Courses Description

College: Pharmaceutical Sciences

Department:

Couse ID: 131701231 **Description:** Pharmaceutical Calculations and Compounding

Full Course Description: This course aims to teach the students legal and professional aspects of pharmaceutical compounding. It discusses the pharmacopeias, official formulations, good compounding practices, storage for dispensed products, prescription, abbreviations, labeling, and operational requirements to compound a formulation. In addition, the Pharmaceutical calculations and Pharmaceutical considerations of common compounding procedures for various formulations beginning with solution dosage forms through the dispersed system and semisolid formulations, and ending with suppositories will be discussed.
The course will foster the ability of the student to decide the need for suitable materials to be used for the formulation of a drug substance into a stable liquid or semisolid dosage form with build-in skills in problem-solving during compounding procedures. The students will be able to critically think and appreciate the need of designing an innovative dosage form that corresponds to the new challenges.

Couse ID: 131701232 **Description:** Pharmaceutical Calculations and Compounding - Practical

Full Course Description: The pharmaceutical calculation and compounding lab focuses on several interests in the pharmaceutical field, including the fundamentals of calculations, compounding of solutions, suspensions, emulsions, semisolids, and suppositories preparations, in addition, to building up students' information regarding preparations and dispensing.
This course aims to provide the students with good knowledge in calculations, formulation, and extemporaneous dispensing, packaging, and storage of medicines, specifically, solutions, suspensions, emulsions, creams, ointments, and gels, as well as suppositories, are discussed along with their various types, additives, methods of preparation, common examples, packaging, and quality requirements.

Couse ID: 131701317 **Description:** Physical Pharmacy (1)

Full Course Description: This course investigates the application of physicochemical principles on problems in the pharmaceutical sciences. The impacts of physicochemical and biopharmaceutical properties of drugs on the safety, effectiveness, stability, and formulation of various pharmaceutical dosage forms are discussed thoroughly during the course. Topics of states of matter, phase equilibria, thermodynamics, solutions, ionic equilibria and buffering, solubility, and partitioning are investigated.

Couse ID: 131701318 **Description:** Physical Pharmacy - Practical

Full Course Description: This course consists of practical applications of physicochemical concepts that control the behavior and processing of pharmaceutical materials, such as the drug diffusion across membranes, increasing the solubility of the drug by different approaches, the partitioning of drugs between immiscible solvents, phase equilibria, and viscosity.

Couse ID: 131701333 **Description:** Physical Pharmacy (2)

Full Course Description: This course addresses the basic physicochemical principles that determine the behavior of pharmaceutical materials in different physical and biological systems related to drug formulation and delivery. Diffusion, drug release and dissolution, chemical kinetics and stability, colloidal and coarse dispersions, interfacial phenomena, rheology, and complexation are thoroughly discussed.

Couse ID: 131701334 **Description:** Sterilization and Aseptic Manufacturing

Full Course Description: This course builds up on the information that the student gain in the Pharmaceutical Microbiology course. It discusses the most important features the pharmacists need to know in the area of contamination, sterilization, and infection control, as well as the manufacture of microbiologically sterile medicines (mainly parenterals and ophthalmics) and their subsequent protection against microbial contamination and spoilage. Clean room classifications and entry requirements are also introduced.

Courses Description

College: Pharmaceutical Sciences

Department:

Couse ID: 131701335 **Description:** Ethics and Pharmaceutical Legistlation

Full Course Description: This course introduces the students to existing laws and regulations governing the practice of Pharmacy in Jordan. In addition, the course discusses the code of ethics in pharmacy and helps the student distinguish ethics from other kinds of issues in pharmacy, and identifies options open to a pharmacist faced with an ethical issue. Several ethical dilemmas as well as case studies are presented and discussed. Guests from the Jordan Food and Drug Administration as well as Jordan Pharmacy syndicate are hosted during the course to introduce various regulatory topics to the students.

Couse ID: 131701341 **Description:** Pharmaceutical Microbiology-Practical

Full Course Description: This course aims to provide students with practical skills to identify microorganisms. Prepare growth media, prepare stained smears, and differential staining specifying the gram staining. Determine the effectiveness of some of the materials and methods used to limit the growth or kill different types of microorganisms. Study the effectiveness of various sterilization techniques and introduce students to the methods used to identify the sensitivity of microorganisms to various antibiotics.

