

Phase -1- course Description

1. **Course title and code:** Urinary System Module - SYS 327
2. **Credit hours:** 5 H
3. **Level/year at which this course is offered:** 2nd year – 4th semester
4. **Pre-requisites for this course (if any):** Foundation course- Cell and Tissues- General Pathology- General Anatomy- Biochemical Basis of Medicine.

5. General Objectives:

What is the main purpose for this course?

By the end of this course, the students will be able to

- Demonstrate knowledge of the macroscopic and microscopic structure of the urinary tract in order to relate normal function and common clinical abnormalities, and knowledge of the principles and concepts applicable to the urinary system, in general.
- Appreciate the role of the kidney in controlling the volume and composition of body fluid and the way in which they respond to departures from normal parameters of volume, electrolyte concentration and systemic haemodynamics.
- Discuss renal cellular function in order to appreciate the basis of relevant therapeutics, and describe normal micturition, the reasons of oliguria, and such common conditions as glomerulonephritis, pyelonephritis, urinary tract infection, haematuria, proteinuria, and chronic renal failure.

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1. **Course title and code:** RESPIRATORY SYSTEM MODULE / SYS 222
 2. **Credit hours:** 4 hours
 3. **Level/year at which this course is offered:** Phase I, second year, semester
 - 4- **Pre-requisites for this course :**

Successful completion of :

- Phase I basic Biochemistry course (structure of lipoprotein to understand surfactant).
- Basic Anatomy and Histology (anatomy & Histology of chest wall & Upper respiratory tract).
- General Pathology course (inflammation, hemodynamic disorders, neoplasia, and pathology of tuberculosis).
- Cardiovascular disorders (Relation of cardiovascular system with respiratory system, heart failure, cyanosisetc.)
- Immuno-lymphoid disorders (hypersensitivity reaction)
- Blood disorders (anemia, leukocytosis, leucopenia, factors affecting erythropoiesis).

5-General Objectives:

What is the main purpose for this course?

Graduates should have sufficient knowledge and understanding of the normal anatomy, physiology, and development of the respiratory system components.

The student should gain knowledge about the definition, etiology, and pathogenesis of the common respiratory tract diseases (infectious, neoplastic, vascular, ect...) in correlation to the morphology of different disease entities. Students have to correlate pulmonary function tests and radiological findings in to clinical manifestations of various lung diseases in order to reach accurate diagnosis and management of common conditions including pharmacological aspect of commonly used drugs.

1. **Course title and code:** Reproductive System Module SYS 326
2. **Credit hours** 5
3. **Level/year at which this course is offered** 3rd year 6th semester
4. **Pre-requisites for this course: (if any)** Foundation course- Cell and Tissues- General Pathology- General Anatomy- Biochemical Basis of Medicine
5. **General Objectives:**

What is the main purpose for this course?

By the end of this module, the students will be able to demonstrate knowledge of basic concepts in human development starting from the production of gametes, establishment of the embryo up to independent life of the newborn infant with consideration to the disorders of the male & female reproductive tract and develop the independent ability to analyze and interpret figures and graphs in diagnosing abnormalities in the reproductive system.

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1. **Course title and code:** Pharmacology for physiotherapy
 2. **Credit hours :** 2 = 30 contact hours
 3. **Level/year at which this course is offered** YEAR 3
 4. **Pre-requisites for this course:** Basic knowledge of anatomy, physiology & pathology biochemistry, microbiology
 5. **General Objectives:**

Summary of the main outcomes for students enrolled in the course

By the end of this course, the students will be able to demonstrate knowledge of the following :

1. General pharmacology: Pharmacodynamics and pharmacokinetics, factors affecting drug response and unwanted effects of drugs
2. Clinical pharmacology (brief mechanism of action; indication, contraindication, adverse drug effects of the following drug groups ::ANS drugs : cholinergic anticholinergic drugs, adrenergic ; antiadrenergic ; CVS drugs : hypolipidemic,thrombolytics and antiplatelet drugs.; Chemotherapy of microbial, viral and fungal infections, anticancer drugs ; CNS drugs: NSAIDS, CNS stimulants, antidepressants, antiparkinsonian drugs and local anesthetics

