

Course description in English language:

1. Course number Course Name, No. of Credit Hours.
2. Course Description.
3. Prerequisite(s)
4. Corequisite.

❖ Punctuations:

- (;) To separate within the course.
- (,) To separate within the same chapter.
- (:) To be followed by items that belong to a main title.
- (.) To end the short description.

A0161101 Arabic Communication Skills {3}

Language levels: phonological level, grammatical level, rhetorical level, orthographic level, comprehension and speaking; grammar exercises, nominal sentences, verbal sentences, kana and its sisters, Inna and its sisters, dual, masculine plural, feminine plural, indeclinable nouns, vocative, appositives; exercises in morphology, present participle and past participle; spelling and punctuation, dictionaries, listening and speaking.

Prerequisite: A0161100 Remedial Arabic.

Corequisite: None.

A0161201 English Communication Skills {3}

Course Description: Grammar: question tags, present/future modals of possibility, futures overview, future continuous, future perfect, articles, adjectives, adverbs, if structures, expressing obligation, expressing ability, linking words of contrast; Vocabulary: family and non-family relationships, family birth order in relation to career choices and interests, making adjectives from nouns, work, 'after work' activities, old and new, films, film reviews, war, materials, risk, physical movements, free running, distances, dimensions; write an essay, notes, messages and a formal letter of application, use punctuation marks, capital letters and linking words properly, identify main ideas and details, guess the meaning of words from context, skim, scan for specific information and detail, make generalizations, see beyond the surface meaning, make inferences, identify opinion and attitude, make oral presentations, arguments and persuasive presentations, express agreement and disagreement, talk about future plans, make predictions, ask for someone's general opinion, ask for someone's specific opinion, present views and opinions, talk about materials, possession and inventions, pronounce words correctly, use proper intonation.

Prerequisite: A 0171100 Remedial English.

Corequisite: None

A0161301 National Education {3}

Concepts and terms; Geography of Jordan; contemporary political history of Jordan; Jordanian Society; Jordanian constitutional and democratic life; Jordanian national institutions; challenges facing Jordan; threats to civic life: fanaticism, extremism, terrorism, violence; corruption: definitions, types, causes, impact, and prevention.

Prerequisite: None.

Corequisite: None.

A0161401 Military Sciences {3}

The establishment and development of the Hashemite Kingdom of Jordan; the history of the Arab Legion; peacekeeping troops; preparing the nation for defense and liberation.

Prerequisite: None.

Corequisite: None.

A 0161501 Islamic Culture {3}

Definition of the culture, characteristics of the Islamic culture, Islamic culture and other cultures; the sources of Islamic culture: The Holy Quran, Sunna, the Arabic language, history of Islam; fields of Islamic culture: faith, worship, morals; challenges facing the Islamic culture: orientalism, globalization, secularism; young people and the impacts of foreign cultures, women and Islam, Islam and terrorism.

Prerequisite: None.

Corequisite: None

A0161601 Contemporary Issues {3}

Identify the most important contemporary local, national and regional issues, the most important contemporary challenges and their questions of development, youth, extremism, globalization, culture and identity; Jerusalem and status, the Arab-Israeli conflict.

Prerequisite: None.

Corequisite: None.

A0161701 History of Jordan and Palestine {3}

The geography of Jordan and Palestine; Jordan and Palestine in ancient times, general historical look; Jordan and Palestine in the Mamluki period; Jordan and Palestine during the First World War (1914- 1918); Emirate of East Jordan (Transjordan); constitutional and legislative life in Jordan; Palestine under the British Mandate and Jordanian-Palestinian relations.

Prerequisite: None.

Corequisite: None.

A0161901 Media and Public Relations {3}

The nexus between media and society in terms of the social, political, economic and cultural power of the media, the role of the media in giving people the opportunity to express their opinions and promote international relations. Communication and public relations: communication and its types, levels, forms, properties, fields, activities, physical and nonphysical (symbolic) environment, and obstacles to the communicative process. Public relations: its beginnings, development, principles, bases, importance, functions, planning, activities.

Prerequisite: None.

Corequisite: None

A0411601 Legal culture and Human Rights {3}

Identifying the basic concepts of human rights in an analytical way, and then realistic clarify of the international & regional means dealing with human rights such as treaties; recommendations and international organizations that are in the process of formation such imperative rules & customs ; This course also address the content of human rights: the rights of the first generation such as right of living, the second-generation rights such as the right to work, and third-generation rights such as the right of environment; This course deals with the international ways to protect human rights in general ; in addition this subject will study the Jordanian constitution in way of examine its application for the international standards.

