School	
Major	Bachelor of Pharmacy

Major Requirements			
Code	**Title**	**Credits**	**Description**
PHAR665	Pharmacy Practice Experience IV(PPE IV)	6	Pharmacy Practice Experience III and IV (PPE III/IV) are series of fifteen weeks designed to provide students the opportunity to further develop their skills and knowledge base in pharmacy practice. The internship is fifteen weeks in length, three weeks of which each student will be under the direct supervision of the onsite hospital pharmacist and assigned faculty member preceptor. The studentâ□□s major tasks will be accomplished within the hospital pharmacy premises. The remaining twelve weeks are referred to as the Clinical Care Rotation, during which the intern will be assigned to a medical team in different wards. The intern will be on the floors with the health care professionals, by patient bedside and consulting charts under the supervision of onsite pharmacist and assigned faculty member. Each student will complete three major rotations and one elective rotation. The length of each rotation is three weeks. Students will have also opportunity to rotate within a tertiary hospital.
PHAR660	Pharmacy Practice Experience III (PPE III)	6	Pharmacy Practice Experience III and IV (PPE III/IV) are series of fifteen weeks designed to provide students the opportunity to further develop their skills and knowledge base in pharmacy practice. The internship is fifteen weeks in length, three weeks of which each student will be under the direct supervision of the onsite hospital pharmacist and assigned faculty member preceptor. The studentâ□□s major tasks will be accomplished within the hospital pharmacy premises. The remaining twelve weeks are referred to as the Clinical Care Rotation, during which the intern will be assigned to a medical team in different wards. The intern will be on the floors with the health care professionals, by patient bedside and consulting charts under the supervision of onsite pharmacist and assigned faculty member. Each student will complete three major rotations and one elective rotation. The length of each rotation is three weeks. Students will have also opportunity to rotate within a tertiary hospital.
PHAR656	Pharmacy Law	1	This portion of the Law and Ethics in Pharmacy Practice focuses on pharmacy law. The course will cover the Lebanese pharmacy rules and regulations that impact and regulate the practice of pharmacy. Topics including the regulation of medications, regulation of controlled substances, and the rules concerning pharmacy practice on the Lebanese territories will be extensively covered.
PHAR650	Pharmacy Dispensing Practice	2	The pharmacy dispensing practice course is a highly interactive laboratory sessio_n inside a virtual pharmacy (simulation setting). This simulation lab aims to heighten studentsâ□□ knowledge about medications and patient education, and develop their communication skills. The student will learn to dispense over the counter (OTC) and prescription medications accurately and safely, counsel patients efficiently and properly, manage effectively any conflict that might arise between the pharmacist and the patient__between the pharmacist and other health care professionals (physicians, pharmacist) and acquire leadership skills.

PHAR625	Pharmacoeconomics	3	This course presents an overview of the concept of pharmacoeconomics, and related models including cost-minimization analysis, cost effectiveness analysis, cost utility analysis, cost benefit analysis, and cost of illness evaluation. The course provides students with knowledge on different types of costs and benefits and identifies formulary decisions that are deemed necessary to regulate the pharmaceutical market. It will enable the students to utilize the Markov Modeling and discount rates, appraise pharmacoeconomic literature, and conduct a decision analysis plan.
PHAR620	Pharmacotherapeutics VI (Hematology/Oncology)	3	This 3-credit course enables the students to develop knowledge regarding the pathophysiology of the most common cancer diseases, risk factors, prevention, and treatment approaches based on updated guidelines.
PHAR615	Pharmacotherapeutics V (infectious Diseases)	3	The traditional practice of pharmacy has evolved over the past three decades from a practice primarily focusing on the preparation of medications to a practice primarily emphasizing on rational pharmacotherapeutics. The need for selecting the most appropriate medication, regimen, and dose while minimizing problems such as drug interactions, adverse drug reactions, and IV incompatibilities has become central to this new patient focused approach. Endemic and epidemic infectious diseases present a challenging field to pharmacists and other healthcare professionals. Infections caused by different pathogens in different areas of the body can lead to complications if left untreated. Pharmacists have an important role in this field to rationalize treatment, prevent the emergence of antibiotics resistance, and minimize cost.
PHAR610	Toxicology	3	This 3-credit course presents the basic principles of toxicology including areas of toxicology, factors affecting toxicity in humans and disposition of toxins in human body. The course also provides students with knowledge about diagnostic measures and clinical management (i.e. stabilization of vital function and specific antidotal measures) of poisonings. Poisoning with common groups of chemicals (pesticides, metals, solvents and common drugs) will be presented including, mechanism of toxicity, sources of exposure, major clinical manifestation and methods of treatment.
PHAR635	Parenteral Dosage Forms	2	This course introduces the students to all aspects of parenteral products, and demonstrates the relevance between drug delivery optimization and therapeutic outcomes. It also describes the pharmacy environment appropriate for parenteral products preparation and sterile compounding as defined by USP Chapter <797>.
PHAR606	Non-Prescription Drugs	3	This 3-credit course develops pharmacy studentsâ knowledge and problem solving skills needed to assess patientâs health status and practice self-treatment. Also, it introduces them to nonprescription medications approved by FDA along with nonpharmacological measures recommended to treat certain conditions. It highlights on conditions where self-treatment cannot be applied and referral to a primary care provider is needed. To add, it trains them on the proper selection of nonprescription medications and the use of certain devices. It also focuses on patient education and counseling regarding self-treatment and health related issues.