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1. **Course title and code:** Pathology core course/ path 211
 2. **Credit hours :** 5 hours
 3. **Level/year at which this course is offered:** Second year
 4. **Pre-requisites for this course:**
 1. Basic cell biology, including the cell cycle and processes of mitosis and meiosis
 2. The basic anatomic and histological features of different body organ (since we are dealing with all organs in our departments(lung, heart, brain, kidney...ect)

3. **The structure and function of the adult cell.**
4. **The basic morphology and function of white blood cells.**
5. **Cell cycle and normal regulatory mechanisms.**
6. **The anatomy and physiology of capillary microcirculation.**
7. **Physiology of hemostasis and coagulation factors**
8. **Protein biochemistry**

5. General Objectives:

What is the main purpose for this course?

Summary of the main learning outcomes for students enrolled in the course.

By the end of this course the student will utilize the basic science knowledge of cell anatomy, histology, and physiology to interpret clinical and morphological changes. The student will recognize the mechanisms and etiological factors underlying disease processes [as cell adaptation, response to injury, inflammation, neoplastic transformation, and reaction to infectious agents] ,and correlate them to functional alterations, biochemical changes morphologic manifestations (gross, microscopic and ultrastructure), along with clinical features and complications of diseases. The student will be able to describe the basic morphologic changes of various disease processes, and formulate differential diagnosis using morphologic appearance.

The student will apply the knowledge and skill in solving clinical problems and interpret the morphologic features and pathogenetic factors to the common clinical conditions as well as he will develop concepts and sufficient understanding of the subject to be able to pursue post-graduate studies and continuing medical education.

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1. **Course title and code:** **NUTRITION AND METABOLISM. SYS324**
 2. **Credit hours** **4 credit points = 60 credit hours = 58 contact hours**
 3. **Level/year at which this course is offered** :Phase I, 5th Semester
 4. **Pre-requisites for this course: (if any)** **Successful completion of Phase I Biochemistry core course, GI system, cardiovascular system, renal system, endocrine system and musculoskeletal modules**
 5. **General Objectives:**

What is the main purpose for this course?

The primary goal of the 'Nutrition and Metabolism' module is to increase students' awareness about the interaction and relationship between food intakes and metabolism in different physiological and pathological conditions and situations, as well as the relevance of nutrition in prevention and treatment of disease, and improving the quality of life. The content of this course utilizes and reinforces information gained in the biochemistry core courses and other modules, namely GIS, Cardiovascular System, Renal System, Musculoskeletal System and Endocrinology. It is expected that by imparting important and relevant information about changes in metabolism and its effect on nutritional requirements in the clinical and community setting, the students will be able to understand why nutrition is important in health promotion, disease prevention, and lifestyle maintenance. They are also expected to apply gained knowledge to:

- a) Identify and prioritize nutritional problems through screening and assessment,
- b) Advocate for an individual or a community's quality of life (nutritional modification) when appropriate or necessary,
- c) Use recent nutrition-related research to improve patient care and cost-effective therapies.

The use of instructional methods such as case- based lectures and practical sessions is hoped to emphasize the relevance of given topics. Specifying areas to be covered by SDL, dividing students to small groups during the tutorial sessions, and allocating cases to be researched by students and discussed during the sessions should institute professional behaviour, team spirit and encourage the use of various resources including staff, library and IT for evidence based medical-nutrition-therapy to obtain accurate information for clinical problem-solving or patient referral.

1. **Course title and code:** Foundation Module/ FOND 101
2. **Credit hours:** 4 hours
3. **Level/year at which this course is offered:** 2nd year, 1st Semester
4. **Pre-requisites for this course: (if any)**
Biology, chemistry and physics courses in the first year.
Communication skills and English courses in the first year.
5. **General Objectives:**

What is the main purpose for this course?