Prerequisite: None.

Corequisite: None.

A0571401 Archeology & Tourism in Jordan {3}

Tourism definition; Classification of Tourism; The difference between tourist and other traveler's concepts, Travel types, The definition of Archaeology and archaeological sites; Archaeological surveys and excavations; Documentation; Jordan through the ages; Components of tourism in Jordan; Elements of tourist attractions in Jordan: Archeological sites, Natural sites, Natural reserves, Forests; Tourist movement and types in Jordan; Economical impact of tourism in Jordan.

Prerequisite: None.

Corequisite: None.

A0161602 Critical Thinking Skills {3}

The concept of critical thinking skill; its components; the characteristics of the individuals with critical thinking skills; critical thinking skills: interpretation skill, analysis, assessment, inference, expectation, predication; critical thinking stages: motivation, searching for information, connecting pieces of information, evaluation, expression, integration.

Prerequisite: None.

Corequisite: None.

A0161603 Entrepreneurship Skills {3}

An introduction to the skills program; creating a team work; the effective contact with others; time management; stress management and positive thinking, training the applied skills; the definition of an entrepreneur; defining entrepreneurship; kinds of entrepreneurship; kinds of incentives; identifying behaviors. Definitions: identifying the planning package, the process of setting goals, the importance of searching and planning, progress package, seizing opportunities; kinds of risk, defining quality, effectiveness. Calculations, accounting processes, preparing a work plan with cost calculation, an application on creating a work plan.

Prerequisite: None.

Corequisite: None.

A0161801 Environmental and Public Safety {3}

Introduction: The concept of the environment, its laws and relation to other sciences, primary and secondary components, cycle of elements in the natural environment, environmental problems, pollution of the environment, the problem of the depletion of environmental resources, principles of public health and diseases: the concept of public health, pathogens, viruses, bacteria, parasites, fungi, insects; The environment and pathology: organic, genetic, reproductive and psychological pathology. Nutrition and public health: types of food, malnutrition diseases, undesirable eating habits; The environment and public health from an Islamic perspective: Quranic verses and sayings of the Prophet.

Prerequisite: None

Corequisite: None.

A0181100 Sport and Health {3}

This course aims to educate students about physical education, physical activities, health, sports injuries and how to prevent them. It also provides information about women in sports, Islam and sports, sports for all, dangers of smoking and doping, and violence in sports.

Prerequisite: None.

Corequisite: None.



A0612303 Community Health {3}

Prerequisite: None.

Corequisite: None.

A0871103 Principles of Renewable Energy {3}

Prerequisite: None.

Corequisite: None.

A0111101 Mathematics (1) {3}

Introduction to Calculus; The rate of change of a function; Limits; Derivatives of algebraic functions and their applications; Integration; Application of the definite integral.

Prerequisite: None.

Corequisite: None.

A0111201 General Physics (1) {3}

Introduction to Physics; Measurement and standards; Physical quantities; Vectors; Addition and multiplication of vectors; Motion in straight line: displacement, velocity, acceleration, finding the motion of an object, free fall, and vertical jumping; Motion in two dimensions; Projectile in Biomechanics; Newton's laws: Static C.G., Levers in the body, muscles and, and jaws of animals; Collisions.

Prerequisite: None.

Corequisite: None.

A0111301 General Chemistry {3}

Chemistry and the atomic/ molecular view of matter; scientific measurements; elements, compounds, and the periodic table; the mole and stoichiometry; molecular view of reactions in aqueous solutions: double-replacement reaction, redox reaction; the quantum mechanical atom: electron configuration, properties of elements; basics of chemical bonding: ionic bonds, covalent bonds, intermolecular forces; chemical kinetics: rates laws; acids and bases: strong acids, weak acids, buffers.

Prerequisite: None.

Corequisite: None.

A0111302 Practical General Chemistry {1}

Basic laboratory techniques: safety rules, handling chemicals and glassware operating balances and Bunsen burner, write the scientific report ; identification of chemical substances: physical properties of matter as boiling point and melting point; physical separation of mixtures: distillation, extraction, recrystallization; empirical formula; chemical reaction : metathesis, solubility of salts; preparation of solutions: prepare a solution of known concentration; standardization of a base: titration, molecular weight determination; indicators, buffers and measurement of pH.

Prerequisite: None.