Couse ID: 131701342 **Description:** Biopharmaceutics

Full Course Description: This course introduces students to the concepts of biopharmaceutics. The students study the processes of absorption, distribution, metabolism, and excretion of drugs to improve the evaluation of drug delivery systems and the therapeutic management of patients. An increased mechanistic understanding of the physiological, physiochemical, and formulation factors that influence drugs absorption from the intestine and metabolism, distribution, and elimination will be discussed. Additionally, the relevance to the generic substitution of drugs and the regulatory aspects on the absorption, bioavailability, and bioequivalence are described

Couse ID: 131701354 **Description:** Pharmaceutical Microbiology

Full Course Description: The course concerns antimicrobial agents and their clinical uses in the treatment of respiratory infections, gastrointestinal infections, CNS infections, and urogenital infections. As well, it will allow the students to understand the mechanisms of bacterial resistance and how to control this problem.

Couse ID: 131701436 **Description:** Industrial Pharmacy (1)

Full Course Description: This course discusses the necessary technological concepts for processing and characterization of pharmaceutical powders (size analysis, reduction, and separation as well as mixing, powder flow, granulation, and drying). The course also covers the formulation, manufacturing and quality requirements for powders, granules, and tablets.

Couse ID: 131701437 **Description:** Industrial Pharmacy (1) - Practical

Full Course Description: The experiments in this course cover pharmaceutical technologies regarding powder including, size analysis and reduction, mixing, powder flow, and granulation. The course also covers the manufacturing and quality requirements of tablet dosage forms.

Couse ID: 131701438 **Description:** Non-Prescription Drugs and Parapharmaceuticals

Full Course Description: This course aims to teach students how to help patients to choose and use the drugs that are dispensed without a prescription to achieve the best patient-self-care practices. This course also aims to provide students with information on managing common healthcare problems (common cold, diarrhea, constipation). Additionally, it aims to prepare students to advise on how to use medical equipment and Parapharmaceuticals such as diabetes care devices, thermometers and blood pressure measurement devices.

Couse ID: 131701471 **Description:** Industrial Pharmacy (2)

Full Course Description: This course addresses pharmaceutical manufacturing processes (Coating, clarification, and packaging) and formulation, manufacturing and quality requirements for capsules, aerosols, and modified release oral dosage forms. The course also introduces students to pharmaceutical nanotechnology and preformulation.

Courses Description

College: Pharmaceutical Sciences

Department:

Couse ID: 131701472 **Description:** Industrial Pharmacy (2) - Practical

Full Course Description: This course aims to develop qualified pharmacists in the field of the pharmaceutical industry by providing students with practical work (including processes, machinery, materials, formulation, standards, and quality requirements) concerning the covered topics.

Couse ID: 131701539 **Description:** Cosmetics

Full Course Description: This course discusses the scientific aspects of skin & hair care. It describes various cosmetics and cosmeceuticals available in community pharmacies, such as moisturizers, skin cleansers, masks, sunscreens, acne, skin pigmentation, and skin aging ameliorating products. It discusses the effects of various cosmetics ingredients on skin & hair and their mode of action using data supported by scientifically researched criteria. In addition, local and international legal requirements for cosmetics registration and labelling will be discussed as well as basic principles of formulations of some cosmetics. The course offers lectures enriched with case studies and assignments.

Couse ID: 131701575 **Description:** Drug Quality and Regulatory Affairs

Full Course Description: This course investigates the current international guidelines and regulatory affairs related to the quality, safety, and efficacy of pharmaceutical dosage forms. It reviews the different guidelines related to the common technical document, test procedures and acceptance criteria for new drug substances and new drug products, Impurities in new drug substances and drug products, stability testing of new drug substances and products, Good Manufacturing Practices, Scale-Up and Postapproval Changes (SUPAC) Regulations, validation of analytical procedures, product development, Quality by Design and quality risk management, and investigation of bioequivalence studies.

Couse ID: 131701576 **Description:** Pharmaceutical Biotechnology

Full Course Description: This course aims to teach the students the pharmaceutical uses of some microorganisms in the manufacturing of antibiotics. In addition, the principles of molecular biology and genetic engineering, including the isolation of genes, insertion into vectors, and transformation into different hosts to be expressed. This course also teaches the various biological drugs produced by biotechnology such as insulin, hormones, vaccines, and monoclonal antibodies, and the guidelines of the FDA and EMA regarding biologicals and biosimilars.

Couse ID: 131701578 **Description:** Technical Writing Skills

Full Course Description: This course raises the awareness of written communication, how to assess the readability metrics of a paragraph and basics of effective writing are all important skills that are useful and valued by employers. Topics cover students' employability and job application skills and written research and business skills.

Couse ID: 131701591 **Description:** Field Training

Full Course Description: This course gives students the knowledge, skills and actual exposure required for their prospective working in pharmaceutical industrial firms. This comprises training in various departments of pharmaceutical manufacturing plants including research & development, production, quality control and assurance departments.