This course is a multidisciplinary course which aims to introduce students to university life and get them acquainted to the concepts, philosophy and objectives of medical school. We hope students will become familiar with the concepts of self-directed learning, problem based learning and students' centered learning, and will be able to utilize all the teaching strategies they will be offered and learn how to deal with examinations. In addition, this course will cover the prerequisites for next coming core courses and modules.

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1. **Course title and code:** Microbiology Core Course / Micro 311
 2. **Credit hours :** 4 credit hours
 3. **Level/year at which this course is offered :** Third year (fifth semester)
 4. **Pre-requisites for this course (if any):**
 - Biochemical structure and functions of DNA.
 - The basic physiology of different body organs to expect the disturbances after microbial infection.
 - The basic morphology and functions of the immune system to understand the host-parasite relationship.
 5. **General Objectives:**

What is the main purpose for this course?

- a. Discuss the different types of microorganisms (bacteria, fungi and viruses) of medical importance, their characters, modes of transmission and pathogenesis of different infectious diseases.
- b. Outline the different methods of microbiological diagnosis of microbial diseases.
- c. Review the mechanisms of action, methods of microbial resistance and complications of different antimicrobial agents.
- d. Describe the different methods of prevention and control of diseases caused by microorganisms.
- e. Apply the knowledge and skills in solving clinical problems caused by microorganisms

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1. **Course title and code:** Immune Blood Lymphatic System SYS 223
 2. **Credit hours :** 4 credit hours
 3. **Level/year at which this course is offered:** Phase I - 2nd year, 4th semester.
 4. **Pre-requisites for this course (if any) :** Completion of 1st Semester
 5. **General Objectives:**

What is the main purpose for this course?

By the end of this course the student will utilize the basic science literature of cell anatomic, histological, and physiologic normality to interpret clinical and morphological changes in haematological and immunological

diseases. The student will recognize the mechanisms underlying blood and immune disease processes, as manifested by morphologic (gross, cellular, and ultrastructural), physiologic, immunological and hematological changes in correlation to etiological factors, clinical features and complications of diseases. The student will apply the knowledge and skills in solving clinical problems and interpret the pathophysiologic factors to the common clinical conditions as well as developing concepts and sufficient understanding of the subject to be able to pursue post-graduate studies and continuing medical education.

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1. **Course title and code:** **Medical Genetics Module CLC 435**
 2. **Credit hours:** **2 hours**
 3. **Level/year at which this course is offered:** **3rd year 5th semester**
 4. **Pre-requisites for this course (if any):** **Biochemical Basis of Medicine**
 5. **General Objectives:**

What is the main purpose for this course?

This course aims to prepare medical students to understand the role of the genetic lab and genetic clinic in practice. Medical students will be introduced to the scope of Medical Genetics and they will learn that it can involve any clinical specialty. In this regard it is the responsibility of every physician to recognize signs that alert to a potential underlying genetic condition, know when to refer the patient and/or family to a genetic specialist and recognize ELSA (ethical, legal and social aspects) associated with genetics.

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1. **Course title and code:** **Endocrine Module SYS 325**
 2. **Credit hours:** **4 hours**
 3. **Level/year at which this course is offered:** **3rd year, 2nd Semester**
 4. **Pre-requisites for this course (if any)**
 - **Physiology courses:**
 - **Autonomic nervous system**
 - **Central nervous system.**
 - **Anatomy courses:**
 - **Neuroanatomy.**
 - **Core anatomy**
 5. **General Objectives:**

What is the main purpose for this course?

Endocrine System modules is designed to

Study the structure and function of the endocrine organs including the pituitary, thyroid, parathyroid, adrenal glands and pancreas in relation health and disease states.

Also to study the relationship between the central nervous system and various endocrine organs in order to let students become able to describe and analyze the conditions affecting different hormones' levels. The course helps students to provide the basis and working knowledge for the common clinical conditions and disorders related to endocrine system.

In addition, the course covers the topic of lactation and mammary glands, and the very important topic of cancer breast.

1. **Course title and code:** Embryology core course / ANTM 213
2. **Credit hours:** 15 **contact hours:** 15
3. **Level/year at which this course is offered :**Second Year – Semester 3
4. **Pre-requisites for this course (if any)**
 - 1st year (Basic Foundation course).
 - Biology course in first year II semester.
 - English course in first year II semester.
5. **General Objectives:**

What is the main purpose for this course?

Throughout this course the students should understand complete details about the structures, development of human embryo at different stages including gametogenesis, fertilization, and implantation. Also, the students have the ability to correlate between the embryological structure and its clinical significance. This course trains the student to solve and understand any related clinical problems by simple and short way. Practically, the students will see the listed embryological subjects.

By the end of this course the student will demonstrate the ability to assimilate and integrate information from lectures, practical, tutorial and independent activities on the gametogenesis, fertilization, implantation, embryonic period, fetal period and development of the pharyngeal arches and their derivatives.

The student will demonstrate the ability to apply basic knowledge and cognitive skills to solve problems, and understand some related areas beyond the course and appreciate the major supporting evidence based on text-books reviews and electronic learning materials. The student will have the experience through small group teaching and group discussion to analyze any related clinical problem or congenital anomaly and to communicate with other students and teaching staff.

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1. **Course title and code:** Cells and Tissues core course / ANTM 211
 2. **Credit hours:** 2 hours
 3. **Level/year at which this course is offered:** 2nd year, 1st Semester
 4. **Pre-requisites for this course (if any)**

Biology course in the first year.
Communication skills and English courses in the first year.
 5. **General Objectives:**

What is the main purpose for this course?

By the end of this course the student will utilize the basic science literature of cell and tissues to identify the normal structure of human cell and its components and their function in the cell, these will help student to recognize the main characteristics of the human basic tissues (epithelium, connective, muscular and nervous tissues). The student will be able to differentiate between different types of tissues and organs under the light microscope. The student will apply knowledge and skill in correlation of their structure to function which will enable the student to develop concepts and sufficient understanding of the subject to be able to pursue post-graduate studies and continuing medical education.

1. **Course title and code:** Biochemical Basis of Medicine / BCHM 211
2. **Credit hours:** 5
3. **Level/year at which this course is offered:** Second year, Faculty of Medicine
4. **Pre-requisites for this course (if any):**
 - General Biology
 - General Chemistry
5. **General Objectives:**

What is the main purpose for this course?

Biochemical Basis of Medicine course is a five credit course offered in the third semester of the second year of the medical curriculum. The course goal is to provide the foundation for producing graduates who are knowledgeable in the fundamental biochemistry of normal and abnormal body processes. Students will apply this knowledge to course discussion of the biochemical basis of common or representative diseases, including their symptoms and treatments. They will come to understand and be able to evaluate potential advances of diagnostic and treatment modalities. The content of this course reinforces and amplifies on content of certain first year courses, particularly foundation course and provides students with a foundation upon which to build in other system based modules, clerkships and graduate medical education. Practical and student small-group learning experiences encourage professional behavior and teamwork in a context that promotes use of resources such as the library, faculty and information technology.

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1. **Course title and code:** General Anatomy core course/ ANTM 212
 2. **Credit hours:** 4 hours
 3. **Level/year at which this course is offered:** Second
 4. **Pre-requisites for this course (if any)**
 - Foundation course in the beginning of second year
 - Biology course in first year II semester
 - English course in first year II semester
 5. **General Objectives:**

What is the main purpose for this course?

By the end of this course the students will demonstrate the ability to assimilate and integrate information from lectures, practical sessions, tutorials, and independent activities on the anatomy of the human body regarding upper limb, lower limb thorax, abdomen, and head and neck. Also, students will demonstrate the ability to gain dissection and practical skills enabling them to recognize and differentiate bones, muscles, vessels, nerves and viscera of the body. The students can gain skills in reading and understanding radiological images of the body and identify through palpation the anatomical landmarks on the surface of the body.

