

الوصف المختصر للمواد الدراسية – إجراءات تنفيذ مهام لجنة الخطة الدراسية / كلية الصيدلة	QF02/0409-1.0
Course Brief Description – Procedures of the Course Plan Committee/ Faculty of Pharmacy	

القسم	الصيدلة	Department
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الخطة الدراسية رقم	(4)	تاريخ الاعتماد	عدد المواد الدراسية	(66)
Course Plan No.		Approval Date	Number of Courses	

رقم المادة	اسم المادة الدراسية	الساعات المعتمدة	المتطلب السابق
Course No.	Course Name	Credit hours	Prerequisite
120141	General Chemistry	3	--

The course presents a basic introduction to international system of units, measurements and significant figures, matter and its properties and the mole concept, the periodic table, chemical reactions in aqueous solutions, gases, electronic structure, and periodic properties of elements chemical bonding , general concepts, covalent bonding and the molecular structure.

رقم المادة	اسم المادة الدراسية	الساعات المعتمدة	المتطلب السابق
Course No.	Course Name	Credit hours	Prerequisite
120142	General Chemistry Lab.	1	--

This course focuses on the study of matter itself; analyze matters using gravitational methods, and volumetric methods in acid-base reaction, redox reaction. The use of ideal gas law in determination of volatile liquid, and to determine the heat of neutralization.

رقم المادة	اسم المادة الدراسية	الساعات المعتمدة	المتطلب السابق
Course No.	Course Name	Credit hours	Prerequisite
120151	Biology	3	--

The main objective of this course is to complete the basic principles of the biology covered in biological sciences -1. It includes Scientific method, Cells, Cellular membranes, Molecular genetics and different human body tissues. Also it covers Viruses, Bacteria, and Plant hormones.

رقم المادة	اسم المادة الدراسية	الساعات المعتمدة	المتطلب السابق
Course No.	Course Name	Credit hours	Prerequisite
120152	Biology Lab.	3	--

The course will move students from solid written text to practical aspects. After learning about Microscopes they will be taught to engage by themselves in conducting experiments aiming to explore human cell function, chemistry, and biology. Scientific method will be discussed and arguments raised will lead to enhance their intellectual capabilities.

رقم المادة	اسم المادة الدراسية	الساعات المعتمدة	المتطلب السابق
Course No.	Course Name	Credit hours	Prerequisite
201112	Pharmaceutical Organic Chemistry (1)	3 hours	General Chemistry

This course involves the bases of organic chemistry that include methods of preparation and reactions of cycloalkanes, alkyl halides, unsaturated compounds (alkenes & alkynes), alcohols and ethers.

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Biology	2	Anatomy & histology	201231
<p>This course is intended to cover gross morphology study of all human body parts and organs. It also covers microscopic organization, the relationship of one structure to another, and how structure and function are interrelated, clinical applications, functional anatomy & diagnostic techniques are also include.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Biology Lab	1	Anatomy & histology Lab.	0201232
<p>This course is intended to cover gross morphology study of all human body parts and organs. It also covers microscopic organization, the relationship of one structure to another, and how structure and function are interrelated, clinical applications, functional anatomy & diagnostic techniques are also include.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Biology	2	Physiology- I	201233
<p>The general objective of this course is to provide the students with a physiology course in which the prevalent theories for body function are studied. explained and discussed as a mandatory for understanding pharmacology and pathology taught in later years and how human body systems act integratively in complex body functions. In this course we will emphasize on the mechanisms of communication between body systems and the importance of these mechanisms in maintaining homeostasis and correct functioning of other body systems.</p> <p>Topics, which are covered in detail, include the function autonomic nervous, skeletal, blood, cardiovascular and respiratory systems. Clinical applications related to these systems are mentioned. The two major communication systems of the body, the nervous and endocrine systems. will be considered in detail. The effect of these communication systems at various levels of organization is also considered.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Biology Lab.	1	Physiology Lab.	201234
<p>The experiments presented in this lab are designed to illustrate the basic principles of physiology and to develop the student's ability to carry out measurements and make observation. It includes experiments on blood and cardiovascular system.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Physiology I	2	Physiology II	201235
<p>The general objective of this course is to provide the students with a physiology course in which the prevalent theories for body function are studied explained and discussed as a mandatory for understanding pharmacology and pathology taught in later years and how</p>			

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human body systems act together (integratively) in complex body function.