Couse ID: 131701592 **Description:** Development and Manufacturing of Solid Dosage Forms

Full Course Description: This course gives students essential information on the formulation and production of pharmaceutical dosage forms. The covered topics include taste masking approaches, formulation and manufacture of effervescent preparations, formulation and production of different dosage forms for specific types of active ingredients including peptides and proteins, plant medicines and poorly soluble drugs. The course also addresses the formulation strategies of generic oral drug products.

Courses Description

College: Pharmaceutical Sciences

Department:

Couse ID: 131701593 **Description:** Development and Manufacturing of Liquids and Semi-Liquid Dosage Forms

Full Course Description: This course gives students essential information on the formulation and production of pharmaceutical dosage forms. The covered topics include taste masking approaches, formulation and manufacture of effervescent preparations, formulation and production of different dosage forms for specific types of active ingredients including peptides and proteins, plant medicines and poorly soluble drugs. The course also addresses the formulation strategies of generic oral drug products.

Couse ID: 131701594 **Description:** Pharmaceutical Quality Control and Assurance

Full Course Description: This course addresses the roles and responsibilities associated with Quality Assurance and Quality Control. It discusses the critical components that make up a pharmaceutical quality system (e.g. GMP, GLP, validation, investigations, audits, corrective actions and risk assessment, etc.). This course also attempts to evaluate and apply the principles of Quality Assurance and Quality Control to achieve a quality pharmaceutical operation.

Couse ID: 131701595 **Description:** Advanced Physical Pharmacy

Full Course Description: This course is designed to study the advanced physical concepts and methods that are applied to pharmaceutical systems and problems. A strong emphasis will be on chemical kinetics, solubility and dissolution, complexation, and interfacial phenomena.

Couse ID: 131701596 **Description:** Selected Topics in Industrial Pharmacy

Full Course Description: In this course, the students have to attain recent knowledge about relevant specialized topics in Industrial Pharmacy.

Couse ID: 131701597 **Description:** Drug Discovery and Development

Full Course Description: This course will explore the process of drug design and development, from target identification to final drug registration. It will present drug development as a process involving target selection, lead discovery using computer-based methods, and combinatorial chemistry/high-throughput screening. Safety evaluation, bioavailability, clinical trials, and the essentials of patent law will also be discussed. Along students will learn about molecular recognition, computer-aided drug design, and toxicology as applied to the development of new medicines.

Couse ID: 131701598 **Description:** Applied Research in Industrial Pharmacy

Full Course Description: This course aims to integrate the skills, concepts, and knowledge of industrial pharmacy into research related to this field.

Couse ID: 161701590 **Description:** Advanced Drug Delivery Systems

Full Course Description: The course covers the fundamentals and principles of drug delivery, the strategies and materials used in controlled drug delivery, and the evaluation and characterization of such delivery systems. The strategies and design of controlled delivery systems for various administration routes will also be discussed.

Couse ID: 161701591 **Description:** Biological Drugs & Biosimilars

Full Course Description: This course is concerned with biological drugs, their definition, techniques used in their production and purification, and their therapeutic applications. In addition, it discusses the definition of biosimilars and the guidelines developed by different agencies such as the European Medicines Agency (EMA), the World Health Organization (WHO) and the Food and Drug Administration (FDA), as well as the approval requirements and type of testing required for biosimilarity. In addition, this course covers topics related to innovation, patents and biologics: The road to biosimilar competition: factors in?uencing investment, Business Decisions and Marketing of Biosimilars.

Couse ID: 161701592 **Description:** Projects Management in Pharmacy

Full Course Description: The objective of this course is to provide students with basic knowledge of project management in relation to the pharmaceutical disciplines. Key educational aspects include: strategic planning, calculated decision making, total quality management, operations management, risk assessment, and economic management.

Courses Description

College: Pharmaceutical Sciences

Department:

Couse ID: 1717011590 **Description:** Drug Development & Manufacturing

Full Course Description: This course gives students essential information on the formulation and production of pharmaceutical dosage forms. The covered topics include taste masking approaches, formulation and manufacture of effervescent preparations, formulation and production of different dosage forms for specific types of active ingredients including peptides and proteins, plant medicines and poorly soluble drugs. The course also addresses the formulation strategies of generic oral drug products.

Couse ID: 1717011591 **Description:** Field Training

Full Course Description: This course gives students the knowledge, skills and actual exposure required for their prospective working in pharmaceutical industrial firms. This comprises training in various departments of pharmaceutical manufacturing plants including research & development, production, quality control and assurance departments.