Corequisite: A0111301 General Chemistry.



A111401 General Biology {3}

Introduction: water and life; Macromolecules; The cell; Introduction to metabolism; Cellular respiration; DNA structure and replication; From gene to protein; cell cycle; Introduction to selected microorganisms (biodiversity), Phylogeny and the tree of life; Bacteria and archaea; Protists and fungi; Vascular plant and overview of animal diversity; animal tissues and systems.

Prerequisite: None.

Corequisite: None.

A111402 Practical General Biology {1}

Introduction to Biology Lab; Compound light microscope; Preparing slides of: Plant cells, and animal cells; Macromolecules chemical properties; Cellular division; Animal tissues and Plant tissues; preparing bacterial smear; Algae, Fungi, and Bryophytes; Protozoan & Plants and animals Biodiversity.

Prerequisite: None.

Corequisite: A111401 General Biology.

A0341207 Computer Skills (Health) {3}

Topics in modern information technology: Emails and Internet Navigation; Social Networks; Image and Video editing; Context Management Systems; Useful Software applications on the cloud.

Prerequisite: A0331200 Remedial Computer Skills.

Corequisite: None.

A111101 Anatomy & Histology {3}

General introduction and revision about the animal cell and cell division; Tissues of the body; Organization of the body; The cardiovascular system and the heart; Lymphatic system; Respiratory system; Digestive system; Urinary system; Male reproductive system; Female reproductive system; Nervous system; Musculo-skeletal system.

Prerequisite: A111401 General Biology.

Corequisite: None.

A0914501 First Aid {1}

Introduction to first aid; Patient assessment and cardiopulmonary resuscitation; Transport and moving the injured emergency respiratory wounds; Bleeding and trauma emergencies; esoteric injuries; Musculature and structural environmental emergencies

Prerequisite: A1112103 Pathology.

Corequisite: None.

A0913330 Pathology {3}

Introduction; Fundamental principles of pathophysiology; Cell and tissue injury; Acute and chronic inflammation; Tissue regeneration and repair; Disease of immune system; General pathology of infectious diseases; Neoplasia and hemodynamic disturbances, selected organ-system pathological disorders.

Prerequisite: A1112204 Physiology.

Corequisite: None.

A0912103 Pharmaceutical Instrumental Analysis {2}

Introduction to Pharmaceutical Instrumental Analysis; Ultraviolet and Visible Spectroscopy; Infrared Spectrophotometry; Nuclear Magnetic Resonance spectroscopy; Electrochemical Methods of Analysis; HPLC; GC; Mass Spectrometry; Atomic Emission and Absorption Spectrophotometry; Fluorescence Spectroscopy; Capillary Electrophoresis.

Prerequisite: A1112602 Analytical Chemistry.

Corequisite: None.



A0912104 Practical Pharmaceutical Instrumental Analysis {1}

The lab will provide practical hands on experience to a wide range of instrumentation and Introducing the students to the major concepts of instrumental analysis and to some of the instrumental techniques most commonly used in analytical and bioanalytical chemistry. It emphasizes the use of modern, commercial instrumentation to perform quantitative and qualitative analyses of the physical properties and chemical composition of samples. The classes will cover the theory of spectroscopic techniques, high performance liquid chromatography, gas chromatography and FT-IR.

Prerequisite: None.

Corequisite: A0912103 Pharmaceutical Instrumental Analysis.

A0912105 Physical Pharmacy {3}

Covers the quantitative and theoretic principles of science that applied to the practice of pharmacy. It includes the drug Solubility: gases in liquids, liquids in liquids, and solids in liquids; chemical kinetics and stability: rate, order, half-life, shelf-life and accelerated stability; diffusion through membranes and elementary drug release; dissolution; Interfacial phenomenon: adsorption at liquid & solid interfaces; rheology: Newtonian, non-Newtonian systems and thixotropy.

Prerequisite: A0111301 General Chemistry / A0111201 General Physics (1) / A0912107 Pharmaceutical Organic Chemistry.

Corequisite: None.

A0912106 Practical Physical Pharmacy {1}

Prerequisite: None.

Corequisite: A0912105 Physical Pharmacy.

A0912107 Pharmaceutical Organic Chemistry {3}

Introduction; Organic Medicinal compounds: Classification, preparation, and reaction; Heterocyclic compounds; Isomeric compounds; Pharmaceutical interest of some organic medicinal compounds.

Prerequisite: A0111301 General Chemistry.

Corequisite: None.