In this course, physiology is integrated with anatomy for each system of the human body. Topics covered include the function of the central nervous, sensory, renal, endocrine, gastrointestinal and reproductive systems. Clinical applications related to these systems are mentioned. The two major communication systems of the body (nervous and endocrine systems) will be considered in detail, and their effects at various levels of organization is also considered. Physiology 201255 will emphasize the mechanisms of communication between body systems and the importance of these mechanisms in maintaining homeostasis and correct functioning of other body systems.

المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology 3 and Pharmaceutics 3	1	Legislations and Pharmaceutical Ethics	201544

This course covers the legislations of pharmaceutical practice in Jordan and study of current and relevant topics impacting health care with attention to the development of a framework for ethical decision-making.

المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
General Chemistry	2	Physical Pharmacy	201111

This Course deals with the study of physical properties of gases. States of matter and intermolecular forces. Physical properties of colloids and solutions. Chemical thermodynamics. Chemical equilibrium in gaseous system. Acid-base equilibrium in aqueous solutions; Solubility and complex ion equilibrium. Electrochemistry. Chemical kinetics: the study of the rates of chemical reactions.

المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Organic Chemistry (1)	2	Pharmaceutical Organic Chemistry (2)	201211

Pharmaceutical organic chemistry is primarily a lecture and problem-solving course, which builds upon the first course of organic chemistry to prepare the student for other courses in pharmacy; biochemistry medicinal chemistry and phytochemistry. The curriculum is divided between advance topics in the three areas of organic chemistry; (1) structures, properties, and nomenclatures of organic compounds, (2) mechanistic theory, and (3) synthesis and reactions. The course is composed of series of lectures, guided problem sets, and exams.

المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
General Chemistry Lab	1	Pharmaceutical Organic Chemistry Lab.	201212

This course includes investigation and characterization of the physical and chemical properties for many organic chemical classes. It involves preparation, purification and identification of selected simple organic compounds, such as organic halides, aromatic compounds, alcohols, ethers, aldehydes, ketones, phenols, carboxylic acids, nitro compounds and amines..etc.

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
General Chemistry	3	Pharmaceutical Analytical Chemistry	201213
<p>This course introduces the pharmacy student to the concept of analysis in pharmaceutical industries. The course discusses the concepts of analytical methods and focuses on the principles and applications of the different titrimetric procedures that are employed in quantitative pharmaceutical analysis. The covered topics include the concepts of acidity, basicity and buffer solutions, the applications of aqueous and non aqueous acid-base titrations. Other types of studied titration procedure are complexation, precipitation, oxidation-reduction titrations. The student will also be exposed to the principles involved in gravimetric determination.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
General Chemistry Lab.	1	Pharmaceutical Analytical Chemistry Lab.	201214
<p>The course provides the practical concepts of analytical methods that are based on chemical equilibria. It focuses on the applications of the different titration procedures that are employed in quantitative pharmaceutical analysis. The covered topics include acid- base, complexation, precipitation, oxidation reduction reaction and gravimetry.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Biology and pharmaceutical organic chemistry 2	2	Pharmacognosy	201215
<p>This course will provide students with general knowledge of crude drugs associated with allopathic medicine. Special emphasis is made on study of crude drugs derived from medicinal plants; their morphological organs, origin, history, cultivation, collection, preparation, morphological and histological characters, constituents, adulterants, allied drugs and uses.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Physical Pharmacy	3	Pharmaceutics 1	201221
<p>This course provides students with an introduction to the knowledge of physical pharmacy principles. It provides student basic knowledge of states of matter. It will introduce the students to all the methods to prepare isotonic solution. This course will provide students with basic knowledge of solubility terms and distribution phenomena. This course also will introduce complexation and protein binding. It will provide student with basic knowledge of kinetics, rates and orders of reactions, and accelerated stability studies. It will cover subject of diffusion and dissolution. It will introduce students to interfacial phenomena, adsorption concepts, and applications of surface-active agents. It will introduce the student to colloidal systems. It will introduce rheology and material classification according to rheological properties. This course also will discuss coarse dispersion including terms of suspensions and emulsions, and it will focus in the physical stability of these systems.</p>			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutics 1	2	Pharmaceutics-2	201222
This course teaches different dosage forms (Liquids and Powders) with respect to their characteristics, methods of preparation, uses and advantages over other dosage forms. It provides information on the ingredients and raw materials that are involved in the specific dosage forms.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutics 1	1	Pharmaceutical Calculations	201223
This course teaches pharmaceutical calculations that are involved in prescriptions.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Analytical Chemistry	2	Chemistry of Instrumental Analysis	201311
The course discusses the concepts of instrumental analytical methods and their ideal criteria in order to be reliable in light of pharmaceutical products specifications. The course, however; focuses on the principles and applications of the different instrumental procedures that are employed in quantitative pharmaceutical analysis. The covered topics include electrochemistry, spectroscopy and chromatography.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Analytical Chemistry Lab.	1	Instrumental Analysis Lab.	201312
The course provides the practical concepts of instrumental analytical methods and their ideal criteria in order to be reliable in light of pharmaceutical products specifications. The course, however; focuses on the applications of the different instrumental procedures that are employed in quantitative pharmaceutical analysis. The covered topics include electrochemistry, spectroscopy and chromatography. Students will have the chance to practice what they learn in the accompanying theoretical module in a suitable laboratory environment.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical organic chemistry 1	3	Pharmaceutical Biochemistry	201313
This course provides students with the necessary knowledge of the major topics in biochemistry, with objective of development the tools necessary to understand biological processes in chemical terms. The course focuses on the structural organization and function of the major components of the living cells: proteins, carbohydrates, and lipids. Also the course focuses on metabolism of carbohydrates, lipids and proteins in normal subjects and diseases, including detailed structure of mechanisms involved in protein synthesis, enzyme activity, intermediary metabolism and oxidative phosphorylation.			

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Pharmaceutical Organic Chemistry Lab	1	Pharmaceutical Biochemistry Lab	201314
<p>To identify and differentiate different types of carbohydrates, proteins and lipids using simple chemical tests.</p> <p>The basic principles of the methodology used are emphasized. Each experiment in the practical program is assessed by means of a short report, detailing the experimental results achieved, and showing all necessary calculations, an interpretation of the results in terms of the aims of the experiment.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacognosy	2	Phytochemistry	201315
<p>This course will provide students with the knowledge of medicinally active constituents of crude drugs of vegetal and animal origin associated with allopathic medicine. The course will provide the biosynthetic pathways employed in the formation of the secondary metabolites, such as alkaloids and cardiotoxic glycosides, cannabinoids, lectines and proteolytic enzymes. The knowledge of the mechanism of action and structure activity relationship of these constituents is explained. The therapeutic value and toxicology of these natural constituents is also discussed.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Organic Chemistry Lab and Biology Lab	1	Pharmacognosy & Phytochemistry Lab	201316
<p>This practical course provides students with knowledge in methods used to separate chemical constituents, and methods used to detect different classes of secondary metabolites.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutics 2	2	Pharmaceutics 3	201321
<p>This course teaches the different dosage forms that have not been discussed in Pharmaceutics 2 with respect to their characteristics, methods of preparation, uses and advantages over other dosage forms. The course also provides information on the ingredients and raw materials that are involved in the specific dosage forms and the scientific knowledge on different methods and techniques employed in the preparation of these dosage forms.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical calculations	1	Pharmaceutics Lab	201322
<p>This course provides the students with broad knowledge on the practical aspects of the different dosage forms with respect to their formulation techniques, uses and dispensing instructions. The students will acquire the skill of compounding extemporaneous preparations and will be able to train and work in pharmacies.</p>			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Biology	3 hours	Pharmaceutical Microbiology	201331
This course is intended to cover various aspects in microbiology with emphasis on pathogenicity, antimicrobial drugs and the microbiological aspects of pharmaceutical procession.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Biology Lab.	1 hour	Pharmaceutical Microbiology Lab.	201332
This course is intended to teach the students the practice of microbiology including laboratory safety, handling and identification of microorganisms, antibiotic assays and evolution of antiseptics, disinfectants and preservatives and the various methods of sterilization.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Physiology 2	2	Pathophysiology	201333
Pathology is the study of disease process and the response of normal tissue to injury. It the scientific link between basic sciences and clinical medicine. It provides a comprehensive and yet, concise account of the important feature of disease and to link, where possibly, the pathological changes with effects on the patients. This will help students to understand disease in the individual patient.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Physiology Lab.	1	Pathophysiology Lab.	201334
This course has been designed to provide student with a practical approach to general and systemic pathology. The laboratory provide information and practice needed to develop an introductory level of proficiency in formulating differential diagnoses through the interpretation of gross and microscopic changes in various organs and their correlation with clinical, therapeutic, radiologic and laboratory tests.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pathophysiology	3	Pharmacology 1	201335
This course provides students with the knowledge of the general principles of pharmacology. In addition, it covers drug groups which affect the autonomic nervous system, cardiovascular system, respiratory system and kidney. As well as, it provides the knowledge of mechanism of action, pharmacodynamics, pharmacokinetics, clinically significant side effects, drug interactions, contraindications and clinical uses.			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Microbiology	2 hours	Immunology	201336
<p>This course is intended to cover different aspects of immunology, starting with historical perspective and covering innate and adaptive immunity, immunogenicity, antibodies, humoral and cellular immune responses, immune regulation, Immunopathology such as hypersensitivity, immunological tolerance and autoimmunity, and transplantation. The course also deals with immunization, tumor immunology as well as the diagnostic immunological techniques.</p> <p>Moreover, the course will explain in detail the immunotherapy for various immunological diseases.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical organic chemistry	2	Medicinal Chemistry-1	201411
<p>This course provides students an introduction to the knowledge of the relationship between different classes of pharmaceutical compounds and their physicochemical properties (relation to absorption, distribution, and elimination). It provides students with basic knowledge of drug-receptor interaction, types of chemical bonds involved in drug-receptor interactions, drug mechanism of action, and drug metabolism. It emphasizes on the stereochemical background necessary to understand the drugs activity: optical isomerism, geometric, and conformational. It gives students basic knowledge of prodrugs concept and their actions.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical organic chemistry 2 and Pharmacology 1	1	Drug Design	201412
<p>This course introduces students to the organic chemical principles vital to drug design and drug discovery. The course will also provide concepts of molecular modeling, QSAR analysis, combinatorial chemistry and recombinant technology</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Biochemistry	2	Clinical Biochemistry	201413
<p>The emphasis will be on the application of biochemical Knowledge to the diagnosis and treatment of disease .</p> <p>The correlation used for qualitative and quantitative analysis of solutes present in body tissues and fluids are described. Techniques used to identify disease of liver, Kidney , heart and their associated diseases are explained with emphasis on enzyme activity .</p>			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Medicinal Chemistry-1	3	Medicinal Chemistry-2	201414