Couse ID: 1717011592 **Description:** Projects Management in Pharmacy

Full Course Description: The objective of this course is to provide students with basic knowledge of project management in relation to the pharmaceutical disciplines. Key educational aspects include: strategic planning, calculated decision making, total quality management, operations management, risk assessment, and economic management.

Couse ID: 1717011595 **Description:** Advanced Seminar

Full Course Description: The material is no longer offered during the semester

Couse ID: 1717011596 **Description:** Selected Topics in Industrial Pharmacy

Full Course Description: In this course, the students have to attain recent knowledge about relevant specialized topics in Industrial Pharmacy.

Couse ID: 1717011597 **Description:** Drug Discovery and Development

Full Course Description: This course will explore the process of drug design and development, from target identification to final drug registration. It will present drug development as a process involving target selection, lead discovery using computer-based methods, and combinatorial chemistry/high-throughput screening. Safety evaluation, bioavailability, clinical trials, and the essentials of patent law will also be discussed. Along students will learn about molecular recognition, computer-aided drug design, and toxicology as applied to the development of new medicines.

Couse ID: 1917011231 **Description:** Pharmaceutical Calculations and Compounding

Full Course Description: This course aims to teach the students legal and professional aspects of pharmaceutical compounding. It discusses the pharmacopeias, official formulations, good compounding practices, storage for dispensed products, prescription, abbreviations, labeling, and operational requirements to compound a formulation. In addition, the Pharmaceutical calculations and Pharmaceutical considerations of common compounding procedures for various formulations beginning with solution dosage forms through the dispersed system and semisolid formulations, and ending with suppositories will be discussed.□
The course will foster the ability of the student to decide the need for suitable materials to be used for the formulation of a drug substance into a stable liquid or semisolid dosage form with build-in skills in problem-solving during compounding procedures. The students will be able to critically think and appreciate the need of designing an innovative dosage form that corresponds to the new challenges.□

Couse ID: 1917011334 **Description:** Physical Pharmacy - Practical

Full Course Description: This course consists of practical applications of physicochemical concepts that control the behavior and processing of pharmaceutical materials, such as the drug diffusion across membranes, increasing the solubility of the drug by different approaches, the partitioning of drugs between immiscible solvents, phase equilibria, and viscosity.

Courses Description

College: Pharmaceutical Sciences

Department:

Couse ID: 1917011461 **Description:** Ethics and Pharmaceutical Legistlation

Full Course Description: This course introduces the students to existing laws and regulations governing the practice of Pharmacy in Jordan. In addition, the course discusses the code of ethics in pharmacy and helps the student distinguish ethics from other kinds of issues in pharmacy, and identifies options open to a pharmacist faced with an ethical issue. Several ethical dilemmas as well as case studies are presented and discussed. Guests from the Jordan Food and Drug Administration as well as Jordan Pharmacy syndicate are hosted during the course to introduce various regulatory topics to the students.

Couse ID: 1917011559 **Description:** Advanced Drug Delivery Systems

Full Course Description: The course covers the fundamentals and principles of drug delivery, the strategies and materials used in controlled drug delivery, and the evaluation and characterization of such delivery systems. The strategies and design of controlled delivery systems for various administration routes will also be discussed.

Couse ID: 1917011575 **Description:** Pharmaceutical Quality Control and Regulatory Affairs

Full Course Description: This course investigates the current international guidelines and regulatory affairs related to the quality, safety, and efficacy of pharmaceutical dosage forms. It reviews the different guidelines related to the common technical document, test procedures and acceptance criteria for new drug substances and new drug products, Impurities in new drug substances and drug products, stability testing of new drug substances and products, Good Manufacturing Practices, Scale-Up and Postapproval Changes (SUPAC) Regulations, validation of analytical procedures, product development, Quality by Design and quality risk management, and investigation of bioequivalence studies.

Couse ID: 2217011571 **Description:** Hair and Body Care Products

Full Course Description:

Couse ID: 2217011572 **Description:** Special Topics in Cosmotic Science

Full Course Description: This course is a continuation for Cosmetic Science Course. Various cosmetic science special topics will be discussed including: Hair care products formulation, mechanism of action as well as customer counselling, sunscreen legislations worldwide, skin care products and customer counselling for rosacea and various skin conditions. Laser Hair removal as well as various up-to-date research published articles in cosmetic science will be discussed. The course will include field trips to local cosmetic companies.

Couse ID: 2217011573 **Description:** Applied Research in Industrial Pharmacy and Cosmotics

Full Course Description: The course is new within the new plan and has not been presented yet

Couse ID: 2317011573 **Description:** Specialized field training in cosmetic pharmacy

Full Course Description: