in the Quran cutting and silence, beginning with the link, T feminization and how to stop them, harvested and connected, what is observed to Hafs and the preservation of the first party of the twenty-sixth of the Koran, and starts from the first Surah Al Ahqaf and ends with the open , And the preservation of the meanings of strange words in the party, with an objective study of the purposes and objectives of the Sura to be preserved.

Assessments Plan
The students will be assessed as follow

1. **Homework : you will have to do a home work a new assignment or a review**
2. **In Class Assignments: will assign you a number of ayat to memorize every class 10 moderate ayat or equivalent**
3. **Exams: one final exam**

Palestinian Studies *

Course code: POLS 3220
Study hours: Three Credit hours (Total 48 hours)

Course description
This course will offer an overview of Palestinian culture and society over the last one hundred years. Taking into consideration the historical and political events that have occurred in this period, we will proceed chronologically through three major periods: 1) pre-1948; 2) 1948-1967; 3) 1967-present. While historical and political events and trends of these periods will figure prominently into our material, what we will be most concerned with is how these events reflect on culture and society, and culture and society's role in shaping historical and political actions. This chronological division also corresponds to the geographical status of the land and the people. In the pre-1948 period, Palestine was one geographical entity with a population of Muslims, Jews, and Christians, most Palestinian by citizenship, and many Palestinian and Arab by identity

Course contents:

- Nationalism, identity, and Palestine before 1948
- Political activism and society before 1948.
- 1948 War
- Managing refugees and living as refugees
- 1967 and the occupation of the West Bank and Gaza
- The intifadas, Oslo: identity, civil society, and social change
- Modernity, family, and maternity.
- Ethnography of a refugee camp
- Exile and Return.

Assignments:
1) Discussion participation (which includes small weekly assignments) (20% of grade).
2) One 9-10 page paper (10% of grade)
3) Midterm exam 20% of grade
4) Final exam 50% of grade