This course is a continuation of medicinal chemistry-1. This course discusses the structure-activity relationship (SAR), synthesis, chemistry, mode of action, and drug-drug interaction of some classes of therapeutic agents.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical organic chemistry Lab.	1	Medicinal Chemistry Lab.	201415
This course involves in addition to the identification and determination of different drugs, the preparation of some of them with simple synthetic procedures.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutics 3	3	Biopharmaceutics & Pharmacokinetics	201421
This course is intended to describe Drug Pharmacokinetic and Pharmacodynamic concepts, including absorption kinetics, volume of distribution, and compartmental models, absorption processes, single & multiple dosing, & drug clearance. This course is also planned to cover principles and applications of biopharmaceutics including physico-chemical, physiological, & formulation factors affecting drug bioavailability.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutics Lab.	3	Biopharmaceutics & Pharmacokinetics Lab	201422
This course is complementary part to the theoretical lectures, where the student will have knowledge of practical techniques used to solve kinetic cases. This course covers the fundamental pharmacokinetic concepts regarding rate and order of processes, & compartment models. Also the course provides practical examples and questions to encourage students to apply the kinetics principles in patient care and drug consultation situations.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutics 3	3	Industrial Pharmacy	201423
This course is aiming to provide an excellent introduction to the basic unite operations in the process of drug manufacturing. Both theoretical and practical information will be presented. The subjects include preformulation, milling, particle size separation and analysis, powder flow, powder mixing, granulation, drying, clarification and filtration.			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology 1	3	Pharmacology 2	201431
<p>This course provides students with the knowledge of groups of drugs and their pharmacological properties used in endocrine, central nervous system, In addition, it covers drug groups which affect inflammatory and selected other clinical disorders.</p> <p>As well as the knowledge of mechanism of action, pharmacodynamics, pharmacokinetics, clinically significant side effects & drug interactions, contraindications and clinical uses.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pathophysiology Lab.	1	Pharmacology Lab	201432
<p>This course provides students with the practical knowledge of groups of drugs and their pharmacological properties by using different species of animals and different pharmacological techniques.</p> <p>As well as the practical knowledge of the mechanism of action, pharmacodynamics, pharmacokinetics. In addition this course covers selected topics in pharmacology to be presented as seminars by the students.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology 2	3	Pharmacology 3	201433
<p>This course provides students with the knowledge of groups of chemotherapeutic drugs and their pharmacological properties used in infectious and cancer diseases.</p> <p>As well as the knowledge of mechanism of action, pharmacodynamics, pharmacokinetics, clinically significant side effects & drug interactions, contraindications and clinical uses.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology	2	Toxicology	201434
<p>This course will cover the basic principles in toxicology, and also covers sources and classification of poisons, their mechanisms of toxic action, diagnostic clues for toxicity, and symptoms of toxicity, prevention and treatment.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology Lab.	1	Toxicology Lab	201435
<p>The course covers experiments on animals for drug overdose to see the symptoms of toxicity, and it also covers experiments of simple color tests for toxicological screening.</p>			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Phytochemistry	3	Homeopathic remedies	201441
<p>This course will provide students with the knowledge of medicinally active constituents of crude drugs associated with allopathic medicine.</p> <p>The course explains the methods used for the production of secondary metabolites in <i>vitro</i> by plant tissue and cell culture. The course will provide information of the secondary active constituents including: carbohydrates, tannins, different kinds of glycosides, lignans, fixed oil and lipids and their biosynthesis. Also, the course gives knowledge on the mechanism of action and structure-activity relationship of these constituents.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Medicinal Chemistry-2	3	Medicinal Chemistry-3	201511
<p>This course is a continuation of medicinal chemistry-2. It treats the structure-activity relationship, synthesis, mechanism of action, and drug-drug interactions of other drug classes. It also discusses in details the drug interaction with their targets (cellular receptors, enzymes, and cellular nucleic acid components, i.e.: DNA and RNA).</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology 3	1	Professional Pharmacy Practice 1	201521
<p>This course will focus on the application of pharmaceutical care principles, pharmaceutical knowledge and professional techniques to solve patient/medication related issues. Communication techniques in the clinical setting will be explored and practiced through off-site experiences, role-playing, and writing, presenting and working in groups. This course will introduce the patient medical record. The student will be exposed to the concepts of pharmacy care, professional attitudes and cultural competence.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Industrial Pharmacy	2	Cosmetics	201522
<p>This course provides students with an introduction to the knowledge of cosmetics products. It will provide the student with basic knowledge of the skin anatomy and skin products including skin creams, astringents and skin tonics, Protective creams and hand cleansers, bath preparations, skin products for babies, skin products for young people, anti-perspirant and deodorants, depilatories, shaving preparation, foot preparations, Insect repellants, sunscreen, suntan and anti-sunburn preparations, skin lighteners or bleaches, face Packs and masks, face powders and make-up, and colored make-up preparation (lipstick, rouge, eye makeup). It will provide student with knowledge of nail preparation. It will give knowledge in Hair preparations including shampoos, hair setting lotions, sprays and dressings, hair tonics and conditioners, hair colorants, permanent waving and hair strengtheners, and hair straighteners. Finally, the student will briefly study about teeth and dental products, which include dentifrice, and mouth-washes.</p>			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical marketing and Clinical Pharmacy & therapeutics	2	Pharmacoeconomics	201523