PHAR580	Pharmacy Practice Experience II (PPE II)	6	Pharmacy Practice Experience II introduces students to the philosophy and practice of pharmaceutical care, including patient counseling, monitoring plans, and patient outcomes, with emphasis on the role of the pharmacist as the primary manager of patient drug therapies. After the students finish their first and second professional years, they are required to actively participate in a twelve-week supervised experiential program in community pharmacy.
PHAR585	Pharmacy Seminar	2	The course is intended to improve and broaden the pharmacy studentsâ knowledge as well as their communication skills through performing thorough research on relevant topics that represent a challenge in the medical field. In addition, this course will enable students to acquire skills in biomedical literature evaluation in which they are asked to search and conduct an evaluation for a primary literature. The early exposure of students to journal clubs during their pharmacy education is a scholastic tool that can improve studentsâ ability to interpret up-to-date clinical evidence and apply it to practice.
PHAR570	Pharmacotherapeutics IV (Endocrinology/Dermatology)	3	This course identifies the pathophysiology, etiology, risk factors and signs and symptoms of most common endocrinologic and womenâs health related disorders. It provides the non-pharmacologic and pharmacologic treatment options according to evidence-based guidelines. It introduces the students to the application of pharmacologic and pharmacokinetic parameters, and description of factors that would guide the selection of the best treatment options. It also familiarizes the students with how to evaluate the treatment therapy for endocrinologic and womenâs health related disorders through highlighting on the monitoring parameters and important medicationsâ adverse effects. The student will apply problem-solving strategies to patient-oriented cases and will develop patient treatment plan.
PHAR565	Pharmacotherapeutics III (Cardiology/Nephrology)	3	This course identifies the pathophysiology, etiology, risk factors and signs and symptoms of most common cardiovascular and renal disorders. It provides the non-pharmacologic and pharmacologic treatment options according to evidence-based guidelines. It introduces the students to the application of pharmacologic and pharmacokinetic parameters, and description of factors that would guide the selection of the best treatment options. It also familiarizes the students with how to evaluate the treatment therapy for cardiovascular and renal disorders through highlighting on the monitoring parameters and important medicationsâ adverse effects. The student will apply problem-solving strategies to patient-oriented cases and will develop patient treatment plan.

PHAR560	Pharmacogenomics	3	Pharmacogenomics is a relatively young biomedical science that introduces a newly emerging, genetic-based, discipline in therapeutics. It was introduced to impact and revolutionize the practice of pharmacy. This novel biomedical science focuses on individual genetic variations and illustrates several challenges regarding the clinical integration of the role of genetic diversity into health and disease states. The primary focus of pharmacogenomics is to study the effect of genetic makeup and racial differences on drug response, adverse effects, and pharmacokinetics. It also offers the opportunity of designing new therapeutic options and new methods of using pre-existing drugs. This course introduces basic molecular genetics to the students and how genetics could be used to explain the possible variability in drug response. It familiarizes the students with the pharmacogenetics of drug transport and metabolism, with their relevance to clinical practice and individualization of drug therapy, along with updates on candidate pharmacogenomic testing. The course also explores the current and promising future applications of pharmacogenomics in areas of oncology, hematology, cardiovascular and neurological diseases, organ transplantation, and others. Key principles and applications of gene therapy will be reviewed. The course will help the students to interpret the results of pharmacogenomic association studies in order to comprehend variability in drug response and toxicity based on genetic polymorphism.
PHAR555	Pharmacology II	4	This course focuses on the drug classes that cover cardiovascular, antidiabetic, and chemotherapeutic agents. It includes a systematic study of the effects of drugs on different organ systems and disease processes, the mechanisms by which drugs produce their therapeutic and toxic effects, and the factors influencing their absorption, distribution and biological actions. Specific drugs and sites of drug action are further examined beginning with cardiovascular drugs, followed by antidiabetic agents, antifungal agents, antibiotics, and cancer chemotherapeutic agents.
PHAR520	Pharmacotherapeutics II (Pulmonary/Rheumatology)	3	This course identifies the pathophysiology, etiology, risk factors and signs and symptoms of most common pulmonary, gastrointestinal, and rheumatological diseases. It provides the non-pharmacologic and pharmacologic treatment options according to evidence-based guidelines. It introduces the students to the application of pharmacologic and pharmacokinetic parameters, and description of factors that would guide the selection of the best treatment options. It also familiarizes the students with how to evaluate the treatment therapy for pulmonary, gastrointestinal, and rheumatological diseases through highlighting on the monitoring parameters and important medicationsâ□□ adverse effects. The student will apply problem-solving strategies to patient-oriented cases and will develop patient treatment plan.

