Faculty of

Health Sciences

Faculty of Health Sciences

Departments

The Faculty of Health Sciences includes the four following departments:
Department of Nursing
Department of Human Nutrition and Dietetics
Department of Medical Lab Technology
Department of Physical Therapy

History

The Faculty of Health Sciences is the most recent addition to Beirut Arab University Faculties. The Faculty was established to meet the rising needs for professionals specialized in health related sciences.

Vision

To contribute to the development and upgrading of health services in Lebanon and the region by providing excellent education and scientific research of high quality.

Mission

The mission of Faculty of Health Sciences is to promote and maintain the highest level of education through continuous improvement in education, research quality, and community services in the fields of nursing, nutrition and dietetics, medical laboratory technology, and physical therapy. The faculty offers comprehensive educational programs through varieties of teaching methodology, laboratory, clinical experience and field training which are culturally and ethically sensitive. Graduates of these programs will be able to function in changing and diversifying health care settings. The faculty provides evidence - based practice according to the highest professional standards by incorporation of recent research findings into professional practice. To achieve its mission, the faculty relies on highly specialized dedicated staff members.

Undergraduate Programs

Offered Degrees

The Faculty of Health Sciences offers the following degrees:
Bachelor of Nursing
Bachelor of Nutrition and Dietetics
Bachelor of Medical Lab Technology
Bachelor of Physical Therapy

Program Description

The standard duration of study for the award of a bachelor degree in any specialization is 8 semesters. The requirements for each Bachelor degree are as follows:

Bachelor of Nursing

The degree requirements consist of a total of 120 credit hours taken as follows:

- Mandatory Core Courses - 96 Cr.
- Faculty Elective Courses - 8 Cr.
- General University Requirements - 16 Cr. divided into:
  University Mandatory Courses - 7 Cr.
  University Elective Courses - 9 Cr.

Bachelor of Nutrition & Dietetics

The degree requirements consist of a total of 120 credit hours taken as follows:

- Mandatory Core Courses - 96 Cr.
- Faculty Elective Courses - 8 Cr.
- General University Requirements - 16 Cr. divided into:
  University Mandatory Courses - 7 Cr.
  University Elective Courses - 9 Cr.

Bachelor of Medical Lab Technology

The degree requirements consist of a total of 120 credit hours taken as follows:

- Mandatory Core Courses - 96 Cr.
- Faculty Elective Courses - 8 Cr.
- General University Requirements - 16 Cr. divided into:
  University Mandatory Courses - 7 Cr.
  University Elective Courses - 9 Cr.

Bachelor of Physical Therapy

The degree requirements consist of a total of 120 credit hours taken as follows:

- Mandatory Core Courses - 96 Cr.
- Faculty Elective Courses - 8 Cr.
- General University Requirements - 16 Cr. divided into:
  University Mandatory Courses - 7 Cr.
  University Elective Courses - 9 Cr.

Bachelor of Nursing (120 Cr. Hr.)

Curricula

First Semester			Cr.
NURS	101	Fundamentals of Nursing	4
BIOL	107	Basic Biology	2
CHEM	109	Basic Chemistry	2
PHYL	121	Physiology	2
ANAT	123	Human Anatomy	2
MICR	125	Microbiology & Immunology	2
		Elective[1]	2
			16

Second Semester			Cr.
NURS	102	Medical Surgical Nursing I	5
NURS	104	Health Assessment	2
NURS	106	Nutrition for Nurses	2
PATH	130	Pathophysiology	2
		Elective[1]	4
			15

Third Semester			Cr.
NURS	201	Medical Surgical Nursing II	5
NURS	203	Emergency Care Nursing	3
SURG	207	Surgery	1
INTM	201	Internal Medicine for Nurses	1
PHAR	225	Pharmacology	2
		Elective[1]	4
			16

Fourth Semester			Cr.
NURS	202	Medical Surgical Nursing III	5
NURS	206	Nursing Professional Ethics	1
NURS	208	Educational Strategies in Nursing	2
NURS	210	Critical Care Nursing I	4
		Elective[1]	2
		Elective [2]	2
			16

Fifth Semester			Cr.
NURS	301	Pediatric Nursing	5
NURS	305	Critical Care Nursing II	4
PEDT	317	Pediatrics	1
FMTX	319	Forensic Medicine & Toxicology	1
		Elective[1]	2
		Elective [2]	2
			15

Sixth Semester			Cr.
NURS	302	Obstetric & Gynecological Nursing	5
OBGY	312	Obstetric & Gynecological Medicine	1
NURS	304	Psychiatric Nursing & Mental Health	5
NURS	308	Nursing Research	2
		Elective[1]	2
		Elective [2]	2
			17

Seventh Semester			Cr.
NURS	401	Community Health Nursing	5
NURS	403	Geriatric Nursing	3
COMM	407	Epidemiology	1
MATH	220	Biostatistics	1
		Elective [2]	2
			12

Eighth Semester			Cr.
NURS	402	Nursing Administration	5
NURS	404	Nursing Practicum	8
			13

[1] A total of 16 credits is required as General University Requirements; 7 credits are selected from the University Mandatory courses list including: ARAB 001 (2 Cr.), ENGL 001 (2 Cr.), CMPG 001 (2 Cr.), BLAW 001 (1 Cr.) and another 9 credits are selected from the University Elective courses list.

[2] Selected from courses offered by the department and the faculty.

Mandatory Courses

ANAT 123 - Human Anatomy (2 Cr. : 1 Lec : 3 Lab : 0 Tut)

Introduction including anatomical terms, position and movements. Different systems of the body including osseous, joints, muscular, cardiovascular, lymphatic, respiratory, digestive, urogenital, endocrine, nervous and their clinical applications. Practical: Practical study of the human skeleton, human heart and its big blood vessels, human lungs and their pleurae, abdominal and pelvic viscera. Radiological anatomy: Study of some x - ray films of different organs and bones.

BIOL 107 - Basic Biology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Life, chemical composition of protoplasm; Importance; Physical characteristics of protoplasm. Cell division, mammalian physiology; Nutrition, digestion, metabolism, circulation, respiration, excretion, chemical and nervous coordination; Principles of taxonomy. Structure, biology and life cycle of the following phyta: Protozoo, coelenterata, platyhelminthes, aschelminthes, annelida and arthopoda.

CHEM 109 - Basic Chemistry (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Introduction to basic concepts of chemistry, chemical reactions and calculations; The three physical states of matter (gases, liquids and solids); Solutions; Chemical equilibrium, ionic equilibrium.

COMM 407 - Epidemiology (1 Cr. : 1 Lec ; 0 Lab : 0 Tut)

The course presents definition, components and uses of epidemiology. Epidemiological studies, measurements of health problems will be emphasized. The application of epidemiological triad will be studied.

FMTX 319 - Forensic Medicine & Toxicology (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

Signs of death and its various causes including accidents and criminal ones will be explored. The course also presents toxic substances that enter the body through inhalation, direct contact, bites and ingestion of poisons and their management.

INTM 201 - Internal Medicine for Nurses (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

Major symptoms and signs in internal medicine, including the gastrointestinal, the cardiovascular respiratory, the musculoskeletal system, the neurological, the endocrine system will be studied.

MATH 220 - Biostatistics (1 Cr. : 1 Lec : 0 Lab : 1 Tut)

The course allows the students to apply the principles of biostatistics in the nursing field. It is designed to provide students with knowledge necessary to understand interpret and conduct descriptive analysis of data relevant to nursing. Applying SPSS software will be emphasized. Normal distribution, binomial probability and conditional probability, estimation, hypothesis, testing, P - Values, regression and correlation will be discussed.

MICR 125 - Microbiology & Immunology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Introduction to microbiology, classification of micro - organisms with emphasis on important pathogens, normal flora

of man, pathogenesis, laboratory diagnosis, mechanism of action of antibiotics and microbial resistance, anaerobic infection, opportunistic infection, hand - washing. Basic immunology, innate immunity and natural defense mechanisms, immunoglobulin structure and function, hypersensitivity and immunity to tumors, vaccines, immunosuppression. Practical: Introduction to light basic microbiology techniques including: Aseptic techniques, streak plates, inoculation, counting of microorganisms. Gram staining (gram - ve, gram + ve). Acid - fast stain, capsule stain, spore stain.

NURS 101 - Fundamentals of Nursing (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

This medical surgical nursing course is designed to prepare undergraduate nursing students to be competent providers of basic nursing skills. The student will be able to assess, screen, conceptualize and provide basic nursing procedures to adult patients based on the identified needs. Nursing as a profession; Health and illness; Therapeutic safe hospital environment; Basic human needs; Comfort, rest, and sleep; Nutritional needs; Urinary elimination; Medical and surgical asepsis; Hygienic care; Vital signs; Medication; Heat and cold applications; As well as first aid.

NURS 102 - Medical Surgical Nursing I (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

This course is designed to prepare undergraduate nursing students to be competent in assessment, planning, implementation and evaluation of immediate and long - term care of patients with cardiovascular, GIT, hepatic and biliary disorders, diabetes mellitus and general pre and post operative care, rehabilitation, common diagnostic procedures and fluids and electrolytes balance and imbalance. Prereq.: NURS 101.

NURS 104 - Health Assessment (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

The course focuses on assessment of health across the life span and provides the student with the knowledge and skills needed to assess the health status of individuals throughout life cycle. Emphasis is placed on assessment of the physical, psychosocial, and cultural dimensions of the individual. The course includes lectures and practical experiences in the assessment of individuals to identify normal and abnormal findings.

NURS 106 - Nutrition for Nurses (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course presents the role of the nurse in the administration of dietary services in the hospital, the interrelationship of the disciplines of food preparation, distribution and the quality of the provided meals. The course emphasizes the role of the nurse in providing appropriate nutrition in health and disease through their interaction with the dietitian and the physician.