<p>Pharmacoeconomics is a specific form of health economics that is restricted to pharmaceutical products. Pharmacoeconomics aims to improve the allocation of resources for pharmaceutical products and services. Numerous methods are utilised to determine the least expensive treatment with the best treatment outcome. Healthcare policies worldwide are focused on increasing efficiency at a lower cost without reducing either the quality of healthcare or access to it. Pharmacoeconomics is an essential tool in therapeutic decision-making and help to find the most effective and efficient treatment at the least cost, whilst optimising the outcomes of the patient and decreasing costs to society.</p> <p>This course is designed to give the student an overview of pharmacoeconomics and some of the health outcomes measurement principles that apply to this discipline.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Professional Pharmacy Practice 1	1	Professional Pharmacy Practice 2	201524
<p>This course will focus on the application of pharmaceutical care principles, pharmaceutical knowledge and professional techniques to solve patient /medication related issues. Patient counseling will be introduced. This course will emphasize professional writing, computer skills, presentations, critical thinking skills and professionalism</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology-3 + Biopharmaceutics & Pharmacokinetics	3	Clinical Pharmacy and Therapeutics 1	201531
<p>It presents the principles of therapeutics and the patient's factors that may affect drug selection and dose determination. It also covers the treatment of the most common diseases and the follow up of cardiovascular, respiratory, joint, and nervous systems. It also teaches infections. The course also deals with how to maximize the benefits and minimize the risks of treatment and the skills of using drugs utilizing evidence-based medicine and pharmaceutical care.</p>			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology Lab and Biopharmaceutics & Pharmacokinetics Lab	1	Clinical Pharmacy Lab 1 (case study)	201532
This course presents cases cover diseases and topics of people of special consideration such as elderly, pregnant, lactating women ... etc. It also covers the diseases of cardiovascular, respiratory, joint, nervous systems and infections.			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Clinical Pharmacy and Therapeutics 1	2	Clinical Pharmacy and Therapeutics 2	201533
The pharmacist providing patient pharmaceutical care, or supplying drug information to other health professionals must have a clear understanding of the pharmacotherapy and therapeutic interventions necessary for improving different clinical outcomes. Therefore, the course describes common disease states, diagnosis, prognosis, therapeutic objectives with emphasis on optimal pharmacological management and problems associated with the use of drugs in these disease states. Areas covered include in addition to fluids and electrolytes disorders the therapy of renal, hepatic, cardiovascular, orthopedic, endocrine, central nervous system, gastrointestinal and others			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Clinical Pharmacy Lab 1	1	Clinical Pharmacy Lab 2(hospital)	201534
Students will have one class per week in the hospital. During the first two or three weeks, the instructor will introduce the principles of clinical pharmacy and pharmaceutical care, introduction to the pharmacist care practice manual and training to use the manual by using a real case. Procedures for the use of patient's medical record and filling in the patient data base in addition to preparation and presentation of clinical cases will be presented., the instructor will review and discuss case studies related to main disease states including cardiovascular, respiratory, GI and DVT by addressing the pharmacological aspects for the therapeutic strategies in the management of common disease states. The following weeks include rounds inside the hospital for different disease states (according to the available cases), an oral discussion and case analysis for each group to be performed after each round followed by filling the manuals designed specifically to be completed by the students.			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Industrial Pharmacy	3	Pharmaceutical Technology	201541
<p>This course aims to familiarize the students with solid pharmaceutical dosage forms, and to employ the different unit operations in the preparation and manufacturing of these dosage forms including coated and uncoated tablets, hard gelatin capsules, soft gelatin capsules, sustained release preparations and pharmaceutical aerosols. Their manufacture, evaluation and uses will be thoroughly discussed. Nanotechnology science is also introduced.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutics Lab	1	Pharmaceutical Technology lab	201542
<p>This course is intended for application of the theoretical aspects mentioned in the theoretical courses of industrial pharmacy and pharmaceutical technology in order to help the student to confirm his knowledge and to be familiarized with different topics including the theoretical and practical background of the unit operations that exists in the pharmaceutical industry. These include milling, particle size separation and analysis, flowability characterization, mixing, granulation and drying. It aims also to employ the different unit operations in the preparation and manufacturing of such dosage forms as tablets, coated and uncoated, hard gelatin capsules and sustained release preparations. Their manufacture, evaluation and uses will be thoroughly discussed.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmacology 3	2	Pharmaceutical Marketing	201543
<p>This course is designed to familiarize the students with the skills required for effective management, recognize reasons for business planning, understand the nature of organizing, understand how product classes can help a marketing manager plan marketing strategies, understand the new-product development process, understand why marketing specialists make channel systems, understand the importance of promotion objectives, understand various kinds of advertising, understand pricing objectives & policies, & finally understand basics & advantages of accounting.</p>			
المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Biochemistry	3	Pharmaceutical Biotechnology	201545
<p>This course will focus on the major innovations in pharmaceutical biotechnology during the past twenty years and their effects on drug discovery and drug production in pharmaceutical industry. Topics covered will include DNA and proteins, cloning and stem cells, genomics, proteomics, plant and animal cell culturing, genetic diseases and gene therapy, drug discovery and applications.</p>			