By the end of the General Anatomy (I) module the students will demonstrate the ability to apply their basic knowledge and cognitive skills to solve problems and understand some related areas beyond the General Anatomy course and appreciate the major supporting evidence based on text-books, reviews and electronic learning materials. Also, students will have the experience through small group teaching and group discussion to analyze the anatomical basis of abnormalities related to clinical cases (applied anatomy) and to communicate with other students and teaching staff.

1. **Course title and code:** Musculoskeletal System / SYS 220
2. **Credit hours:** 5
3. **Level/year at which this course is offered:** 2nd year – 4th semester
4. **Pre-requisites for this course (if any):** Foundation course - Cell and Tissues - General Pathology - General Anatomy - Biochemical Basis of Medicine
5. **General Objectives:**

What is the main purpose for this course?

- (1) Study the general structure and function of bones, joints and muscles, their blood and nerve supply and to introduce their relevance to clinical disorders.
- (2) Study the structure & function of the upper limb, lower limb & vertebral column by physical examination (i.e. surface and living anatomy), dissection & examination of prosected parts
- (3) Provide the basis for the study of common clinical conditions and disorders, for clinical examination and for performing simple clinical procedures related to the above regions.
- (4) Enable the students to use obtained knowledge for understanding the structure and function of the musculoskeletal system of other regions of the body to be studied in subsequent modules.

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1. **Course title and code:** Early clinical experience and communication skills / CLC 332
 2. **Credit hours:** 2 credit hours
 3. **Level/year at which this course is offered:** Third year Semester 5
 4. **Pre-requisites for this course (if any):** No Pre-requisites
 5. **General Objectives:**

What is the main purpose for this course?

The aim of this module is to enable the student to build an early clinical experience in the medical field, develop an experience in the life-clinical situations & make up an early orientation, acquire knowledge, attitude & skills in doctor-patient communications and the human, ethical, psychological, and legal aspects of healthcare.

Also the course is aiming to expose the students to the basic concepts of patient safety and research methodology.

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1. **Course title and code:** Cardiovascular System Module / 221
 2. **Credit hours:** 4
 3. **Level/year at which this course is offered:** Second Year, Second semester
 4. **Pre-requisites for this course (if any)** Basic Foundation Course
 5. **General Objectives:**

What is the main purpose for this course?

1. Summary of the main outcomes for students enrolled in the course
 - By the end of CVS module, the student will be able to discuss the structure and function of the human cardiovascular system and compare it with abnormal structure and function. The student will be able to assess the cardiovascular system and how its function is altered in common disease states. The students will acquire skills and working knowledge and understanding of the principles and concepts applicable to the cardiovascular system in general, provide the basis for the study of common clinical conditions and disorders, and for the

clinical examination together with performing simple clinical procedures related to the cardiovascular system and its management.

- This was achieved by organizing the contents of the module into 4 general themes:
- **1- Heart failure theme:** during the first week, in this theme anatomy of the heart, the physiological action of the heart as a pump, cardiac cycle, cellular events of the heart, control of cardiac output and drugs used for treatment of heart failure will be discussed in the lectures, tutorial and practicals.
- **2- Atherosclerosis and ischemic heart diseases theme:** during the second week, in this theme plasma lipoproteins, hyperlipoproteinemias, myocardial infarction, vasculitis and cardiovascular tumours, different causes of chest pain, myocardial infarction, diagnostic cardiac enzymology, clinical presentation of myocardial infarction and its treatment will be covered by the different lectures, tutorial and practicals.
- **3- Hypertension theme:** in this week , factors regulating blood pressure, relation between pressure flow and resistance, oedema formation, pressure effect on blood vessel, clinical picture and manifestation of hypertension, antihypertensive drugs will be discussed through the different instruction methods
 - **4- Arrhythmia and rheumatic heart disease theme:** in this week, electrical activity of the heart, cardiac arrhythmia, anti-arrhythmic drugs and valvular heart diseases will be discussed.

1. **Course title and code:** Nervous system & Special sense module /Code: 322
2. **Credit hours :** 6
3. **Level/year at which this course is offered :** Third year at the second semester
4. **Pre-requisites for this course (if any)**

Before the students begin the CNS module they should demonstrate the ability to:

- Describe the basic topography of the head and neck and its development.
 - Recognize the mechanism of action potential and its conduction.
 - Identify synaptic transmission – neurotransmission and receptor in the CNS, PNS, and ANS and the role of drugs.
 - Discuss the neuromuscular junction – structure and function- and the neuromuscular disorders.
 - Describe the mechanism of muscle contraction.
 - Illustrate muscle structure and mechanism of locomotion.
 - Describe connective tissue structure.
5. **General Objectives:**

What is the main purpose for this course?

On completion of this module the student should be able to:

1. Demonstrate a systematic and coherent knowledge of the anatomical and physiological functioning of the central nervous system and special senses (CNS & SS).
2. Describe the biochemical importance of the neurotransmitters and brain metabolism.

3. Discuss and analyses structure-function relationships of the central nervous system and critically appraise the implications of any alteration in the normal control points with respect to pathology, and drug treatment.
4. Explain the basic physiological processes involved in nociception and the possible mechanisms involved in endogenous analgesia.
5. List the pharmacological control of pain, the sedatives and the hypnotics.
6. Describe the anatomical structure of the eye and ear, and explain the function of each.
7. Describe the mechanism of voluntary movements, recognise the important centres involved and explain the effects of their lesions.
8. List the higher intellectual functions, discuss the mechanism of each, and explain the effects of oxidative stress, demyelination and degenerative diseases on the integrity of the nervous system.
9. Describe the different parasitic diseases affecting CNS and special senses system
10. Critically evaluate knowledge from a range of sources (lectures, tutorials, practical, problem based learning, clinical presentation, and self directed learning) and utilise it to exercise judgement to evaluate altered functions, and drug therapy.
11. Accept accountability for achieving personal and/or group outcomes by developing a variety of professional skills (self-directed learning, PBL, and practical sessions).

1. Course title and code: GASTROINTESTINAL SYSTEM MODULE (228)

2. Credit hours: 5

3. Level/year at which this course is offered: Phase II , 3rd year – 6th semester

4. Pre-requisites for this course: Foundation course- Cell and Tissues- General Pathology- General Anatomy- Biochemical Basis of Medicine

5. General Objectives:

What is the main purpose for this course?

Summary of the main outcomes for students enrolled in the course

- By the end of GIT module the student will be able to discuss the structure and function of the human gastrointestinal system and compare it with abnormal structure and function. The student will be able to assess the gastrointestinal system and how its function is altered in common disease states. The students will acquire skills and working knowledge and understanding of the principles and concepts applicable to the gastrointestinal system in general provide the basis for the study of common clinical conditions and disorders, and for the clinical examination together with performing simple clinical procedures related to the gastrointestinal system and its management.

1. **module title and code:** Basic emergency Care CLC231
2. **Credit hours:** 1 credit point = 15 hours
3. **Level/year at which this course is offered** 2nd year
4. **Pre-requisites for this course (if any) :**BLS
5. **General Objectives:**

What is the main purpose for this course?

1- Summary of the main learning outcomes for students enrolled in the course.

By the end of emergency module the student will be able to:

- Apply BLS skills
- Describe injury prevention , apply triage and identify toxidromes
- Take focused history and perform primary and secondary survey followed by focused physical examination for minor wounds , burn victim and common fractures in order to evaluate and manage common household injuries
- Manage dyspnea , chest pain ,syncope and fever
- Manage sore-throat, cyanosis and haemoptysis.