NURS 201 - Medical Surgical Nursing II (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

This course is designed to prepare undergraduate nursing students to be competent in assessment, planning, implementation and evaluation of immediate and long - term care of patients with respiratory disorders, burn, intra - operative care, endocrine dysfunction, urinary and renal dysfunction and cancer. Prereq.: NURS 102.

NURS 202 - Medical Surgical Nursing III (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

This course is designed to prepare undergraduate nursing students to be competent in performance in operating rooms and in providing total care for patients with chest surgery, neurologic and neurosurgical disorders, orthopedics, eye, ear and skin disorders. Prereq.: NURS 201.

NURS 203 - Emergency Care Nursing (3 Cr. : 2 Lec : 3 Cln : 0 Tut)

This course provides students with the knowledge and skills needed to care for patients in emergency situations. Emphasis on triage, primary and secondary assessments, critical thinking and problem solving. The clinical experience will focus on the comprehensive nursing interventions appropriate to patients with various emergency problems. Prereq.: NURS 102.

NURS 206 - Nursing Professional Ethics (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

The course presents the professional code of ethics, for nursing practice, that protects both nurses and clients patients human rights. Nurses rights as well as patients duties and rights, ethical legal and moral principles pertaining to health, newly arising dilemmas and issues and professional conduct, as well as organization - al rules, policies and committees, will be declared and emphasized.

NURS 208 - Educational Strategies in Nursing (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course introduces the educational process in the development of health teaching units. The course is organized into a simple frame for implementing educational principles. Different taxonomies of educational objectives will be discussed. Traditional and advanced teaching strategies will be identified as well as knowledge and skills assessment will be introduced. Selection of instructional media will be emphasized.

NURS 210 - Critical Care Nursing I (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

This course focuses on the response of critically ill patients to physiological dysfunction actual or potential. It provides students with the necessary in - depth knowledge and understanding of nursing and medical management as well as the critical and technical skills required for practice. The aim of the practice aspect of this course is to provide a range of opportunities for students to develop a deeper understanding of critical care nursing through systematic analysis and reflection on the relationships between theory and practice. Prereq.: NURS 102.

NURS 301 - Pediatric Nursing (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

Growth and development theories will be explored as a basis of understanding health care needs of well and sick children. Provision of total care of neonate, high risk and sick children are the focus of this course. Prereq.: NURS 202.

NURS 302 - Obstetric & Gynecologic Nursing (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

This course presents the maternal cycle and provides students with knowledge and skills related to care of mothers during antenatal, labor, delivery and postnatal periods and care of women with different gynecological health problems. Prereq.: NURS 202.

NURS 304 - Psychiatric Nursing & Mental Health (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

The course provides knowledge and practical application of caring for patients with mental illness. It also provides opportunities for students to learn provision of mental health services to well and sick individuals and families, as well as learning the relationship between mind and body and impact of the biopsychosocial state on physical and mental health.

NURS 305 - Critical Care Nursing II (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

This course consists of a theory and clinical component which give students opportunity to enhance knowledge of critical care nursing and its clinical applications .The nursing process, and critical thinking skills in the nursing management of critically ill patients will be practiced. The focus is on the nursing care of patients with acute and or multi - systems failures. Students are able to develop skills in caring for critically ill patients using the nursing process. Prereq.: NURS 210.

NURS 308 - Nursing Research (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course provides an introduction to research process. Different research types, designs, sampling techniques and methods of data collection will be illustrated. Students will be required to plan for a nursing research proposal.

NURS 401 - Community Health Nursing (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

The course provides students with knowledge and skills necessary to meet health care needs of the individuals & families in the community within the context of primary healthcare. Special emphasis will be on health promotion and maintenance, prevention and early detection of diseases and disabilities, rehabilitation and restoration of the highest possible level of health. Prereq.: NURS 202, NURS 301, NURS 302.

NURS 402 - Nursing Administration (5 Cr. : 3 Lec : 6 Cln : 0 Tut)

This course will enable students to utilize scientific inquiry and theory in the management of the health care units and organizations and apply advanced knowledge in making decisions affecting the management of health care system. It aims at helping the students employ relevant philosophies as these contribute to the management of health care units and organizations, and to utilize knowledge of the law and legislations and health policy in making decisions, which affect the management of health care system. In addition it enables them to apply communication strategies and to demonstrate the ability to think critically in the Nurse Administrator role, as well as to demonstrate leadership skills in the performance of the Nurse Administrator role, are also among the general aim of this course. Prereq.: NURS 202.

NURS 403 - Geriatric Nursing (3 Cr. : 2 Lec : 3 Cln : 0 Tut)

The course provides information on the care of the elderly. The theories and concepts of aging, the physiologic and psychosocial changes and problems associated with the process, and the appropriate nursing interventions are discussed. Ethical and legal aspects of caring for the elderly are addressed.

NURS 404 - Nursing Practicum (8 Cr. : 0 Lec : 24 Cln : 0 Tut)

A clinical course designed for students in the final semester before graduation to facilitate the transition from nursing student to professional nurse. Students will have the opportunity to increase the quality and quantity of the clinical experience. Decision making skills will be enhanced through working with preceptors in different nursing specialties which have been taught in the previous academic years.

OBGY 312 - Obstetric & Gynecologic Medicine (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

Students acquire knowledge related to selective obstetric and gynecological health problems and their medical management.

PATH 130 - Pathophysiology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course introduces the junior first year student nurses to the pathophysiological changes incurred in various body systems. These systems will comprise the respiratory, renal, gastrointestinal musculoskeletal, endocrine and neurological. Symptoms as pain, ischemia, inflammation, allergy and altered clotting have to be emphasized. Prereq.: PHYL 121.

PEDT 317 - Pediatrics (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course provides knowledge of medical health impairments of various body systems in newborn and children, including congenital inborn and acquired health impairments. Prereq.: INTM 201.

PHAR 225 - Pharmacology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Admission to the nursing major or CI. focuses on the basic and clinical concepts of pharmacology in nursing practice. Examines pharmacotherapeutics; Pharmacodynamics; Pharmacokinetics; Adverse reactions and contraindications; Therapeutic indications and nursing implications. Prereq.: PHYL 121 and PATH 130.

PHYL 121 - Physiology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course in human physiology aims to introduce the students to the physiology of homeostasis and to study the functions of body systems that consist of the following: Blood, Autonomic Nervous System (ANS), excitable system, renal system, respiratory system, endocrine system, cardiovascular system, central nervous system, digestive system.

SURG 207 - Surgery (1 Cr. : 1 Lec : 0 Lab ; 0 Tut)

The course presents the most common conditions in surgical medicine. Causes, diagnosis, surgical interference will be discussed in each of the selected conditions. Hemorrhage, gangrene, acute arterial and venous disorders, orthopedic, anorectal, neurosurgical and renal surgeries will be emphasized.

Department & Faculty Electives

NURS 211 - Therapeutic Nutrition (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

This course presents therapeutic nutrition which involves diet modifications in order to correspond body's ability to metabolize certain nutrients, correct nutritional deficiencies related to the disease and eliminate certain foods from the diet that may be harmful to patients with various diseases including: Hypertension, heart failure, myocardial infarction, peptic ulcer, gastritis, ulcerative colitis, hepatitis, esophageal varices, jaundice, hepatic failure, diabetes mellitus, acute and chronic glomerulonephritis, renal failure, fever, constipation and diarrhea.

NURS 212 - Concepts in Nursing (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course examines selected clinical concepts from their scientific and theoretical bases. Theoretical issues related to the application of concepts across different settings will be addressed. Students will be introduced to the process of concept analysis. Emphasis is placed on selected medical surgical functional alterations and its related nursing assessment and intervention. Examples will include: Homeostais, immobility, pain, inflammation, ischemia, hypoxia,

dyspnea, oedema, fatigue, impaired wound healing, allergic reactions, impaired immune competence and altered clotting.

NURS 213 - Community Health (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course is designed to introduce students to the concepts of health and diseases. It enables students to apply the concept of primary health care in various community health settings. Culture and environmental aspects affecting community health will be emphasized. Special consideration will be directed toward family, adolescents, women and men health in the community.

NURS 214 - Basic Concepts in Health Psychology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Provides overview of growing partnership between psychology and health care, including history of psychology in health care; Theoretical foundations of health and illness; Intervention and research techniques; Stress and high risk behaviors (e.g., substance abuse, eating behaviors, AIDs); Psychology's contribution to improving outcomes and quality of life in chronic and life - threatening behaviors.

NURS 311 - Computer Science (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Students will be introduced to information technology in nursing and health care. They will develop an understanding of the foundations of information management in the health care area. For RN / BSN students, the emphasis is placed on synthesizing previous professional experience with concurrent learning for professional development.

NURS 312 - Scientific Thinking (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course introduces students to science and scientific reasoning from a perspective that integrates computer science and the natural sciences. Students will gain a basic understanding of computer technology (its organization, history, societal impact, etc.) and how computers are used in various scientific disciplines. In particular, the use of the scientific method and the importance of computer modeling in scientific inquiry will be studied. Students will learn to develop simple web - based programs for analyzing data and modeling systems, and use those programs in conducting hands - on experiments. Applications in biology, chemistry, and physics will provide insights into how these disciplines approach problems and utilize computers and computer modeling as tools.

NURS 313 - Infection Control (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course focuses on theory in infection control, including infection control practices, transmission of disease and methods for prevention and control of pathogenes transmission. It is designed to ensure nurses' adoption of safe and ethical infection control practices. Important related practice standards, that are evidence - based and outline expectations from nurses, in all settings, will be declared and discussed.

NURS 314 - Assessment of the Acutely & Critically Ill Client (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Assessment of acutely and critically ill patient is carried out through focused rather than comprehensive assessment. Focused assessment concentrates on a particular need or health care problem or potential health care risks for saving patient life. When the problem is adequately identified on going assessment will start that includes systemic monitoring and observation related to specific problems. Students will acquire knowledge and practice skills of both: Focused and ongoing assessment of acutely and critically ill patients.

NURS 315 - Child Development (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course examines the developmental potential of the child from the prenatal period through adolescence and the factors that enhance or constrain this development. Integration of developmental theories and current basic and applied research findings and their clinical application will be stressed. Strategies to promote optimal child health and developmental outcomes will be explored.

NURS 411 - Communication Skills & Humanities (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course is designed to introduce students to the communication competencies needed by health care professionals. Emphasizes communication theories, interviewing; Counseling; Verbal and nonverbal skills; Group interaction, inter - professional, and therapeutic communication. Analyzes communication problems and conflicts encountered in health care and the development of coping strategies.

NURS 412 - Palliative Care Nursing (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Nursing of patients with the dying or terminal illness, whether in long term care facilities or at home, will be introduced. Troubling deficiencies in the care of dying in hospital settings will be discussed. High access to quality, symptomatic, spiritual and restorative care will be declared, together with regulations that govern care in these facilities. Hospice, as a concept of care in which the end of life is viewed as a developmental stage will be stressed. Assistance provided for dying individual and their families is examined. The ethical moral and legal problems arising from advanced medical treatment, abortion, suicide euthanasia, pain killing and bereavement care will be explored.

NURS 413 - Environmental Health Education (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Designed to enable the student to understand and evaluate complex environmental health issues induced by waste products generated by modern technology. Specific topics include water quality, air quality, solid and hazardous waste, occupational health, ionizing and non - ionizing radiation, chemical contamination of foods, food additives, animal transmission of disease, noise, and selected current topics.

NURS 414 - Health Informatics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course focuses on the history of health care informatics, basic informatics concepts, and health information management applications. The student progresses along a continuum: From developing knowledge and understanding of basic concepts and methods of health care informatics; To learning about specific information management applications in health care administration, practice, education, and research; and finally to a hands - on experience with a specific application of his / her own choosing.

NURS 415 - Health Education (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course provides students with the educational principles necessary for provision of health education to patients and public to increase their awareness of appropriate health practices and symptoms of illness to make them more inclined to seek medical help.

NURS 417 - Quality Control (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course is formatted at the undergraduate level of study. It is intended to provide the nursing students with the

theory and knowledge necessary to deal with advanced management practice issues related to quality control and development. The course also focuses on the development of skills necessary for dealing with quality standards required in today's practice in health care organizations. Students complete this course will have a far reaching knowledge base in which to practice quality related role and produce effective results.

University Requirement Elective Courses

NURS 001 - First Aid (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Dealing with various types of injuries caused by trauma or accidents as in disasters, war or fires, car accidents whether at home or field or streets. Thus can assess and help those in life threatening injuries, medical emergencies, and special situations as fractures, dislocation, poisoning, bleeding, burns, frostbite, etc. and have some principles of CPR for adult, infant, and child. (Not offered to Nursing students).

NURS 002 - Disaster Management (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

A guide to the basic components preparing nurses to provide health care under disaster conditions and to respond effectively in emergency situations. The student will be introduced to the principles of disaster preparedness and management, the common tasks consistent across all disaster responses, the key components of a disaster preparedness plan, health care systems frameworks for disaster response, impact of disasters, legal and ethical issues, and types of disasters and their causes.

1 Lecture = 1 Cr. Hr.
2 - 3 Lab = 1 Cr. Hr.
2 - 3 Cln = 1 Cr. Hr.

Bachelor of Nutrition & Dietetics (120 Cr. Hr.)

Curricula

First Semester			Cr.
CHEM	117	General Chemistry	3
PHYS	131	Physics	2
BIOL	107	Basic Biology	2
PHYL	121	Physiology	2
ANAT	123	Human Anatomy	2
		Elective[1]	4
			15

Second Semester			Cr.
MATH	108	Biostatistics	2
CHEM	118	Organic Chemistry	3
BCHM	102	Biochemistry	3
BIOL	118	Microbiology	3
		Elective[1]	4
			15

Third Semester			Cr.
NUTR	201	Food Chemistry	3
NUTR	203	Human Nutrition	4
NUTR	205	Food Habits	2
NUTR	207	Malnutrition	3
		Elective[1]	4
			16

Fourth Semester			Cr.
NUTR	202	Nutrition in the Life Span	4
NUTR	204	Nutrition Education	2
NUTR	206	Meal & Diet Planning	3
NUTR	208	Nutrition & Immunity	2
NUTR	210	Assessment of Nutritional Status	3
		Elective[1]	2
			16

Fifth Semester			Cr.
NUTR	301	Therapeutic Nutrition I	4
NUTR	303	Food Service Management	3
NUTR	305	Metabolic Disorders	2
NUTR	307	Food Safety & Hygiene	3
NUTR	315	Child Development	2
		Elective[1]	2
			16

Sixth Semester			Cr.
NUTR	302	Nutrition & Non - Communicable Diseases	2
NUTR	304	Community Nutrition	3
NUTR	306	Advanced Topics in Nutrition	2
NUTR	308	Therapeutic Nutrition II	4
		Elective [2]	4
			15

Seventh Semester			Cr.
NUTR	401	Nutrition Seminar	2
NUTR	403	Therapeutic Nutrition Lab I	8
NUTR	405	Nutrition Intervention	2
		Elective [2]	2
			14

Eighth Semester			Cr.
NUTR	402	Research Project	3
NUTR	404	Therapeutic Nutrition Lab II	8
		Elective [2]	2
			13

[1] A total of 16 credits is required as General University Requirements: 7 credits are selected from the university mandatory courses list including: ARAB 001 (2 Cr.), ENGL 001 (2 Cr.), CMPG 001 (2 Cr.), BLAW 001 (1 Cr.) and another 9 credits are selected from the University Elective courses list.

[2] Selected from courses offered by the department and the faculty.

Mandatory Courses

Common Courses for the Departments of Nutrition & Dietetics & Medical Lab Technology

ANAT 123 - Human Anatomy (2 Cr. : 1 Lec : 3 Lab : 0 Tut)

Introduction including anatomical terms, position and movements. Different systems of the body including osseous, joints, muscular, cardiovascular, lymphatic, respiratory, digestive, urogenital, endocrine, nervous and their clinical applications. Practical: Practical study of the human skeleton, human heart and its big blood vessels, human lungs and their pleurae, abdominal and pelvic viscera. Radiological anatomy: Study of some x - ray films of different organs and bones.

BIOL 107 - Basic Biology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Life, chemical composition of protoplasm; Importance; Physical characteristics of protoplasm. Cell division, mammalian physiology; Nutrition, digestion, metabolism, circulation, respiration, excretion, chemical and nervous coordination. Principles of taxonomy. Structure, biology and life cycle of the following phyta: Protozoo, coelenterata, platyhelminthes, aschelminthes, annelida and arthopoda.

BIOL 118 - Microbiology (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Introduction to microbiology, morphology and structure of prokaryotic cells, culture requirements and identification procedures, pure cultures and methods of preservation, bacterial nutrition, cultivation and culture media, bacterial reproduction and growth, factors affecting microbial growth, prokaryotic diversity, bacteriopages. Practical: Preparation of culture media, isolation of bacteria from different sources, staining of bacteria, bacterial count, pure culture techniques.

BCHM 102 - Biochemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

The course will cover the definition classification of carbohydrates, lipids and proteins, their essential metabolic pathways. Nucleic acids structure, functions and chemistry. Enzyme classification and functions, water and electrolytes balance in biological system. Vitamins and minerals and their role in metabolism. Prereq.: CHEM 117.

CHEM 117 - General Chemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Introduction to basic concepts of chemistry, chemical reactions and calculations, the three physical states of matter (gases, liquids and solids), solutions, chemical equilibrium, ionic equilibrium. Periodic table and properties of the elements, nomenclature. Theories of atomic structure, atomic spectra, and chemical bonding.

CHEM 118 - Organic Chemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Chemistry of saturated and unsaturated aliphatic and aromatic hydrocarbons: Preparations, reactions and mechanisms. Study of the chemistry of Alkyl halides and alcohols. Substitution and elimination reactions. Practical: Applied experiments related to the above topics.

MATH 108 - Biostatistics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Types of variables, discrete, continuous and random variables, binomial, normal and t distribution probability and probability distribution, frequency distribution and graphical presentation of data, hypothesis testing, ANOVA, linear regression and correlation, types of samples, sampling technique and error will be discussed.

PHYL 121 - Physiology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course in human physiology aims to introduce the students to the physiology of homeostasis and to study the functions of body systems that consist of the following: Blood, Autonomic Nervous System (ANS), excitable system, renal system, respiratory system, endocrine system, cardiovascular system, central nervous system, digestive system.

PHYS 131 - Physics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Heat and temperature, thermal expansion, heat measurements, calorimetry, mechanical equivalent of heat, transfer of heat by: Conduction, convection and radiation. Periodic motions, addition of simple harmonic motions, vibrations of physical systems, forced vibrations and resonance, coupled oscillations and normal modes, longitudinal and transverse wave motion, standing waves, interference.

Nutrition & Dietetics

NURS 315 - Child Development (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course examines the development potential of the child from the prenatal period through adolescence and the factors that enhance or constrain this development. Integration of developmental theories and current basic and applied research findings and their clinical application will be stressed. Strategies to promote optimal child health and developmental outcomes will be explored.

NUTR 201 - Food Chemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

The course includes the chemical composition of foods, food composition tables and how the composition can affect the physical and sensory properties of food and consequently their acceptability or rejection by the consumer. The course discusses the chemical changes in the composition of food under various circumstances such as storage or processing. Prereq.: CHEM 117.

NUTR 202 - Nutrition in the Life Span (4 Cr. : 4 Lec : 0 Lab : 0 Tut)

The nature, composition and specific needs of individuals throughout their life span are discussed. It covers the requirements during infancy, childhood and adolescence, adulthood and the elderly with special emphasis, on the needs during periods of physiological stress such as pregnancy and lactation. Prereq.: NUTR 203.

NUTR 203 - Human Nutrition (4 Cr. : 4 Lec : 0 Lab : 0 Tut)

This course discusses in depth the physiological needs for energy, carbohydrates, lipids, proteins, vitamin and minerals. The biological function of each nutrient, interaction between nutrients, and how would the needs changes during stages of growth and development. The course includes a brief description of the metabolic pathways and causes of nutritional deficiency diseases.

NUTR 204 - Nutrition Education (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course discusses the various methods used in the nutrition education of the individual and the community. It focuses on the selection of the appropriate method of communication according to the target group of the education program. The student will be trained on the development of educational material that suits the conditions prevailing in the Middle East area.

NUTR 205 - Food Habits (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Focuses on the historical and cultural bases of the prevailing food habits, the factors determining the nature and depth of food habits and how it could affect the dietary pattern and consequently the nutritional status. Examples of food habits prevailing in different societies and among population from different regions will be presented. The possibility and difficulty in changing food habits will be discussed.

NUTR 206 - Meal & Diet Planning (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Focuses on the planning of a nutritional sound meal in such a way to fulfill all the nutritional needs of the individual in view of his physiological and nutritional status. It also includes meal planning for population groups. The course includes practical training in diet planning.

NUTR 207 - Malnutrition (3 Cr. : 3 Lec : 0 Lab : 0 Tut)

The course is devoted to study the causes, symptoms and nutritional handling of the nutrition deficiency diseases prevailing in the community. The course will concentrate on obesity, anemia, stunting, wasting, goiter and vitamin A deficiency. The role of non - nutritional factors such as illiteracy, poverty and the limited supply of food in the development of such diseases will be covered.

NUTR 208 - Nutrition & Immunity (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course focuses on the role of malnutrition and dietary deficiency in the impairment of natural immunity, the association between malnutrition and increasing susceptibility to infection diseases and the role of infection in the impairment of dietary intake and malnutrition. Prereq.: NUTR 203.

NUTR 210 - Assessment of Nutritional Status (3 Cr. : 2 Lec : 2 Cln : 0 Tut)

The course covers various assessment activities including assessment of dietary intake using proper computer programs, anthropometric measurement suitable for different age groups, biochemical assays, physical and clinical examination. The sensitivity, reliability and reproducibility of each technique will be discussed. The students will be subjected to practical training to acquaint them with every technique.

NUTR 301 - Therapeutic Nutrition I (4 Cr. : 4 Lec : 0 Lab : 0 Tut)

Introduction to hospital nutrition, nutritional care of the patient, deviation in the metabolism of selected diseases. A brief description of the etiology of nutrition related diseases and the importance of dietary therapy, intervention and education in the treatment of the patient. Fundamentals of therapeutic nutrition and dietary formulation for various diseases and feeding methods. Prereq.: NUTR 203, BCHM 102.

NUTR 302 - Nutrition & Non - Communicable Diseases (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course focuses on the role of nutrition in the development of non communicable diseases such as diabetes mellitus, CV or cardiovascular diseases, cancer and obesity. The course emphasizes the increasing prevalence of non communicable diseases in developing and developed countries, the factors enhancing the prevalence and the role of nutrition in the prevention and treatment. Prereq.: NUTR 203, BCHM 102.

NUTR 303 - Food Service Management (3 Cr. : 2 Lec : 2 Cln : 0 Tut)

The course covers the technical and managerial aspects of food establishments including supervision, evolution and intervention in various activities. The course includes field trips to food establishment followed by reporting and group discussion.

NUTR 304 - Community Nutrition (3 Cr. : 2 Lec : 2 Cln : 0 Tut)

The course covers the role of the nutritionist in the community. It deals with the identification of the nutritional problems prevailing in the community and how to recommend and apply the necessary corrective programs. The role of various community institutions in the promotion of the nutritional status of the community will be discussed.

NUTR 305 - Metabolic Disorders (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course focuses on the metabolic disorder associated with nutrition and how to fulfill the nutritional requirement of infant suffering from inborn errors of metabolism. Follow up of the nutritional status of subjects suffering from metabolic disorder and application of the necessary dietary modification. Prereq.: BCHM 102.

NUTR 306 - Advanced Topics in Nutrition (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

This course is directed to study the recent trends and development in the field of nutrition and dietetics. The content of the course will vary each semester.

NUTR 307 - Food Safety & Hygiene (3 Cr. : 2 Lec : 2 Cln : 0 Tut)

Focuses on the preparation of food under the best hygienic condition to guarantee its safety for the consumers. It includes the hygienic of meal, milk, fish and dairy products. The course includes the principles of food toxicology with emphasis on the toxins present in natural food and food products.

NUTR 308 - Therapeutic Nutrition II (4 Cr. : 3 Lec : 2 Lab : 0 Tut)

Focuses on the assessment of the nutritional status of the patient and its response to the therapeutic diet, variation in the nutritional care of patients suffering from one or more diseases. Interaction between drugs and nutrition. The students will be trained on dietary formulation for patients suffering from cardiovascular disease, diabetes mellitus, cancer, hepatitis, kidney diseases, etc... Prereq.: NUTR 301.

NUTR 401 - Nutrition Seminar (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Seminar presentation by the students under the supervision of a staff member Each presentation is followed by an open discussion.

NUTR 402 - Research Project (3 Cr. : 1 Lec : 3 Cln : 0 Tut)

Under the supervision of a staff member each student will carry out a research project in the field of nutrition and dietetics. A scientific report will be presented and evaluated.

NUTR 403 - Therapeutic Nutrition Laboratory I (8 Cr. : 0 Lec : 24 Cln : 0 Tut)

The course will be implemented through practical training in hospitals under the supervision of staff members. It includes studies, reports, and group discussions. Prereq.: NUTR 308.

NUTR 404 - Therapeutic Nutrition Laboratory II (8 Cr. : 0 Lec : 24 Cln : 0 Tut)

The course will be implemented through practical training in hospitals under the supervision of staff members. It includes dietary prescription and formation to practical suffering from various diseases reporting and group discussions. Prereq.: NUTR 403.

NUTR 405 - Nutrition Intervention (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course is directed to nutrition intervention programs at the community level. It focuses on the criteria for the development of an intervention program, and how to select a program according to the nutritional problems prevailing in the community in view of the social, cultural, educational factor and the available economic resources. The importance of periodic and final evolution will be discussed. Prereq.: NUTR 203.

Department & Faculty Electives

NURS 106 - Nutrition for Nurses (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course presents the role of the nurse in the administration of dietary services in the hospital, the interrelationship of the disciplines of food preparation, distribution and the quality of the provided meals. The course emphasizes the role of the nurse in providing appropriate nutrition in health and disease through their interaction with the dietitian and the physician.

NUTR 211 - Food Technology (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

The course focuses on the technical aspects of food processing with emphasis on food industries common in the region. The course includes field visits to food processing establishments.

NURS 213 - Community Health (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course is designed to introduce students to the concepts of health and diseases. It enables students to apply the concept of primary health care in various community health settings. Culture and environmental aspects affecting community health will be emphasized. Special consideration will be directed toward family, adolescents, women and men health in the community.

NUTR 312 - Food Analysis (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

The course focuses on the chemical analysis of foods, its nutrients and chemical contents and its variation by processing and other modes of treatment. Practical: The students are trained on various analytical methods.

NURS 313 - Infection Control (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course focuses on theory in infection control, including infection control practices, transmission of disease and methods for prevention and control of pathogenes transmission. It is designed to ensure nurses' adoption of safe and ethical infection control practices. Important related practice standards, that are evidence - based and outline expectations from nurses, in all settings, will be declared and discussed.

NUTR 412 - Nutrition of the Athletes (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course focuses on the nutrition requirements of athletes practicing different types of sports, the nature, composition and timing of the meals appeal before and after competition, supplementation and its impact on physical performance.

University Requirement Elective Course

NUTR 001 - Principles of Nutrition (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course covers the nutritional aspects of carbohydrates, lipids, proteins, vitamins and minerals, their source, digestion, biological importance and recommended dietary allowances for different group. The course includes a simple description of nutritional disorders prevailing in the community.

1 Lecture = 1Cr. Hr.
2 - 3 Lab = 1Cr. Hr.
2 - 3 Cln = 1Cr. Hr.

Bachelor of Medical Laboratory Technology (120 Cr. Hr.)

Curricula

First Semester			Cr.
CHEM	117	General Chemistry	3
PHYS	131	Physics	2
BIOL	107	Basic Biology	2
PHYL	121	Physiology	2
ANAT	123	Human Anatomy	2
		Elective[1]	4
			15

Second Semester			Cr.
MATH	108	Biostatistics	2
CHEM	118	Organic Chemistry	3
BCHM	102	Biochemistry	3
BIOL	118	Microbiology	3
		Elective[1]	4
			15

Third Semester			Cr.
CHEM	225	Analytical Chemistry I	4
MLAB	201	Specimen Preparation	3
MLAB	203	Pathology	3
BCHM	217	Advanced Biochemistry	3
		Elective[1]	2
			15

Fourth Semester			Cr.
CHEM	226	Analytical Chemistry II	4
MLAB	202	Endocrinology	2
MLAB	204	Parasitology	3
MLAB	206	Quality Management	2
		Elective[1]	2
		Elective [2]	2
			15

Fifth Semester			Cr.
MLAB	301	Immunology & Serology	2
MLAB	303	Hematology	4
MLAB	305	Virology	2
MLAB	307	Clinical Chemistry	4
		Elective[1]	2
		Elective [2]	2
			16

Sixth Semester			Cr.
MLAB	302	Molecular Genetics	3
MLAB	304	Mycology	2
MLAB	306	Medical Bacteriology	3
MLAB	308	Histopathology	3
MLAB	310	Pharmacology	3
		Elective[1]	2
			16

Seventh Semester			Cr.
MLAB	401	Blood Banking	3
MLAB	403	Toxicology	3
MLAB	405	Biomedical Engineering	2
MLAB	407	Food Microbiology	2
		Elective [2]	4
			14

Eighth Semester			Cr.
MLAB	402	Forensic Chemistry	3
MLAB	404	Advanced Topics in Laboratory Analysis	3
MLAB	406	Analytical Methods (Lab)	8
			14

[1] A total of 16 credits is required as General University Requirements: 7 credits are selected from the university mandatory courses list including: ARAB 001 (2 Cr.), ENGL 001 (2 Cr.), CMPG 001 (2 Cr.), BLAW 001 (1 Cr.), and another 9 credits are selected from the University Elective courses list.