PHAR515	PharmacotherapeuticsI (Neurology/Psychiatry)	3	This course identifies the pathophysiology, etiology, risk factors and signs and symptoms of most common neurologic and psychiatric disorders. It provides the non-pharmacologic and pharmacologic treatment options according to evidence-based guidelines. It introduces the students to the application of pharmacologic and pharmacokinetic parameters, and description of factors that would guide the selection of the best treatment options. It also familiarizes the students with how to evaluate the treatment therapy for psychiatric and neurologic diseases through highlighting on the monitoring parameters and important medicationsâ adverse effects. The student will apply problem-solving strategies to patient-oriented cases and will develop patient treatment plan.
PHAR510	Biopharmaceutics& Pharmacokinetics	4	This course introduces the concepts of biopharmaceutics and pharmacokinetics. It highlights the process of absorption, distribution, metabolism, and excretion of drugs in order to improve the evaluation of drug delivery systems and the management of patients. It will help students to understand the clinical variability of drug response through exploring the relationships among physiological factors, compartmental models, pharmacokinetics and pharmacodynamics.
PHAR505	Pharmacology I	4	This course introduces the underlying principles of pharmacology and provides an overview of the physiological, biochemical, and anatomical foundations for the interaction of drugs and chemicals with biological systems. The course includes a systematic study of the effects of drugs on different organ systems and disease processes, the mechanisms by which drugs produce their therapeutic and toxic effects, and the factors influencing their absorption, distribution and biological actions. Specific drugs and sites of drug action are further examined beginning with the peripheral, followed by the central nervous system, and drugs used to treat inflammation.
PHAR480	Pharmacy Practice Experience I (PPEI)	6	Pharmacy Practice Experience I introduces students to the philosophy and practice of pharmaceutical care, including patient counseling, monitoring plans, and patient outcomes, with emphasis on the role of the pharmacist as the primary manager of patient drug therapies. After the students finish their first and second professional years, they are required to actively participate in a twelve-week supervised experiential program in community pharmacy. Students are exposed to fundamental professional practice skills, have interactions with health care consumers and professionals, and become involved in the provision of pharmaceutical care.
PHAR465	Interpretations of Lab Data	3	This course is an introduction to the fundamentals of interpreting laboratory test results that will illustrate how the results of a particular laboratory test should be interpreted, and allow students make accurate and critical diagnostic decisions. It provides pharmacy students with essential information on common laboratory tests used to screen for__diagnose disease, monitor the effectiveness and safety of treatment,__assess disease severity. Each laboratory test is described in terms of its clinical uses and relation to the pathophysiology of the disease.