A0912102 Practical Pharmaceutical Organic Chemistry {1}

Introduction; Organic Medicinal compounds: Classification, preparation, and reaction; Heterocyclic compounds; Isomeric compounds; Pharmaceutical interest of some organic medicinal compounds.

Prerequisite: None.

Corequisite: A0912107 Pharmaceutical Organic Chemistry.

A0913103 Phytochemistry {3}

Introduction to Phytochemistry; Pharmaceutically important secondary metabolites, Glycosides, Alkaloids, Terpenes(mono, die, tri, tetraterpenes), Volatile oil, and Resins, coumarins, Introduction to plant tissue techniques, in addition to pharmacological effect for each compound.

Prerequisite: A0111301 General Chemistry.

Corequisite: None.

A0913104 Practical Phytochemistry {1}

Introduction about safety of Instruments and organic solvents used inside the lab, isolation of Secondary metabolites from plants and identification by chemical tests and chromatography:- starch, glycosides (cardiac, Anthraquinone, saponin, Tannis, Flavonoids), alkaloids and Volatile oils.

Prerequisite: None.

Corequisite: A0913103 Phytochemistry.

A0913201 Pharmaceutics (1) {3}

Introduction; Formulation; Compounding; Packing; Storing Dispensing; Different Pharmaceutical Calculations.

Prerequisite: A0912105 Physical Pharmacy.

Corequisite: None.

A0913202 Pharmaceutics (2) {3}

Pharmaceutical Preparations: Suspensions; Emulsions; Creams; Ointment; Pastes; Gels; Suppositories; Pessaries; Powders; Granules

Prerequisite: A0913201 Pharmaceutics (1).

Corequisite: None.

A0913203 Practical Pharmaceutics {1}

Introduction; Preparation of some Pharmaceutical dosage forms according to Pharmacopia; Aromatic Waters; Syrups , Spirits; Elixirs; mouth preparations; Drops; Externally applied Preparations; Suspensions.

Prerequisite: None.

Corequisite: A0913202 Pharmaceutics (2).

A0913301 Pharmacology (1) {3}

Basic concepts of pharmacology including pharmacokinetics and pharmacodynamics; drugs affecting autonomic system; the basic pharmacology of drugs act on the cardiovascular system; basic pharmacology of drugs acting on the blood will also be included.

Prerequisite: A1112204 Physiology.

Corequisite: None.

A0913303 Microbiology {2}

Introduction; Fundamental concepts of microbiology; Bacteria morphology, Bacteria cell structure; Bacteria growth, factors influence microbial growth; Microorganisms and their relation to disease; Classification and bacterial metabolism; Viruses, viral morphology; Cultivation of the viruses; Fungi, Types, Morphology ; Bacterial human diseases; Viral human diseases; fungal disease.

Prerequisite: A1112204 Physiology.

Corequisite: None.

A0913304 Pharmacology (2) {3}

Basic and clinical pharmacology of drugs acting on the CNS; on the respiratory and gastrointestinal tracts; Nonsteroidal anti-inflammatory drugs will be discussed too; the basic pharmacology of drugs with important actions on smooth muscle.

Prerequisite: A0913301 Pharmacology (1).

Corequisite: None.

A0913305 Pharmaceutical Microbiology {2}

Introduction; Biological properties of antibiotics and Mechanisms of action; The development of microorganism's resistance: Methods of sterilization, Chemical disinfectant, antiseptics, and preservatives; Microbial spoilage; Production of Therapeutically products by Recombinant DNA.

Prerequisite: A0913303 Microbiology.

Corequisite: None.

A0913306 Practical Pharmaceutical Microbiology {1}

Introduction; Bacteria isolation; Bacteria cultivation; Bacteria stain, types of staining: Microscopic examination; Bacterial counting; Antibiotics sensitivity test; Physical and chemical agents to control microorganisms: Heat, Phenol coefficient: Test for sterility of pharmaceutical preparation Sources of microbial contamination.

Prerequisite: None.

Corequisite: A0913305 Pharmaceutical Microbiology.

A0913307 Community Pharmacy Training {2}

Prerequisite: A0913301 Pharmacology (1).

Corequisite: None.

A0913307 Hospital Pharmacy Training {2}

Prerequisite: A0913307 Community Pharmacy Training / A0913304 Pharmacology (2).

Corequisite: None.