[2] Selected from courses offered by the department and the faculty.

Mandatory Courses

Common Courses for the Departments of Nutrition & Dietetics & Medical Lab Technology

ANAT 123 - Human Anatomy (2 Cr. : 1 Lec : 3 Lab : 0 Tut)

Introduction including anatomical terms, position and movements. Different systems of the body including osseous, joints, muscular, cardiovascular, lymphatic, respiratory, digestive, urogenital, endocrine, nervous and their clinical applications. Practical: Practical study of the human skeleton, human heart and its big blood vessels, human lungs and their pleurae, abdominal and pelvic viscera. Radiological anatomy: Study of some x - ray films of different organs and bones.

BIOL 107 - Basic Biology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Life, chemical composition of protoplasm; Importance; Physical characteristics of protoplasm. Cell division, mammalian physiology; Nutrition, digestion, metabolism, circulation, respiration, excretion, chemical and nervous coordination. Principles of taxonomy. Structure, biology and life cycle of the following phyta: Protozoo, coelenterata, platyhelminthes, aschelminthes, annelida and arthopoda.

BIOL 118 - Microbiology (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Introduction to microbiology, morphology and structure of prokaryotic cells, culture requirements and identification procedures, pure cultures and methods of preservation, bacterial nutrition, cultivation and culture media, bacterial reproduction and growth, factors affecting microbial growth, prokaryotic diversity, bacteriopages. Practical: Preparation of culture media, isolation of bacteria from different sources, staining of bacteria, bacterial count, pure culture techniques.

BCHM 102 - Biochemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

The course will cover the definition classification of carbohydrates, lipids and proteins, their essential metabolic pathways. Nucleic acids structure, functions and chemistry. Enzyme classification and functions, water and electrolytes balance in biological system. Vitamins and minerals and their role in metabolism. Prereq.: CHEM117.

CHEM 117 - General Chemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Introduction to basic concepts of chemistry, chemical reactions and calculations, the three physical states of matter (gases, liquids and solids), solutions, chemical equilibrium, Ionic equilibrium. Periodic table and properties of the elements, nomenclature. Theories of atomic structure, atomic spectra, and chemical bonding.

CHEM 118 - Organic Chemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Chemistry of saturated and unsaturated aliphatic and aromatic hydrocarbons: Preparations, reactions and mechanisms. Study of the chemistry of alkyl halides and alcohols. Substitution and elimination reactions. Practical: Applied experiments related to the above topics.

MATH 108 - Biostatistics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Types of variables, discrete, continuous and random variables, binomial, normal and t distribution probability and probability distribution, frequency distribution and graphical presentation of data, hypothesis testing, ANOVA, linear regression and correlation, types of samples, sampling technique and error will be discussed.

PHYL 121 - Physiology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course in human physiology aims to introduce the students to the physiology of homeostasis and to study the functions of body systems that consist of the following: Blood, Autonomic Nervous System (ANS), excitable system, renal system, respiratory system, endocrine system, cardiovascular system, central nervous system, digestive system.

PHYS 131 - Physics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Heat and temperature, thermal expansion, heat measurements, calorimetry, mechanical equivalent of heat, transfer of heat by: Conduction, convection and radiation. Periodic motions, addition of simple harmonic motions, vibrations of physical systems, forced vibrations and resonance, coupled oscillations and normal modes, longitudinal and transverse wave motion, standing waves, interference.

Medical Laboratory Technology

BCHM 217 - Advanced Biochemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Glucose homeostasis: Sources of blood glucose, glucose utilization, role of tissues and organs in glucose homeostasis, role of hormones; Glycolipids; Metabolism in starvation, diabetes mellitus, and injury: Liver, adipose tissue, skeletal muscle, brain; Plasma lipoproteins: General structure of lipoprotein molecule, function of apoproteins, chylomicrons and VLDL, LDL, HDL; Collagen: Structure, biosynthesis, collagen types, role of vitamin C in synthesis, degradation, adrenal medulary hormones; Biochemistry of neurotransmitters: Function, synapses and synaptic transmission. Biochemistry of tissues: Muscle tissue (types of muscles, general criteria of muscle, skeletal muscles, cardiac muscle, familial hypertrophic cardiomyopathy smooth muscle), adipose tissue, liver, kidney; Post - translational modification: Secreted and membrane - associated proteins, proteolytic cleavage, glycoproteins lysosomal targeting of enzymes. Prereq.: BCHM 102.

CHEM 225 - Analytical Chemistry I (4 Cr. : 3 Lec : 2 Lab : 0 Tut)

Introduction to quantitative chemical analysis including theories and principles of gravimetric and volumetric techniques (acid - base, redox, precipitation, complexometric reactions and titrations). Practical: Applied experiments related to the above topics. Prereq.: CHEM 117.

CHEM 226 - Analytical Chemistry II (4 Cr. : 3 Lec : 2 Lab : 0 Tut)

Liquid - liquid extraction. Chromatographic methods of analysis: Gas chromatography, high performance liquid chromatography. Thin layer chromatography, electrophoresis, spectrophotometry, fluorometry, automated chemical analyzers. Prereq.: CHEM 225.

MLAB 201 - Specimen Preparation (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Entails the study of methods used to prepare fresh specimens or fixed specimens. In turn this needs the different stains applied to demonstrate the components of the specimen. The specimen will be examined by both light microscopes or more specialized microscopes as the electron and fluorescent microscopes. Different methods of staining will be used to demonstrate the different tissues and organs. Fresh specimens including blood films and fresh biopsy specimen should be performed at the end of the course. Blood film stained with Leishman stain and paraffin sections for long term study would be performed.

MLAB 202 - Endocrinology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This unit enables the student to identify the major endocrinal disorders with emphasis on the clinical skills which help him to assess and diagnose common disorders with referral of chronic and complicated cases. The course will cover: Common symptoms and signs of endocrinal disorders, diabetes mellitus, hypoglycemia, thyrotoxicosis, hypothyroidism, cushing syndrome. Addison syndrome, hyperparathyroidism and metabolic bone disease, tetany and calcium hemeostasis, acromegaly and pituitary disorders, diabetes insipidus and SIADH, stunted growth, obesity.

MLAB 203 - Pathology (3 Cr. : 2 Lec : 3 Lab : 0 Tut)

The course will cover: Introduction; Basics: Pathology, disease, etiology and pathogenesis, morphological changes, manifestations, fate and complications and cell injury: Definition, causes, types and patterns of cell responses, definition, causes and types. Inflammation and repair: Classification of cells, regeneration + repair, healing of skin wounds and its complications, hemodynamic disturbances: Neoplasia, spred, grading and staging, examples of beginning tumors, examples of malignant tumors, special forms of neoplasia.

MLAB 204 - Parasitology (3 Cr. : 2 Lec : 3 Lab : 0 Tut)

The course introduces students to different types of parasitic diseases. Classification, protozoa, helminths, arthropods. Selected medical parasites will be covered and their life cycles will be highlighted. Sources of parasitic infection, modes of transmission, methods of control and prevention, epidemiology of parasitic infections. Practical: Classification of parasites: Methods of sampling materials from infected persons. Methods of diagnosis and identification of parasites.

MLAB 206 - Quality Management (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course focuses on the implementation of quality assurance in different areas of health care laboratories through the application of national and international standards and benchmarking. The course covers the effective and economic use of available facilities and equipments. Improving quality through automation and upgrading laboratory procedures and facilities.

MLAB 301 - Immunology & Serology (2 Cr. : 1 Lec : 3 Lab : 0 Tut)

Study the basics of immune response whether innate or specific and the mechanisms of specific immune response: Humoral and cell medicated, how there is down - regulation after the offending antigen is eliminated, also types of antigens and antibodies will be studied and the types of invitro antigen - antibody reaction will be studied in the laboratory. Types and examples of hypersensitivities will be studied.

MLAB 302 - Molecular Genetics (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Study the basics of genetics that allow understanding of the genetic background of inherited disorders and diseases with genetic contribution, understand the principles of gene therapy. The course will cover: Normal chromosomes structure and chromosomal analysis, chromosomal disorders and ISCN, pattern of inheritance, molecular diagnosis of genetic diseases: Identify the molecular basis of disease and strategies for diagnosis, discuss clinical application of molecular genetics, enumerate the indications of molecular testing, discuss basic methodology used in molecular analysis; Carcinogenesis, gene therapy, demonstrative practical sessions: Karyotoype preparation, nuclei acid extraction, electrophoresis, methods of detection of mutation.

MLAB 303 - Hematology (4 Cr. : 2 Lec : 6 Clinical : 0 Tut)

This course aims to provide students with the knowledge and skills necessary to diagnose and manage the common benign and malignant hematological disorders. The course will cover: Hematological diseases, haematopoiesis, megaloblastic anemia, iron deficiency anemia, heamolytic anemia, aplastic anemia and bone marrow failure, leukemia, myeloproliferative disorders, lymphomas, splenomegaly and hypersplenism, bleeding disorder and anticoagulants.

MLAB 304 - Mycology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Morphology and taxonomy of fungi internal structure and chemical composition of fungal cells, classification of fungi, microbial nutrition, metabolism, development and growth. Practical: Study of some representative example of fungi (myxomycotina, phycomycetes, ascomycetes, bacidiomycetes and deuteromycetes) studying the effects of different media and other factors on fungal growth.

MLAB 305 - Virology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Study the general features of viruses, replications and classifications of viruses, antiviral chemotherapy, types of viral vaccines. The laboratory diagnosis of viruses will be studied. Then each virus of medical importance will be studied, its clinical picture and isolation and identification of viruses laboratory, the treatment of this viral infection and the vaccine to prevent the infection will be studied.

MLAB 306 - Medical Bacteriology (3 Cr. : 2 Lec : 3 Lab : 0 Tut)

General features of medically important bacteria and their growth requirements will be studied. A basic knowledge of bacterial genetics will be included so that the basis of bacterial resistance to antibacterial agents could be understood. The identification of bacteria including the gene probing and PCR technique will be studied, then each medically important bacteria will be studied as regards its virulence factors, diseases it produces, laboratory isolation, identification and sensitivity.

MLAB 307 - Clinical Chemistry (4 Cr. : 3 Lec : 3 Lab : 0 Tut)

This course will cover the principles and disciplines of clinical chemistry, clinical hematology and cytogenetic. The course will entail various analytical procedures, instrumentations and methods used for clinical analysis. Correlation of laboratory results with clinical manifestations is also an integral part of this course. The course will cover all aspects of routine clinical chemistry testing such as carbohydrates, electrolytes, acid - base balance, blood gases, nitrogen metabolites, proteins, enzymes, lipids and lipoproteins and liver functions. Clinical chemistry and endocrinology, tumors markers, chromatography, antimicrobial agents and medial mycology will be studied. Prereq.: CHEM 117.

MLAB 308 - Histopathology (3 Cr. : 2 Lec : 3 Lab : 0 Tut)

This course of study aims to provide students with information about disease, utilizing laboratory means, with especial emphasis on the morphological changes developing. The study includes "Histopathology and gross pathology" methods. Histopathology study depends on the routine Hematoxylin and eosin stained paraffin sections, as well as using the different special stains needed in histopathological diagnosis. The practical will cover the Biopsy and its types, and how to describe gross specimens.

MLAB 310 - Pharmacology (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Introduction to the general principles of pharmacology, mode and site of action of drug, giving examples of drugs acting on different symptoms.

MLAB 401 - Blood Banking (3 Cr. : 1 Lec : 6 Cln : 0 Tut)

This course will cover the following items, definition of blood grouping, serology and lab investigations carried out for their identification, different serological tests to exclude blood transmitted diseases will be studied, different methods of blood sampling will be discussed and methods for preparation of specimens, criteria for blood banking including methods of preservation will be demonstrated, complications of mismatching and bad preservation will be also discussed.

MLAB 402 - Forensic Chemistry (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

This course aims to teach the students skills in the field of forensic medicine. The course entails lectures and practical sessions. The course will cover: Identification of blood, identification of seminal stains, examination of hairs and fibers, toxic plants, detection of metallic poisons, color tests (detection of drugs in biological body fluids), microcrystal tests (detection of plant alkaloids), chromatography, proper sampling, preserving and securing different items from medico, legal and toxicological cases, genetic markers. Prereq.: CHEM 117.

MLAB 403 - Toxicology (3 Cr. : 1 Lec ; 6 Cln : 0 Tut)

The course deals with the nature, dynamics and detection of poison. The course will cover: General toxicology, diagnose poisoning, assess severity of poisoning, generally manage acute intoxications as regards. Carry out laboratory investigations to identify: Corrosive poisons, metallic poisons, poisonous plants, volatile poisons, hallucinogens, central nervous system depressants, pesticides, animal poisons, food poisoning. Define common drugs and substances of abuse.

MLAB 404 - Advanced Topics in Laboratory Analysis (3 Cr. : 3 Lec : 0 Lab : 0 Tut)

This course covers newly developed analytical and laboratory methods. The course provides theoretical bases for new techniques, training on new developed laboratory equipment. Prereq.: CHEM 226.

MLAB 405 - Biomedical Engineering (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course offers a simple description of the principle of biomedical engineering. The contents include bioelectric phenomena, characteristics of biomedical and pressure sensors, bioinstrumentation, biomechanics, tissue engineering, biotechnology, digital and analog imaging, biomaterials and tissue engineering.

MLAB 406 - Analytical Methods (LAB) (8 Cr. : 0 Lec : 24 Lab : 0 Tut)

Over a period of 4 months, students will be trained in certified laboratories to apply the theoretical knowledge and gain practical experience in the areas of clinical chemistry, endocrinology, hematology, microbiology, serology, urine analysis, parasitology, cytogenetics and blood banking.

MLAB 407 - Food Microbiology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

Classification of organisms of importance to food including bacterial, viral, protozoal and fungal pathogens; CJD and related "prion" diseases; Examples on each category of organisms must be given and detailed description of the disease(s) they cause should be highlighted; Appropriate measures taken to control food borne diseases. Practical: Practical classes should include basic microbiology techniques including growth curves, biochemical characterization and isolation and identification of organisms from different food and water samples. Prereq.: BIOL 118.

Department & Faculty Electives

COMM 125 - Epidemiology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course will cover: Epidemiology: Definition, components and uses, sources of epidemiological data, epidemiological variables, the epidemiological methods: Descriptive epidemiological studies. Analytic epidemiological studies, measures of disease frequency, mortality rates, proportionate mortality rate, general principles of prevention and control, surveillance, environment health epidemiology of selected diseases.

MLAB 411 - Clinical Hematology (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

This course aims to provide students with the knowledge and skills necessary to diagnose and manage the common benign and malignant hematological disorders. The course will cover: Common symptoms and signs of hematological diseases, haematopoiesis, megaloblastic anemia, iron deficiency anemia, heamolytic anemia, a plastic anemia and bone marrow failure, acute leukemia, chronic leukemia, myeloproliferative disorders, lymphomas, lymphadenopathy, splenomegaly and hypersplenism, clinical manifestations of cancer, bleeding disorder, blood transfusion and anticoagulants. Prereq.: MLAB 303.

NURS 213 - Community Health (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course is designed to introduce students to the concepts of health and diseases. It enables students to apply the concept of primary health care in various community health settings. Culture and environmental aspects affecting community health will be emphasized. Special consideration will be directed toward family, adolescents, women and men health in the community.

NURS 313 - Infection Control (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course focuses on theory in infection control, including infection control practices, transmission of disease and methods for prevention and control of pathogenes transmission. It is designed to ensure nurses' adoption of safe and ethical infection control practices. Important related practice standards, that are evidence - based and outline expectations from nurses, in all settings, will be declared and discussed.

NURS 308 - Nursing Research (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Focuses on the process involved in the scientific approach and its application to nursing. Special emphasis is on the basic research steps, the research design, assessment measures, and data analysis with a focus on research utilization. Students are required to submit a simple research project.

NURS 414 - Health Informatics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course focuses on the history of health care informatics, basic informatics concepts, and health information management applications. The student progresses along a continuum: From developing knowledge and understanding of basic concepts and methods of health care informatics; To learning about specific information management applications in health care administration, practice, education, and research; and finally to a hands - on experience with a specific application of his / her own choosing.

NURS 415 - Health Education (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course provides students with the educational principles necessary for provision of health education to patients and public to increase their awareness of appropriate health practices and symptoms of illness to make them more inclined to seek medical help.

NURS 417 - Quality Control (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

It is intended to provide the students with the theory and knowledge necessary to deal with advanced management practice issues related to quality control and development. The course also focuses on the development of skills necessary for dealing with quality standards required in today's practice in health care organizations. Students who complete this course will have a far reaching knowledge base in which to practice quality related role and produce effective results.

PHAR 215 - Clinical Pharmacy (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

Pharmaceutical care, application, interpretation of clinical data, pathophysiology, information resources, drug induced diseases, drugs interaction and side effects, clinical PCK and application.

PHAR 520 - Forensic Pharmacognosy (2 Cr. : 2 Lec)

Plants and natural products that constitute potential health hazards. Drug dependence, narcotic analgesics, psychoenergetics and hallucinogens of plant origin. Mycotoxins as a serious threat to general health and safety of the community. Hair and fibers as significant evidence in crime investigation.

1 Lecture = 1Cr. Hr.
2 - 3 Lab = 1Cr. Hr.
2 - 3 Cln = 1Cr. Hr.

Bachelor of Physical Therapy (120 Cr. Hr.)

Curricula

First Semester			Cr.
ANAT	149	Anatomy I	4
PHYL	123	Physiology I	3
MICA	151	Histology	2
BCHM	153	Medical Biochemistry	2
PHTH	101	Principles in Rehabilitation	1
		Elective[1]	3
			15

Second Semester			Cr.
ANAT	152	Anatomy II	4
PHYL	124	Physiology II	3
PHYS	113	Biophysics	2
PHTH	108	Physical Therapy Intervention I	3
		Elective[1]	3
			15

Third Semester			Cr.
PHTH	201	Kinesiology & Biomechanics I	2
PHTH	203	Assessment in Physical Therapy I	3
PHTH	205	Physical Therapy Intervention II	4
PHTH	201	Pathology	2
		Elective[1]	1
		Elective [2]	3
			15

Fourth Semester			Cr.
PHTH	202	Kinesiology & Biomechanics II	2
PHTH	204	Assessment in Physical Therapy II	3
PHTH	206	Physical Therapy Intervention III	4
PHAR	223	Pharmacology	2
		Elective[1]	4
			15

Fifth Semester

			Cr.
PHTH	301	Musculoskeletal Physical Therapy I	5
PHTH	303	Geriatric Physical Therapy	2
PHTH	305	Integumentary Physical Therapy	2
PHTH	307	Medical Surgical Physical Therapy	3
		Elective[1]	2
		Elective [2]	1
			15

Sixth Semester

			Cr.
PHTH	302	Musculoskeletal Physical Therapy II	5
PHTH	304	Cardiopulmonary Physical Therapy	4
PHTH	306	Obstetric & Gynaecological Physical Therapy	3
PHTH	308	Prosthetics & Orthotics	1
PHTH	310	Medical Imaging & Diagnostics for Physical Therapy	1
		Elective[1]	1
			15

Seventh Semester			Cr.
PHTH	401	Neurological Physical Therapy	4
PHTH	403	Pediatric Physical Therapy	4
PHTH	405	Electro Diagnostics for Physical Therapy	2
PHTH	407	Education in Physical Therapy	1
PHTH	409	Research Methodology	1
MATH	108	Biostatistics	2
		Elective [2]	1
			15

Eighth Semester			Cr.
PHTH	402	Evidence Based Practice	2
PHTH	404	Differential Diagnosis in Physical Therapy	2
PHTH	406	Occupational Health in Physical Therapy	1
PHTH	408	Laws & Ethics of Professional Practices	1
PHTH	410	Administration & Management in Physical Therapy	1
PHTH	412	Research Project	3
		Elective[1]	2
		Elective [2]	3
			15

[1] A total of 16 credits is required as General University Requirements: 7 credits are selected from the university mandatory courses list including: ARAB 001 (2 Cr.), ENGL 001 (2 Cr.), CMPG 001 (2 Cr.), BLAW 001 (1 Cr.), and another 9 credits are selected from the University Elective courses list.

[2] Selected from courses offered by the department and the faculty.

Mandatory Courses

PHTH 101 - Principles in Rehabilitation (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course will provide an overview of physical therapy as a profession. It will also cover an introduction and definition of terms especially those related to rehabilitation and handicap. It covers the physical therapist scope of practice, standards of practice for physical therapy, aims of rehabilitation, categories of handicap, causes of handicap, different specialties involved in rehabilitation, principles of evaluation and giving effective feedback, the concept of comprehensive rehabilitation, including medical (physical, occupational, speech therapy...), psychological, and social rehabilitation as well as vocational guidance.

PHTH 108 - Physical Therapy Intervention I (3 Cr. : 2 Lec : 3 Cln : 0 Tut)

This course covers massage therapy, thermotherapy, hydrotherapy, cryotherapy, mobility aids, basic patient handling and transfer skills, in addition to foundations of therapeutic exercise, range of motion and peripheral joint mobilization, stretching, and mechanotherapy. The lab application allows the student to apply didactic knowledge gained through the course. Co - requisite: PHYS 113.

PHTH 201 - Kinesiology & Biomechanics I (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

Topics taken are: Forces and its types, force systems, internal force and types of contraction, center of gravity, stability and equilibrium, simple body machines, two joint muscles, pulley systems, types of motion, Newton's laws in linear and angular motion, fluid mechanics, surface tension. In addition to different orthopedic biomechanics topics including bone, muscle, and articular mechanics. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 202 - Kinesiology & Biomechanics II (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

This biomechanics course covers: Regional biomechanics of hip, knee, patellofemoral, ankle, foot, shoulder, and lumbar joints. Different topics related to normal and pathological gait, in addition to instrumentations used in gait analysis. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 203 - Assessment in Physical Therapy I (3 Cr. : 1 Lec : 6 Cln : 0 Tut)

This course covers many topics including evaluation, physical examination, and specific tests and measurements for upper limb, cervico - thoracic spine and temporomandibular joint. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 204 - Assessment in Physical Therapy II (3 Cr. : 1 Lec : 6 Cln : 0 Tut)

This course covers many topics including evaluation, physical examination, and specific tests and measurements for lumbo sacral spine, pelvis, and lower limb, in addition to gait assessment. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 205 - Physical Therapy Intervention II (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

This course discusses electrotherapy and biofeedback in addition therapeutic exercise, range of motion and peripheral

joint mobilization, stretching, and mechanotherapy for upper limb, cervico - thoracic spine and temporomandibular joint. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 206 - Physical Therapy Intervention III (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

This course discusses ultrasound, short wave, infrared, laser, ultraviolet, traction, intermittent mechanical compression, continuous passive motion, tilt table as well as gym related equipment. This course also covers therapeutic exercise, range of motion and peripheral joint mobilization, stretching, and mechanotherapy for lumbo sacral spine, pelvis, and lower limb, in addition to gait training. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 301 - Musculoskeletal Physical Therapy I (5 Cr. : 2 Lec : 9 Cln : 0 Tut)

This course will cover knowledge related to general musculoskeletal conditions, as well as disorders, sports injuries, and surgeries of upper limb, temporomandibular joint, and ribcage. Physical therapy assessment, treatment planning, intervention skills, and prevention are thus discussed for each of the conditions or surgeries covered. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: ANAT 149.

PHTH 302 - Musculoskeletal Physical Therapy II (5 Cr. : 2 Lec : 9 Cln : 0 Tut)

This course will cover knowledge related to musculoskeletal conditions, disorders, sports injuries, and surgeries of spine, pelvis, and lower limb. Physical therapy assessment, treatment planning, intervention skills, and prevention are thus discussed for each of the conditions or surgeries covered. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: ANAT 152.

PHTH 303 - Geriatrics Physical Therapy (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

Concerning geriatrics, emphasis will be done on all changes related to aging, study of the characteristics of the geriatric patient, especially the physiological, psychological and social aspects. Physical therapy assessment, plan of care, and intervention are thus discussed for elderly patient. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: PHYL 123, PHYL 124.

PHTH 304 - Cardiopulmonary Physical Therapy (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

This course emphasizes on diseases, disorders, and surgeries related to cardiovascular system and respiratory system. It will also focus on proper assessment, treatment planning, and physical therapy intervention for the topics discussed. Also this course will cover special knowledge about critical care evaluation and intervention. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: ANAT 149.

PHTH 305 - Integumentary Physcial Therapy (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

This course will discuss integumentary system, common skin disorders, examination of integumentary integrity, physical therapy intervention for impaired integumentary integrity, burns and wounds, as well as well as body sculpture techniques. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: ANAT 149, MICA 151.

PHTH 306 - Obstetric & Gynecological Physical Therapy (3 Cr. : 2 Lec : 3 Cln : 0 Tut)

This course will cover knowledge related to obstetrics and gynecology. Physical therapy assessment, treatment planning, and intervention skills are discussed for women during antenatal, labor, delivery and postnatal periods, as well as for different gynecological problems. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: ANAT 152.

PHTH 307 - Medical Surgical Physical Therapy (3 Cr. : 2 Lec : 3 Cln : 0 Tut)

This course will focus on selected topics in internal medicine, general surgeries, plastic surgery, and obesity. Followed by assessment, treatment planning and proper physical therapy intervention for each pathology, surgery or disorder discussed. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 308 - Prosthetics & Orthotics (1 Cr. : 1 Lec : 0 Cln : 0 Tut)

This course covers general concepts of orthotics and prosthetics, upper limb orthoses and prosthetic devices, lower limb orthoses and prosthetic devices, and spinal orthoses, in addition to physical therapy intervention in cases of need for orthotics or prosthetics. Adhesive taping is also discussed. Prereq.: PHTH 202.

PHTH 310 - Medical Imaging & Diagnostics for Physical Therapy (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

Related topics covered are: The study of the principles, procedures and interpretation of diagnostic imaging techniques. Emphasis is on plain film radiography, myelograms, ultrasound, CT scans, magnetic resonance imaging and nuclear medicine. Prereq.: ANAT 149, ANAT 152.

PHTH 401 - Neurological Physical Therapy (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

This course covers concepts, practical applications, and strategies based on theories of motor skill development, motor control, and motor learning. Also, this course will discuss knowledge related to various neurological conditions, dysfunctions, and surgeries of central and peripheral nervous system, in addition to physical therapy assessment, treatment planning, intervention skills, and different problem solving approach of various topics discussed. Selected psychiatric conditions and their corresponding physical therapy management are also discussed. Focus on pain management will be done through this course. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: ANAT 152, PHYL 124.

PHTH 402 - Evidence Based Practice (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

This course is based on Sackett's model of evidence - based practice, which is define as "the explicit, judicious, and conscientious use of the current best evidence from health care research in making decisions about the health care of individuals...". This course allows students to integrate research evidence, clinical expertise, and patient values in order to make the best clinical decisions. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 403 - Pediatric Physical Therapy (4 Cr. : 2 Lec : 6 Cln : 0 Tut)

An overview of embryologic development, followed by normal infant / child development to 5 years of age with an emphasis on motor development. This course also covers concepts, practical applications, and strategies based

on theories of motor skill development, motor control, and motor learning. Also, this course will discuss knowledge related to selected pediatric conditions, dysfunctions, and surgeries including physical therapy assessment, treatment planning, intervention skills, and different problem solving approach. The clinical application and practice allows the student to apply didactic knowledge gained through the course.

PHTH 404 - Differential Diagnosis in Physical Therapy (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

Differential diagnosis provides an opportunity for students to integrate knowledge of pathology of systems with knowledge from a physical therapy examination in order to differentiate a physical therapy diagnosis from the need to refer to other medical professionals. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: PHTH 203, PHTH 204.

PHTH 405 - Electro Diagnostics for Physical Therapy (2 Cr. : 1 Lec : 3 Cln : 0 Tut)

This course will cover electrodiagnostic modalities used in medicine and that are relevant to physical therapist. The clinical application and practice allows the student to apply didactic knowledge gained through the course. Prereq.: PHYL 124.

PHTH 406 - Occupational Health in Physical Therapy (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course covers many occupational health and safety topics. Emphasize will be on guidelines for isolation precautions, environmental considerations, ergonomics, and role of physical therapist in occupational health.

PHTH 407 - Education in Physical Therapy (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course emphasizes the development of effective teaching and learning strategies as it applies to physical therapy in the clinical setting.

PHTH 408 - Laws & Ethics of Professional Practice (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course covers topics related to the Physical Therapy as an allied health specialty. Laws and ethics that control practice in Lebanon as well as the relationship with other medical specialties and governmental foundations are discussed.

PHTH 409 - Research Methodology (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course covers topics related to research such as research design, problems related to measurement, and data analysis and interpretation, in addition to steps to write research manuscript, and article criticism. During this course, the students will be grouped by groups of 2 to 4 and each group must decide the topic of the research project they are going to apply in the last semester. At the end of this course each group of students must present a form of a written protocol of the research project to be done.

PHTH 410 - Administration & Management In Physical Therapy (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course deals with the principles of management, institutional types, medical records, elements of patient / client management, departmental / personal management, budgeting, quality assurance and improvement, and professional and accreditation standards.

PHTH 412 - Research Project (3 Cr. : 0 Lec : 0 Lab : 9 Cln : 0 Tut)

The project provides the student with the opportunity to develop skills in an area of research. This involves a critical analysis of pertinent literature, the development and execution of an activity, analysis of the data or outcomes of the activity, and the generation of a manuscript. This project is an academic experience, in that the student integrates many of the skills acquired through formal coursework and clinical education. All students present their work in an open oral presentation and defense in the last semester of study.

PHYS 113 - Biophysics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course covers many topics statics and dynamics, thermodynamics and heat transfer, physics related to hydrotherapy and buoyancy, bioelectricity and biomagnetism, acoustic and lectromagnetic radiations in physical therapy, and radiation protection.

ANAT 149 - Anatomy I (4 Cr. : 2 Lec : 6 Lab : 0 Tut)

Introduction to anatomy including anatomicomedical terminology, skin and fascia, skeletal system, muscular system, cardiovascular system, respiratory system, lymphatic system, and nervous system. This course also covers regional anatomy of. Upper limb: Bones, muscles, blood vessels, brachial plexus, nerves, and joints. Head and neck: Bones of the skull, bones of the neck, muscles of the face and scalp, muscles of mastication, muscles of the neck, nerves of head and neck, cranial nerves, vertebral and temporomandibular joint. Thorax: Bones of the thoracic cage, intercostal muscles and diaphragm, broncho - pulmonary segment and lungs, and heart. Knowledge is transmitted to students through lectures, videos, dissection and identification of structures in the cadaver, as well as study of charts and models. Radiological anatomy: study of some x - ray films of different organs and bones.

ANAT 152 - Anatomy II (4 Cr. : 2 Lec : 6 Lab : 0 Tut)

This anatomy course covers many topics: Abdomen: Anterior and posterior abdominal wall, nerves of the abdomen, lumbar plexus, abdominal viscera. Pelvis: Bones, muscles, and joints of the pelvis, sacral plexus, and pelvic viscera. Lower limb: Bones, muscles, blood vessels, nerves, and joints.

Also this course discusses the spinal cord: Morphology and blood supply; Cerebrum: Cerebral cortex (main centers and its arterial supply), basal ganglia, internal capsule, diencephalon (thalamus, hypothalamus, geniculate bodies); Cerebellum and its blood supply; Brain stem: General features and nuclei of cranial nerves; Ventricular system: Third, forth, and lateral ventricles, and cerebrospinal fluid; and circle of Willis. Knowledge is transmitted to students through lectures, videos, dissection and identification of structures in the cadaver, as well as study of charts and models. Radiological anatomy: Study of some x - ray films of different organs and bones.

MATH 108 - Biostatistics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

Types of variables, discrete, continuous and random variables, binomial, normal and t distribution probability and probability distribution, frequency distribution and graphical presentation of data, hypothesis testing, ANOVA, linear regression and correlation, types of samples, sampling technique and error.

MICA 151 - Histology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

The histology course includes the following subjects: Cytology, epithelium, connective tissue proper and supporting

connective tissue (cartilage and bone), muscle, nervous tissue, blood, and the following systems: Blood vascular system, lymphatic system, skin and its appendages, respiratory system, and central nervous system. The lab application allows the student to apply didactic knowledge gained through the course.

BCHM 153 - Medical Biochemistry (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

The course will cover the definition, classification of carbohydrates, lipids and proteins, their essential metabolic pathways. Nucleic acids structure, functions and chemistry. Enzyme classification and functions, water and electrolytes balance in biological system. Vitamins and minerals and their role in metabolism. Biological membranes, structure and membrane transport. Fundamental of signal transduction, intracellular signal, transduction, types of receptors. Biological fluid. Tissue chemistry of epithelial and connective tissue, muscle and nervous tissue, cartilage and bone. Bioenergetics, TCA cycle. Muscle metabolism. Body fluid.

PHAR 223 - Pharmacology (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

An introduction to the chemistry, biochemistry and physiological actions of various pharmaceuticals. Fundamental concepts will be stressed and will include a discussion of drug receptors, drug receptor interactions, pharmacokinetics, enzyme induction, drug metabolism, drug safety and effectiveness and idiosyncratic reactions. Several major groups of drugs will be studied including: Central nervous system stimulants, hypnotics, narcotic analgesics, anti - inflammatory drugs, skeletal muscle relaxation drugs, cholinergics, adrenergics, adrenergic blocking drugs, antihypertensives, antihistamines, diuretics, adrenal steroids, anti - anemic drugs and antibiotics. The lab application allows the student to apply didactic knowledge gained through the course.

PATH 201 - Pathology (2 Cr. : 2 Lec : 0 Lab : 0 Tut)

This course covers many topics: Introduction and causes of cell injury; Inflammation; Repair and healing; Immune system diseases / syndromes circulatory disturbances; Blood disorders; Endocrine and metabolic disorders; Infectious diseases; Vitamin deficiency; Oncology; and diseases of bone and joints.

PHYL 123 - Physiology I (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

This course explains the blood including composition, function of red blood cells and white blood cells and platelets, homeostasis, and blood groups; Cardiovascular system including properties of cardiac muscle, cardiac output, heart rate and its regulation, the arterial blood pressure, tissue fluid formation and edema; Respiration including mechanics of pulmonary ventilation, pulmonary function tests, diffusion and transport of oxygen and carbon dioxide, control of breathing; Endocrine glands including thyroid gland, adrenal gland, calcium metabolism and endocrine pancreas; Body temperature and its regulation; Sports physiology including cardiovascular and respiratory changes during exercises. The lab application allows the student to apply didactic knowledge gained through the course.

PHYL 124 - Physiology II (3 Cr. : 2 Lec : 2 Lab : 0 Tut)

This course covers the following topics: Organization of the nervous system; Excitable tissues: The nerve (resting membrane potential, action potential, types of nerve fibers, conduction of nerve impulses), the muscle (the types of skeletal muscle fibers, neuromuscular junction, mechanism of muscle contraction); The autonomic nervous system: Subdivisions (sympathetic and parasympathetic and their function); The central nervous system: Sensory receptors, somatic sensations, reflexes including the stretch reflex, motor function of the nervous system (descending tracts,

lesions), cerebellum, vestibular system. The lab application allows the student to apply didactic knowledge gained through the course. Co - requisite: ANAT 152.

Department & Faculty Electives

PHTH 221 - Exercise as a Therapy (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

This course allows the student to identify different types of exercise training, application, and major physiologic effects. The lab application allows the student to apply didactic knowledge gained through the course.

PHTH 222 - Healing Massage Techniques (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

This course will discuss the history of manual massage. Then it will discuss different theories and applications of many famous manual massage techniques. An introduction to SPA treatment will also be discussed. The lab application allows the student to apply didactic knowledge gained through the course.

PHTH 224 - Principles in Occupational Therapy (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course covers the principles in occupational therapy including scope and general principles, relation with allied medical services, methods of assessment and restoration of function. Also this course will enlighten the evaluation and support of daily living activities, and finally the use of orthoses for upper and lower extremities.

PHTH 330 - Sophrology & Relaxation (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course covers different methods used for relaxation including principles and application.

PHTH 331 - Physical Therapy Intervention for Obesity (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

This course will discuss the obesity through life span (childhood, adulthood) as a pathology including causes, consequences, as well as physical therapy management.

PHTH 332 - Preparation for Painless Labor (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

In this course physical therapy intervention for preparation for painless labor is discussed. The lab application allows the student to apply didactic knowledge gained through the course.

PHTH 333 - Endermology & Body Shaping Therapies (2 Cr. : 1 Lec : 2 Lab : 0 Tut)

This course will discuss various advanced methods used in body shaping and endermology as therapies. The lab application allows the student to apply didactic knowledge gained through the course.

PHTH 334 - Athletic Taping & Bracing (2 Cr. : 1 Lec : 2 lab : 0 Tut)

This course will discuss various kinds of taping and bracing that can be used in athletics to prevent injury or to imply relative rest to joints of athletic patients. The lab application allows the student to apply didactic knowledge gained through the course.

PHTH 440 - Physical Therapy for Cancer Patient (1 Cr. : 1 Lec : 0 Lab : 0 Tut)

In this course, rehabilitation of cancer patient is discussed. Selected cases of cancer are chosen with their physical

therapy management.

PHTH 441 - Acupuncture & Reflexology (1 Cr. : 1 Lec : 0 Lab : 0 Tut)
This course covers topics related to reflexology and acupuncture including principles and methods of application.

PHTH 442 - Quality Improvement for Physical Therapist (1 Cr. : 1 Lec : 0 Lab : 0 Tut)
This course will cover the different strategies, policies, and procedures for high quality services.

PHTH 443 - Play Therapy Techniques (1 Cr. : 1 Lec : 0 Lab : 0 Tut)
This course will discuss different techniques of therapy for children in form of playing activities that can be used for therapeutic purposes.

PHTH 444 - Speech Therapy (1 Cr. : 1 Lec : 0 Lab : 0 Tut)
This course covers many topics concerning language, speech, swallowing, and voice disorders and management.

PHTH 445 - Pain Management in Physical Therapy (1 Cr. : 1 Lec : 0 Lab : 0 Tut)
This course discusses physiological theories of pain and the pain management strategies from the physical therapy point of view.

University Requirement Elective Courses

PHTH 001 - Stretching (2 Cr. : 2 Lec : 0 Lab : 0 Tut)
This course will define the different types, indications, contraindications, precautions, factors affecting, principles of application, and major physiologic effects of flexibility training.

PHTH 002 - Body Ergonomics (2 Cr. : 2 Lec : 0 Lab : 0 Tut)
This course covers basic knowledge concerning prevention of job related disease from the mechanical point of view.

1 Lecture = 1Cr. Hr.
2 - 3 Lab = 1Cr. Hr.
2 - 3 Cln = 1Cr. Hr.