PHAR460	Pharmacy Management & Drug Marketing	3	As pharmacy practice evolved from a product to patient orientation service, pharmacists are facing unique challenges to fulfill their professional roles and provide superior patient care and clinical services which can be made possible by pharmacists skilled in management. The aim of the course is to teach pharmacy students that superior patient care and good pharmacy business are not mutually exclusive and to familiarize the student with the management functions and resources common to all pharmacy practice settings including managing people, money, operations, traditional goods and services as well as managing risks and value-added services. Also this course will help students to acquire leadership skills.
PHAR455	Physical Assessment in Pharmacy Practice	3	This course is designed for pharmacy students who are in process of learning to talk with patients, and to perform their physical examination. The aim of this course is to prepare students to operate various pharmacy services during their actual practice. The first few chapters provide students with the techniques of skilled and effective interviewing skills, and general survey of the patient along with physical examination for vital signs.The subsequent chapters are devoted to the techniques of examination of various body regions__systems.
PHAR450	Medicinal Chemistry II	3	Medicinal Chemistry is divided into two courses: Phar 400 and Phar 450. Phar 450 helps the students to explore the principal classes of prescription drugs including neurologic, anesthetic, analgesic, anti-inflammatory, anti-bacterial, and cardiovascular agents. It will familiarize the students with the indications of neurologic, anesthetic, analgesic, anti-inflammatory, anti-bacterial, and cardiovascular agents, along with their related pharmacokinetics, pharmacodynamics and pharmacological profile.
PHAR425	Pharmacognosy & Herbal Medicine	3	The course introduces students to natural products and other bioactive molecules from nature, their origin, identification, development, and usage. Furthermore, it identifies the chemical structure, classes and structure-activity relationships of natural products. Moreover the course identifies the importance of natural products as major ingredients used within drug manufacturing.
PHAR420	Physical Pharmacy	3	This 3-credit course explores the application of physical chemical principles in relation to pharmaceutical sciences. Physical and theoretical foundations are discussed and applied and problem solving is emphasized. This course helps pharmacy students in using foundational elements of mathematics, chemistry, and physics in their pharmacy-related work and study.
PHAR415	Professional Communications	1	This course is designed to teach strategies students can use to improve communication with patients and other health care providers. Students will attain the essential communication skills competency to approach patients and provide care. Students are engaged in role-play that directs various conflicts that might arise in community settings with diverse patient population__health care professionals. In addition students will learn and demonstrate the skills to promote and communicate health messages through pharmacy day projects. Students will also have the opportunity to work in a team while they are preparing for the pharmacy day project.

PHAR410	Drug Dosage Forms I	3	This course introduces pharmacy students to the principles, practices, and technologies applied in the preparation of pharmaceutical dosage forms and drug delivery systems. It demonstrates the interrelationships between pharmaceutical and biopharmaceutical principles, product design, formulation, manufacture, compounding, and the clinical application of the various dosage forms in patient care. Regulations and standards governing the manufacturing and compounding of pharmaceuticals such as Good Manufacturing Practice (GMP) are also discussed in this course.
PHAR407	Pharmaceutical Analysis & Biotechnology	2	The course introduces the fundamental principles of modern instrumental methods used in pharmaceutical analysis, including the theoretical background and calculations needed, with their applications for identifying, separating and quantifying drugs. Instrumentation discussed within this course fall into: Spectroscopic methods (UV-Visible, IR and Atomic Absorption), chromatographic methods (TLC, HPLC and GC), and electroanalytical methods. The course also provides students with knowledge about the analytical method validation parameters (precision, accuracy, linearity, limits of detection and quantitation, sensitivity and selectivity). The physiochemical properties of the analyte are presented with emphasis about the possibly interfering matrix components and control of the analytical errors.
PHAR400	Medicinal Chemistry I	3	Medicinal Chemistry is divided into two courses: Phar 400 and Phar 450. It will familiarize the students with the discovery of the mechanism of action of drugs within organisms in order to design new and advanced pharmaceutical and medicinal agents. This interdisciplinary course will highlight the importance of knowledge obtained from toxicology, pharmacology, computer simulations, and clinical practice to provide valuable insights used in developing drugs with more targeted actions and fewer side effects.
PHAR300	Pharmaceutical Calculations	2	This course provides the pharmacy student with the knowledge and skills needed to mix medications to obtain concentration/ dose, to convert measurements from the metric system to the apothecary system and vice versa, to calculate doses needed for pediatrics__adults, to mathematically adjust medication doses in case of renal__hepatic compromise, and to interpret correctly standard abbreviations and symbols used in prescriptions and medication orders.
PHAR250	Pharmacy Practice ,History & Ethics	3	This 3-credit course emphasizes upon the historical background and major milestones in the evolution of pharmacy from apothecaries to clinical pharmacy. The first part for this course deals with pharmacy history present and future. The second part deals with pharmacy practice including major medical terms and abbreviations, function for international pharmaceutical l organizations and overview about drug classes and dosage forms. The last part deals with ethical principles governing patientâ□□pharmacist relationship.

PHAR200	Introduction to Drug Information	2	This course introduces students to basic principles of drug information including, medical terminologies, and drug monograph. In addition students will learn how to identify the different parts for the (SOAP note). The course also provides students with the knowledge to write drug consults and drug utilization review. The course will help students to recognize the different literature resources available, different types of a study design and apply basic biostatistics calculations.
PHAR205	Quantitative Analysis	2	This course introduces the fundamental principles of quantitative chemical analysis, including basic statistics, chemical equilibria (solubility, acid-base, complexation, precipitation, and redox titrations), electroanalytical techniques and introductory spectroscopy. It provides the students with experimental insights and skills in quantitative analysis through conduction of experiments with direct relevance for work in professional and academic laboratories (e.g., statistical evaluation of data, buffer and pH calculations, EDTA titrations and analysis of real samples when possible). The course also familiarizes the students to independently plan and conduct chemical analysis following proper analytical procedures and relevant safety regulations, analyze data, draw conclusions and solve problems with scientific rationale.
PHAR407L	Pharmaceutical/Biotechnology Lab	1	The course provides the students with practical experience of the instrumental methods used in pharmaceutical analysis; including UV-visible spectrophotometry, chromatographic methods (column, TLC and HPLC), polarimetric assays, conductometric titrations and enzymatic methods. The course presents the underlying principles guiding the instrument operation, instrument components, and the nature of the data generated by the instrument for each method discussed. Moreover, the course covers the basic principles in data analysis, error analysis and calibration.
PHAR472	Drug Dosage Form II	3	This course is the second part of the dosage form courses that are designed to flow logically. This part will focus on the design, formulation, manufacture, and testing of suppository dosage forms and other complex__novel dosage forms and drugs that were not covered in Drug Dosage Form I.
PHAR472L	Compounding Lab	1	This 1- credit course is the practical part of the two series of dosage form courses that deal with different formulations and drug delivery systems focusing on the rational and the significance of each dosage form. The course will help the students to demonstrate the skills in preparing different dosage forms in the lab based on guidelines and pharmacopeias.
PHAR435	Dermatology and Cosmetology	3	This course introduces pharmacy students to important aspects of dermatologic diseases, focusing on their common manifestations and the appropriate pharmacotherapy. The course addresses the assessment, treatment and referral of disorders affecting the skin, nail, hair__mucous membranes. Since pharmacists encounter several questions regarding general hygiene and cosmetic elegance, the second part of the course focuses on pharmaceutical cosmetology that provides basic and modern knowledge of optimal skin management and hair care.
General Education Requirements			

Code	Title	Credits	Description
ENGL251	Communication Skills	3	The objectives of this course are to improve students writing skills for academic purposes by developing effective use of grammatical structures; analytical and critical reading skills; a sensitivity to rhetorical situation, style, and level of diction in academic reading and writing; and competence in using various methods of organization used in formal writing.
ENGL201	Composition and Research Skills	3	This course focuses on the development of writing skills appropriate to specific academic and professional purposes; the analysis and practice of various methods of organization and rhetorical patterns used in formal expository and persuasive writing; the refinement of critical reading strategies and library research techniques; and the completion of an academically acceptable library research paper. Prerequisites: ENGL150, ENGL151.
CULT200	Introduction to Arab - Islamic Civilization	3	The purpose of this course is to acquaint students with the history and achievements of the Islamic civilization. Themes will include patterns of the political and spiritual leadership; cultural, artistic, and intellectual accomplishments Prerequisites: ENGL051, ENGL101, ENGL151.
CSCI200	Introduction to Computers	3	The course aims at making students competent in computer-related skills. It is supposed to develop basic computer knowledge by providing an overview of the computer hardware and basic components as well as hands-on practice on common software applications such as Word, Excel, Power Point, Internet and Email. The student will learn how to use the new features of Microsoft Office 2010 mainly Word documents, Excel spreadsheets and PowerPoint presentations. On the surface, MS Office 2010 looks a lot different than previous versions (no more menus__toolbars!), but by learning to understand the dramatically changed, Ribbon-based interface, you'll quickly get back on the road to productivity.
ARAB200	Arabic Language and Literature	3	This course is a comprehensive review of Arabic Grammar, Syntax, major literature and poetry styles, formal and business letters.
MATH245	Statistics for Health Sciences	3	General introduction to statistical methods used in the health, biological, biomedical sciences, pharmacy and medical sciences. Topics include research methods and design, descriptive statistics, performance characteristics of diagnostic tests, graphical methods, probability, estimation, hypothesis testing, p-values, regression and correlation, and clinical trials. Prerequisite: ENGL 150

Core Requirements			
Code	**Title**	**Credits**	**Description**
CHEM300L	Organic Chemistry Lab	2	Basic experimental techniques in organic chemistry such as melting points, boiling points, distillation, extraction, chromatography; synthesis, separation and purification of some organic compounds. Co-requisites: CHEM 300
CHEM300	Organic Chemistry II	3	This course is the bulk of under graduate organic chemistry. Mechanism in organic chemistry such as SN1, SN2, E1 and E2 and free radical chemistry will be the key focus of this course combined with comprehensive study of structure and reactivity of functional groups: the chemistry of alcohols, phenols, aromatics, ethers, aldehydes, ketones, amines, carboxylic acids, and their derivatives such as esters and amides. The strategic approach for organic chemistry synthesis, structure elucidation, and mechanistic study by spectroscopic methods will also be investigated. Prerequisite: CHEM 250.

CHEM250	Organic Chemistry I	3	Organic Chemistry will be classified into families, and the physical and chemical properties of each family will be discussed. Organic reactions will be viewed for their synthetic value, and Mechanistic Theory of Reactions and Structural Theory will be applied. A review of basic concepts of molecular structure, chemical bonding, molecular geometry, electronic and atomic structure, and acid-base chemistry, in addition to basic chemistry of alkanes, alkenes and alkyne families will be a main focus in this course. The value of stereochemical isomers will be stressed including conformational, geometrical and optical isomers. Prerequisite: CHEM 200.
CHEM200L	General Chemistry Lab	1	The laboratory work involves hands-on experience with chemical systems. Experiments include basic calorimetry, a limited qualitative and quantitative analysis scheme, properties of gases, acid-base and redox titrations. Co-requisites: CHEM 200
CHEM200	General Chemistry	3	Basic principles of chemistry, electronic structure of the atom, chemical periodicity, molecular structure and bonding, acids and bases and the states of matter, rates of chemical reactions, and chemical equilibrium are covered in this course. Prerequisites: ENGL 150; CHEM, or S grade on the Chemistry Placement Test Prerequisites: CHEM160, ENGL101. Co-requisites: CHEM200L.
BMED445	Pathophysiology	3	This course studies the mechanisms, etiologies, risk factors and complications of diseases processes. It emphasizes on the clinical signs and symptoms, history, prognosis and epidemiology of diseases. Study of pathological imbalances including cellular adaptation and injury, fluid compartment exchanges with edema and dehydration, electrolyte functions, control and imbalances, acidosis and alkalosis, nervous system injuries and responses, sensory imbalances, skeletal system injury and repair, soft tissue injury and repair, and muscle injury and dysfunction. Prerequisites: BIOL 345 & BIOL 385
BIOL385L	Microbiology Lab	1	Sterile techniques, media preparation, streaking, identification, isolation and purification of different bacterial strains are performed. Co-requisites: BIOL 385
BIOL385	Microbiology	3	Characteristics of microorganisms and parasites - emphasizing mechanisms by which they cause disease in humans. Prerequisites: BIOL 200
BIOL360L	Human Physiology & Anatomy Lab	1	Human Physiology & Anatomy Lab
BIOL360	Human Physiology & Anatomy	4	Studies the structure and function of the following body systems: blood, lymphatic, cardiovascular, respiratory, digestive, urinary, and reproductive. Prerequisites: BIOL200
BIOL200L	General Biology I Lab	1	This lab course introduces principles of microscopy with emphasis on viewing different animal tissues and cells. A detailed study of the animal kingdom including evolution, classification, and anatomical morphology. Co-requisites: BIOL 200
BIOL200	General Biology I	3	An introductory level course to energy transfer through living organisms, cell biology, membrane transportations, genetics, human physiology, evolution, and morphology and physiology of organ systems, understanding diversity with emphasis on the animal kingdom and evolution. Protozoans are also studied. Prerequisites: ENGL 150; BIOL 150, or S grade on the Biology Placement Test
BIOC310	Medical Biochemistry	4	Medical Biochemistry is designed to present the basics of biochemistry, thus including a study of structure of amino acids, carbohydrates, lipids, proteins, enzymes, and nucleotides, in addition to their metabolism, bioenergetics, membranes and signaling systems, integration and regulation of the major metabolic pathways, nitrogen metabolism, myoglobin, hemoglobin, and hemostasis, with emphasis on the biochemical basis of human disease. Prerequisite: BIOL 200 & CHEM 250