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المتطلب السابق Prerequisite	الساعات المعتمدة Credit hours	اسم المادة الدراسية Course Name	رقم المادة Course No.
Pharmaceutical Technology	3	Drug Quality Control	201551
This course will cover regulatory aspects for pharmaceuticals, quality assurance, documentation and records (including quality control and manufacturing documentation, document design and product license application). It will introduce the student to pharmaceutical formulation and processing. Finally it will introduce the student to health and safety regulations.			
Clinical Biochemistry	3	Clinical Nutrition	201552
The course will cover the study of the requirements of the body for the basic building materials such as monosaccharides, fatty acids and amino acids, also for various other substances like minerals and vitamins and how requirements can be met through diet, in addition to the role of nutrition and dietetics in promoting health and in preventing and treating diseases.			
Toxicology	3	Clinical Toxicology	201553
This course focuses on the role of pharmacist in treatment of poisoning and general management of poisoning & drug overdose. Also it focuses on antidotes and their mechanism of action. In addition to that it gives an idea about the Role and Status of Poison Control Centre.			
Pharmacology 3	3	Selected Topics in Pharmacology	201554
This course focuses on the clinical application of the basic pharmacological information concerning drug interactions; drugs require special dose adjustment in certain diseases, drugs caution during pregnancy and lactation. Also the most important over the counter drugs information will be discussed.			
Pharmacology 3	3	Pharmaceutical Skills	201555
The communication model, skills development, barriers and strategies to improve interpersonal communication are discussed throughout this course.			
Pharmacology 3	3	Clinical biostatistics	201556
This is a concepts-based introduction to statistical procedures that prepares public health, medical, and life sciences students to conduct and evaluate research. With an engaging writing style and helpful graphics, the emphasis is on concepts over formulas or rote memorization.			



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Approved by	(التوقيع والخاتم الرسمي)	اعتمدت من قبل مجلس القسم
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