

Table (5)

Semester (5)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut.	Total		Period.	Pract./Tut.	Wr.	Oral		
Biochemistry II كيمياء حيوية-٢	PB 503	2	1	3	Biochemistry-I	20	40	75	15	150	2
Pharmaceutical Microbiology ميكروبيولوجيا صيدلانية	PM 502	2	1	3	General Microbiology and Immunology	20	40	75	15	150	2
Phytochemistry I كيمياء عقاقير-١	PG 504	2	1	3	Registration	20	40	75	15	150	2
Pharmaceutics III صيدلانيات-٣	PT 505	2	1	3	Physical Pharmacy	20	40	75	15	150	2
Medicinal Chemistry I كيمياء طبية-١	PC 501	2	1	3	Pharmaceutical organic III	20	40	75	15	150	2
Pharmacology I علم الأدوية-١	PO 502	2	1	3	Physiology II	20	40	75	15	150	2
Total		12	6	18						900	

- Lect. = Lecture
- Period. = Periodical
- Pract./ Tut. = Practical / Tutorial
- Wr. = Written Total

(ت داخلي: ١٣٤٠)، (ت : ٢٤١١٣٤٠)

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Table (6)

Semester (6)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut.	Total		Period.	Pract./Tut.	Wr.	Oral		
Biostatistics إحصاء حيوي	PO 603	1	-	1	Pharmacology-1	10	-	40	-	50	1
Pharmacology II علم الأدوية-٢	PO 604	2	1	3	Pharmacology-1	20	40	75	15	150	2
Pharmaceutics IV صيدلانيات-٤	PT 606	2	1	3	Physical Pharmacy	20	40	75	15	150	2
Biopharmaceutics and Pharmacokinetics صيدلة حيوية وحركية دواء	PT 607	2	1	3	Pharmaceutics I	20	40	75	15	150	2
Phytochemistry II كيمياء عقاقير-٢	PG 605	2	1	3	Phytochemistry-I	20	40	75	15	150	2
Medicinal Chemistry II كيمياء طبية-٢	PC 602	2	1	3	Medicinal Chemistry - I	20	40	75	15	150	2
Medical Microbiology ميكروبيولوجيا طبية	PM 603	2	--	2	General Microbiology and Immunology	15	--	75	10	100	2
Total		13	5	18						900	

- Lect. = Lecture
- Period. = Periodical
- Pract./ Tut. = Practical / Tutorial
- Wr. = Written

(ت داخلي: ١٣٤٠)، (ت : ٢٤١١٣٤٠)

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Course Content

المحتوى العلمى للمقررات الدراسية

Semester (5)

PB 503 Biochemistry II

It is course to study the biological oxidations and related biochemical processes, metabolism of carbohydrates, proteins and lipids and their regulations, role of hormones in metabolism regulation, integration of metabolism and metabolic disorders. Mineral metabolism, Biochemistry of cancer and free radicals and antioxidants.

PM 502 Pharmaceutical Microbiology

This course describes in detail the physical and chemical methods of bacterial eradication and how to effectively control microbial growth in the field of pharmaceutical industry / hospitals. It further describes the means of preservation of pharmaceutical products, as well as cosmetics, followed by the proper tests of quality control and sterility assurance. Sterilization, sterilization indicators, sterility testing, aseptic area, the microbiological quality of pharmaceuticals. Validation of sterilization process. Moreover, it explains the different groups of antimicrobials, their mechanism of action and resistance of microbes to biocides. Microbiological evaluation of antiseptics, disinfectants and preservatives.

PG 504 Phytochemistry I

Based on complementary medicine and Egyptian medicinal plants that can be used as natural extracts, bioactive raw materials and phytochemical standards to serve the pharmaceuticals, cosmetics and food industries in Egypt. The course aims to gain students the knowledge and skills that enable them to understand, describe and deal with the chemistry of volatile oils, resins, miscellaneous terpenoids, bitters of plant or animal origin, carbohydrates and glycosides of plant or animal origin and different techniques used for their preparation, identification and determination. Also, the students should become aware of different chromatographic methods used for isolation and analysis of different plant constituents and their pharmacological actions and medicinal uses.

PT 505 Pharmaceuticals III

This course covers solid dosage forms (tablets introduction, types, evaluation, additives, methods of manufacturing, tablet coatings), capsules (hard and soft, QC tests and microencapsulation), preformulation study (micromeritics, powders and granules), diffusion and dissolution study.

PC 501 Medicinal Chemistry I

This course includes introduction to Medicinal chemistry with respect to the basic terminology, drugs classification and nomenclature. In addition, the course focuses on the chemical, biochemical and pharmacological aspects of medicinal agents that belong to, ANS, CNS drugs, CVS drugs and drugs affecting neurotransmission as well as drugs

acting on immune system and neuromuscular disorders. It is constructed to allow understanding of the basics of drugs actions on the molecular levels, metabolism, methods of synthesis & assay. In addition structure activity relationship of the aforementioned drug classes should be clearly acknowledged.

PO 502 Pharmacology-I

The general principles of pharmacology are presented; such as pharmacokinetics, pharmacodynamics, receptor theory, drug interaction and principle of therapeutics. This course integrates principles of pharmacology with conceptual knowledge of physiology and pathophysiology to disease processes regarding the autonomic, neuromuscular and autacoids.

Semester (6)

PO 603 Biostatistics

This course provides basic concepts of biostatistics and data analysis. It includes introduction to descriptive and inferential statistics, interpretation of estimates, confidence intervals and significance tests, elementary concepts of probability and sampling; binomial and normal distribution, basic concepts of hypothesis testing, estimation and confidence intervals, t-test and chi-square test, linear regression theory and the analysis of variance.

PO 604 Pharmacology-II

This course integrates principles of pharmacology with conceptual knowledge of pathophysiology disease processes regarding drugs acting on cardiovascular systems, central nervous system, gastrointestinal tract, pulmonary systems and hematologic disorders. Antihyperlipidemic drugs are also included.

PT 606 Pharmaceutics IV

This course involves principles of formulation, development, sterilization, packaging and quality control testing of pharmaceutical sterile drug products. Principles for calculation and manipulation of parenterals, ophthalmic preparations, vaccines and blood products are emphasized. The course also covers the basic principles of formulation, sterilization, packaging and applications of radiopharmaceuticals in pharmacy and medicine. An in depth study on the formulation, manufacturing, quality control testing and applications of aerosols and other inhalation products is also accentuated.

PT 607 Biopharmaceutics and Pharmacokinetics

This course covers drug absorption, distribution, elimination, pharmacokinetics models, pharmacokinetics following IV and oral administration, bioavailability and bioequivalence, assessment of bioavailability and correlation between in vitro dissolution and in vivo absorption.

PG 605 Phytochemistry II

In continuation with Pharmacognosy I, this course aims to enable students to demonstrate the knowledge and experience that enables her/ him to understand, describe and deal with the chemistry of alkaloids, tannins and antioxidants of plant, fungi or animal origin as well as techniques for their isolation, identification and determination in their respective sources. Finally, the course focuses on the structure activity relationships (SAR) of these natural products derived compounds and their pharmacophoric features.

PC 602 Medicinal Chemistry II

The course includes the medicinal chemistry aspects of chemotherapeutic agents: classes of antibiotics and antimicrobials, antiviral, antifungals and antiparasitics. Additionally various anticancer therapies are also covered. It is designed to afford a comprehensive understanding of the structural features; mechanism of action and SAR of the known chemotherapeutic classes. The structural modification to attenuate and enhance the activity of the studied drug classes will be discussed

PM 603 Medical Microbiology

The course aims at studying microorganisms causing infectious disease in human beings. The infectious diseases, their etiology and clinical manifestation, routes of transmission, treatment and techniques in detection and identification of pathogenic microorganisms caused by Gram positive cocci & bacilli, Gram negative cocci & bacilli and mycobacteria of major significance to public health will be studied. The course provides students with the essential knowledge to recognize the epidemiology, mechanisms of pathogenesis, clinical picture, methods of laboratory diagnosis, treatment, prevention and control measures of RNA and DNA viral infections in humans