A0914101 Medicinal Chemistry (1) {2}

Explore the evolution of medicinal chemistry concepts through time. It correlates drug structures with physicochemical properties which are affecting ADME and biological activity (SAR) ; also it includes the synthesis, SAR, mode and mechanism of drugs affecting central nervous system; Narcotic analgesics; adrenergic and cholinergic and cardiovascular drugs; also covers drug metabolism and pro-drugs.

Prerequisite: A0912107 Pharmaceutical Organic Chemistry / A0913304 Pharmacology (2).

Corequisite: None.

A0914105 Clinical Biochemistry {2}

Introduction to clinical biochemistry; preparation and sampling of biological materials; anticoagulants and preservatives; body fluids: sodium, potassium and acid base balance; kidney function; liver function; disorders of carbohydrate metabolism: diabetes mellitus, hypoglycemia and hyperglycemia; metabolism and disorders of lipids and lipoproteins: types of hyperlipidemia and differentiation; cell tumor and markers ;inherited metabolism disorders: galactosemia, phenylketonuria.

Prerequisite: A1112304 Biochemistry / A0913304 Pharmacology (2).

Corequisite: None.

A0914105 Practical Clinical Biochemistry {1}

Introduction ; Clinical tests; patients samples handling; results interpretation ; disease diagnosis ; diabetes tests ; urea and creatinin ; uric acid ; urine examination; liver enzymes ; plasma lipids: cholesterol, triglycerides , HDL,LDL.

Prerequisite: None.

Corequisite: A0914105 Clinical Biochemistry.

A0914104 Medicinal Chemistry (2) {3}

Understanding and learning the synthesis, SAR, mode and mechanism of action of NSAIDs; steroid drugs; antihistamine; drugs affecting sugar metabolism; thyroid hormones and antithyroid agents; diuretics and cardiovascular drugs.

Prerequisite: A0914101 Medicinal Chemistry (1)

Corequisite: None

A0914201 Industrial Pharmacy (1) {3}

Introduction; Manufacturing of pharmaceuticals; Basic principles of industrial processes: Mixing; Milling; Drying; Sterilization; Transfer processes; Unit operation.

Prerequisite: A0913202 Pharmaceutics (2).

Corequisite: None.

A0914202 Biopharmaceutics & Pharmacokinetics {3}

Introduction: definitions of terms; compartment model; I.V bolus dose: Linear model, First order kinetics; Calculation of area under the curve; Clearance of drugs; Intravenous infusion; Non – linear kinetics ; Oral drug administration and factors affecting its absorption; kinetics of drug absorption; multiple doses regimen: drug accumulation , missing a dose, design and evaluation of dosage regimen.

Prerequisite: A0913202 Pharmaceutics (2) / A0913304 Pharmacology (2).

Corequisite: None.

A0914203 Practical Biopharmaceutics & Pharmacokinetics {1}

Introduction; calculation of kinetic parameters of linear model ; methods of calculation of area under the curve; representation of drug concentration in urine and calculation of kinetic parameters in urine; two-compartment model; calculations of I.V infusion ; Non- linear kinetics; oral administration of drugs: calculation of bioavailability and absorption rate constant ; calculation of kinetic parameters using computer (Microsoft excel).

Prerequisite: None.

Corequisite: A0914202 Biopharmaceutics & Pharmacokinetics.

A0914204 Industrial Pharmacy (2) {2}

Introduction; Design of Dosage Forms , Tablets , Coating , Capsules , and (GMP); Physicochemical factors , Formulation and Manufacturing , Pharmaceutical stability , Testing and Packaging.

Prerequisite: A0914201 Industrial Pharmacy (1).

Corequisite: None.

A0914205 Practical Industrial Pharmacy {1}

Introduction to Industrial Pharmacy , Formulation , Pharmaceutical Quality Control ,Tablets Capsules, Suspensions, and Emulsions , Sustained Release Preparations.

Prerequisite: None.

Corequisite: A0914204 Industrial Pharmacy (2).

A0914301 Pharmacology (3) {2}

The pharmacological profile of drugs acting on the endocrine system, antibacterial drugs, antiviral drugs, antifungal drugs, and antiprotozoal drugs. The scope of this course will be extended to include cancer chemotherapy and immunopharmacology.

Prerequisite: A0913304 Pharmacology (2).

Corequisite: None.

A0914302 Toxicology {2}

Introduction to Toxicology; Disposition of toxic compounds; Metabolism of foreign compounds; Types of exposure and response; Drugs as toxic substances; Industrial toxicology; Food additives and contaminants; Pesticides; Environmental pollutants; Natural products; Household products; Toxicity testing and risk assessment.

Prerequisite: A0913304 Pharmacology (2).

Corequisite: None.

A0914303 Practical Pharmacology & Toxicology {1}

Introduction; Study the animal handling; Dosing; Poisons; Identification poisons; quantification of poisons.

Prerequisite: None.

Corequisite: A0914302 Toxicology.

A0914410 Phytotherapy {2}

The use of phytomedicines in various therapeutic categories affecting all the systems such as :- gastro intestinal ; cardiovascular; respiratory system ;central nervous system; in addition to infectious disease.

Prerequisite: A0913103 Phytochemistry.

Corequisite: None.

A0915101 Medicinal Chemistry (3) {2}

Understanding and learning the synthesis, SAR, mode and mechanism of action of antifungal; antibacterial; anti-tubercular; Anthelmintic; antiviral; antiprotozoal and anticancer agents.

Prerequisite: A0914104 Medicinal Chemistry (2).

Corequisite: None.

A0915102 Practical Medicinal Chemistry {1}

Incorporation a number of experiments for the synthesis of certain drugs which are included in the theoretical course of medicinal chemistry I, II and III. The experiments are intended to train the students to use different chemical reactions and various analytical methods for preparation and assay of some representative drugs for different classes.

Prerequisite: None

Corequisite: A0915101 Medicinal Chemistry (3).

A0915103 Drug Design {2}

Explore the basic principles of how novel drugs were discovered with insight on lead identification and optimization techniques; study the QSAR; classification of drug targeting; prodrugs design and applications. In addition, to gain knowledge on current developments in the use of computer in drug design and discovery.

Prerequisite: A0914104 Medicinal Chemistry (2).

Corequisite: None.

A0915201 Pharmacoeconomics {3}

Terminology used in pharmacoeconomics (PE); Measuring and estimating costs and consequences associated with pharmacy products ; perspective of economic evaluation ; different pharmacoeconomic study : Cost –Minimization Analysis, Cost-Effectiveness analysis , Cost – utility Analysis (CUA), Cost -

research articles; adjusting and discounting cost ; Benefit Analysis(CBA) ; Critiquing pharmacoeconomic Decision analysis methodology.

Prerequisite: A0915401 Pharmaceutical Technology.

Corequisite: None.

A0915202 Cosmetics {2}

An introduction to the basics of cosmetics such as; Shampoos in its different types e.g. Antidandruff shampoos, Baby shampoos and Conditioning shampoos; Dentifrices; Antiperspirants; Deodorants; Emollients; Aerosols; Colored Make-Up Preparations; Anti-acne preparations; Hair colorants and Epilation and Depilation methods.

Prerequisite: A0913202 Pharmaceutics (2).

Corequisite: None.

A0915301 Pharmacotherapy (1) {3}

Introduction; Clinical pharmacy practice: patient interview, patient counseling, monitoring drug interactions, patient-drug profile, and patient compliance; Cardiovascular disorders; Hypertension, Congestive heart failure; Angina pectoris; Respiratory disorders; Gastrointestinal disorders; PUD; Diarrhea; Constipation; Rheumatic disease; Endocrine and metabolic disease; Thyroid disorders; Hyperlipidemia.

Prerequisite: A0913304 Pharmacology (2) / A0914105 Clinical Biochemistry.

Corequisite: None.

A0915305 Practical Pharmacotherapy (1) {1}

Prerequisite: None.

Corequisite: A0915301 Pharmacotherapy (1).

A0915306 Pharmacotherapy (2) {3}

Introduction; Diseases of the Blood; Anemia, Sickle Cell disease; Renal Disease; Hepatic and Pancreatic Disorders; Skin Disease; Neurological Disorders; Headaches; Parkinsonism; Seizure Disorders; Infectious disorders; Tuberculosis, and HIV.

Prerequisite: A0915301 Pharmacotherapy (1).

Corequisite: None.

A0915307 Practical Pharmacotherapy (2) {1}

Introduction; Patient-drug profiles; Case Study analysis: Clinical investigations, and monitoring possible drug interactions for Hypertension, Congestive heart failure; Angina pectoris; Respiratory disorders; Gastrointestinal disorders; PUD; Diarrhea; Constipation.

Prerequisite: None.

Corequisite: A0915306 Pharmacotherapy (2).

A0915308 Advanced Training {2}

Prerequisite: A0913307 Hospital Pharmacy Training / A0915301 Pharmacotherapy (1).

Corequisite: None.

A0915401 Pharmaceutical Technology {3}

An introduction to novel and non-conventional drug delivery systems; Introduction to pharmaceutical carriers such as; Polymers; Liposomes; and Nanoparticles; Introduction to nonconventional routes of administrations such as; Ocular; Transdermal; Nasal; and Pulmonary routes of delivery.

Prerequisite: A0914204 Industrial Pharmacy (2).

Corequisite: None.

A0915402 Pharmaceutical Biotechnology {3}

Introduction to biotechnology; cell and gene expression; recombinant DNA technology and its applications; recent methodological approaches used in DNA and protein analysis; animal, plant, environmental, and medical biotechnology; cloning and genetic engineering; plant genetic engineering; gene therapy; vaccines; monoclonal antibodies production.

Prerequisite: A1112304 Biochemistry / A0913305 Pharmaceutical Microbiology.

Corequisite: None.

A0915403 Pharmaceutical Marketing {3}

Marketing Mix, customer buyer behavior, marketing Definition of Marketing ; Marketing elements: environment, marketing exchange ; Marketing management Philosophies; simple five step model of marketing process; Marketing strategy and plan ; PEST and SWOT analysis; Financial concepts ; Detailing process , selling skill for medical representative; Doctor's attitudes and how to handling doctor attitude.

Prerequisite: A0915201 Pharmacoeconomics.

Corequisite: None.

A0915501 Pharmacy Practice {3}

Introduction to Pharmacy Practice; Pharmacy profession and practice; Communication skills; Job description of pharmacists in different settings; Pharmacy practice topics related to OTC drugs.

Prerequisite: A0913304 Pharmacology (2).

Corequisite: None.

A0915502 Pharmacy Law and Legislations {1}

Introduction; Ethics and laws regulating the pharmacy profession; Practice in Jordan; Arabic and International pharmaceutical organizations.

Prerequisite: A0913202 Pharmaceutics (2).

Corequisite: None.

A0915505 Research Graduation Project {1}

Prerequisite: A0915301 Pharmacotherapy (1).

Corequisite: None.

A1112204 Physiology {3}

Introduction to human physiology, homeostasis and feedback mechanisms; Cell structure; Body fluids and membrane transport; Nervous system; Autonomic nervous system; Muscles; heart and circulation; Cardiac output and blood pressure; Respiratory system; Introduction to the immune system; Human central nervous system, special senses; endocrine system; digestive system; urinary system; male and female reproductive system.

Prerequisite: A1111101 Anatomy & Histology.

Corequisite: None.

A1112304 Biochemistry {3}

Introduction to Biochemistry; Biologic oxidation; carbohydrates; chemistry of carbohydrates, digestion and absorption of carbohydrates, Metabolism of carbohydrates, diabetes mellitus. Lipids; chemistry of fatty acids, digestion and absorption of lipids, lipids metabolism, hyperlipidemias and fatty liver; Enzymes; Amino acids chemistry and metabolism; inborn errors of amino acids metabolism, proteins structures. Molecular biology; nucleic acids structure and metabolism, central dogma of molecular biology, DNA replication, gene expression.

Prerequisite: A0111401 General Biology / A0912107 Pharmaceutical Organic Chemistry.

Corequisite: None.

A1112303 Practical Biochemistry {1}

Introduction and safety regulations; Biologically important chemical compounds; qualitative and quantitative determination of carbohydrate: glucose fructose, sucrose, starch; qualitative and quantitative determination of lipids: saturated and unsaturated fatty acids; qualitative and quantitative determination of proteins: amino acids, enzymes, and nucleic acids.

Prerequisite: None.

Corequisite: A1112304 Biochemistry.

A1112602 Analytical Chemistry {2}

Introduction; Analytical process; Chemical measurements; Math Toolkit; Statistics; Gravimetric and Combustion analysis; Acid base reactions; buffers; Acid base titrations; Polyprotic Acid.

Prerequisite: A0912107 Pharmaceutical Organic Chemistry.

Corequisite: None.

A1112603 Practical Analytical Chemistry {1}

Introduction; Glass calibration; Statistical Evaluation of analytical results; Gravimetric determination of Chloride; Gravimetric determination of Nickel; Measuring of the calcium ion content in dried milk powder; Measuring of vitamin C concentration by Redox titration; Precipitation titration.

Prerequisite: None.

Corequisite: A1112602 Analytical Chemistry.

A1113504 Immunology & Serology {3}

Introduction; Glass calibration; Statistical Evaluation of analytical results; Gravimetric determination of Chloride; Gravimetric determination of Nickel; Measuring of the calcium ion content in dried milk powder; Measuring of vitamin C concentration by Redox titration; Precipitation titration.

Prerequisite: A0913303 Microbiology.

Corequisite: None.

A0912501 Biostatistics {2}

An introduction and review of biostatistics that provides an introduction to selected important topics in biostatistical concepts and reasoning. This course represents an introduction to the field and provides a survey of data and data types. Specific topics include descriptive statistics both numerical and graphical methods of data sets, measures of central tendency and variability, probability distributions, sampling, estimation, confidence intervals and hypothesis testing. While there are some formulae and computational elements to the course, the emphasis is on interpretation and concepts.

Prerequisite: A0111101 Calculus (1).

Corequisite: None.

A0914304 Chemotherapy {2}

Principles of Antimicrobial Therapy; Cell Wall Inhibitors; Protein Synthesis Inhibitors; Quinolones; Folic Acid Antagonists; Antifungal Drugs; Antiviral drugs; Principles of Cancer Chemotherapy; Anticancer Drugs.

Prerequisite: A0914301 Pharmacology (3).

Corequisite: None.

A0915304 Drug Information and Poison Control {2}

Introduction; Drug Information center ; Drug and Poisons literature Resources; . Evaluation of primary literature; types of study designs; medication errors ;Poison control centers and risk assessment.

Prerequisite: A0914302 Toxicology.

Corequisite: None.

A0915404 Communication Skills {2}

A communication is giving, receiving or exchanging ideas, information, signals or messages through appropriate media, enabling individuals or groups to persuade, to seek information, to give information or to express emotions. This broad definition includes body-language, skills of speaking and writing. It also outlines the objectives of communication and emphasizes listening as an important aspect of communication.

Prerequisite: A0915501 Pharmacy Practice.

Corequisite: None.

A0915503 Quality Control and Drug Analysis {2}

Introduction; Identity and Purity of raw materials; Sources of Impurities, Quality control of pharmaceutical preparation; Methods Analysis: HPLC, GLC, NMR, Spectrofluorometric, UV, and Titrimetry; Introduction of quality control concepts; TQC in pharmaceutical industry, ICH guidelines.

Prerequisite: A0915101 Medicinal Chemistry (3).

Corequisite: None.



A0915504 Scientific Research Methods {2}

Introduction to research methods; importance of research; old and new research methods: old methods of obtaining facts, empirical thinking; data collection procedures; brief explanation of the scientific methods used in research designs and tools; overview of main statistical measurements; scientific criticism.

Prerequisite: A0915301 Pharmacotherapy (1).

Corequisite: None.

A0161100 Remedial Arabic {3}

The concept of language and its levels, comprehension and speaking; grammar exercises; nominal sentences, verbal sentences, kana and its sisters, inna and its sisters, masculine plural, feminine plural, singular, dual, numbers, appositives; punctuation marks, exercises in morphology (present and past participles); spelling issues (Hamza/glottal stop writing): conjunctive Hamza (Hamza was) and Hamza cat', alef following group waw, *alif layyinah* ('flexible alif') and nunation (tanwin).

Prerequisite: None.

Corequisite: None.

A0161200 Remedial English {3}

Grammar: auxiliary verbs, present simple, present continuous, past simple, past continuous, future forms for personal plans, present perfect simple, present perfect continuous, past perfect simple; vocabulary: friendship, relationships, using a computer, quiz shows, T.V programs, newspapers, houses, adjectives describing places, compound nouns associated with appliances, spare time activities, the description of books and films, food, eating out , write a paragraph, distinguish between formal and informal letters, write informal emails, use punctuation marks, capital letters and linking words properly, identify main ideas and details, guess the meaning of words from context, skim, scan for specific information and detail, make generalizations, see beyond the surface meaning, make inferences, identify opinion and attitude, make oral presentations, arguments and persuasive presentations, express agreement and disagreement, make comparisons, narrate events, present views and opinions, make formal phone calls, recommend restaurants, pronounce words correctly, use proper intonation.

Prerequisite: None.

Corequisite: None.

A0331200 Remedial Computer Skills {3}

Introduction to basic computer hardware and software; copyrights; Windows operating system; Microsoft Office: Word, Excel, Power point, Access; Introduction to Internet.

Prerequisite: None.

Corequisite: None.