

**Table (5)**

**Semester (5)**

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./tu t	Total		Period.	Pract.	Wr.	Oral		
Pharmacology-II	PO 504	2	1	3	Basic Pharmacology	20	40	75	15	150	2
Pharmaceutical Microbiology	PM 502	2	1	3	General Microbiology & Immunology	20	40	75	15	150	2
Instrumental Analysis	PA 503	1	-	1	Pharmaceutical Analytical Chemistry II	10	-	40	-	50	1
Medicinal Chemistry-I	PC 501	2	1	3	Pharmaceutical Organic Chemistry-II	20	40	75	15	150	2
Pharmaceutical Dosage Forms-III	PT 505	2	1	3	Physical Pharmacy	20	40	75	15	150	2
Phytochemistry-I	PG 504	2	1	3	Pharmacognosy II	20	40	75	15	150	2
First Aid and Basic Life Support (BLS)	MD 505	1	1	2	Registration	15	25	60	--	100	1
<b>Total</b>		<b>12</b>	<b>6</b>	<b>18</b>						<b>900</b>	

- *Lect.* = Lecture
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- *Pract.* = Practical
- *Wr.* = Written

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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.	Wr.	Oral		
Pharmacology-III	PO 605	2	-	2	Pharmacology I	15	--	75	10	100	2
Phytochemistry-II	PG 605	2	1	3	Phytochemistry-I	20	40	75	15	150	2
Medicinal Chemistry-II	PC 602	2	1	3	Medicinal Chemistry I	20	40	75	15	150	2
Hospital Pharmacy	PP 602	2	1	3	Pharmacy Legislation and Ethics	20	40	75	15	150	2
Medical Microbiology	PM 603	2	1	3	General Microbiology and Immunology	20	40	75	15	150	2
Community Pharmacy	PP 601	2	1	3	Pharmacology I	20	40	75	15	150	2
Sterile Dosage Forms	PT 606	1	-	1	Pharmaceutical Dosage Forms I	10	--	40	---	50	1
Scientific Writing	NP 605	1	-	1	Registration	10	---	40	---	50	1
<b>Total</b>		<b>14</b>	<b>5</b>	<b>19</b>						<b>900</b>	

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## PA 503 Instrumental Analysis

The course focuses on introduction to spectroscopy, spectrophotometric methods of analysis, and spectrofluorimetry. It also include introduction of chromatography: Classification of chromatography, thin layer chromatography, paper chromatography, HPLC; types of stationary phase, types of HPLC detectors, UPLC, TLC, gas chromatography, capillary electrophoresis and their application to determine intact drug and degradation products.

## 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.

## PT 505 Pharmaceutical Dosage Forms III

The course introduces the students to the kinetics of drug decomposition including rate and order of the reaction, determination of the half-life, expiry date and shelf-life by different methods, stability testing, in-vitro possible drug/excipients interactions, diffusion and dissolution It also describes the principles and techniques involved in the formulation, and manufacturing of solid dosage forms including powders, granules, tablets, capsules and suppositories.

## PG 504 Phytochemistry-I

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AU-PHA-CPP-12-01

Pharm-D clinical مقررات



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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 the students the knowledge and experience those enable them to understand, describe and deal with the chemistry and Pharmaceutical uses of volatile oils, resins and resin combinations, carbohydrates, glycosides, and bitters of plant or animals as well as techniques for their, isolation, identification and determination from their respective sources. Clinical applications will be correlated with various clinical analyses.

### 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.

### MD 505 First Aid and Basic Life Support

Basic life support, bleeding, shock, medical emergencies, poisoning, bones and joints, soft tissue injuries, rescue and transportation

### PO 504 Pharmacology II

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This course integrates principles of pharmacology with conceptual knowledge of physiology and pathophysiology disease processes regarding drugs acting on central nervous system, gastro-intestinal and pulmonary systems. The anti-inflammatory, analgesics as well as gout treatments are also within the scope of the course.

## 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

## PT 606 Sterile Dosage Forms

This course involves principles of formulation, development, sterilization, packaging and QC testing of pharmaceutical sterile pharmaceutical products.

## PG 605 Phytochemistry-II

The course aims to enable students to demonstrate knowledge of basic concepts of chemistry and bioactivities of alkaloids, tannins and antioxidants as well as chromatographic techniques for their isolation and identification. The course emphasizes on drugs with valuable use in the Egyptian and worldwide markets, such as anti-cancer agents, drugs affecting CNS, drugs ameliorating liver diseases and anti-inflammatory agents. Finally, the course focuses on the structure activity relationships (SAR) of these natural products derived compounds and their pharmacophoric features. Clinical applications will be correlated with various clinical analyses.

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## 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.

## PO 605 Pharmacology III

This course integrates principles of pharmacology with conceptual knowledge of physiology and pathophysiology disease processes regarding drugs acting on endocrine system. Chemotherapeutic drugs including antimicrobials, anticancer and immunosuppressant are within the scope of the course. Stem cell therapy is also included.

## PP 601 Community Pharmacy

This course includes the study of the clinical situations that can be handled by the pharmacist in the community pharmacy (referral or using OTC medications) including upper respiratory tract, gastrointestinal, and musculoskeletal symptoms, skin, eyes, and ears, and childhood symptoms.

## PP 602 Hospital Pharmacy

Organization and structure of a hospital pharmacy, hospital pharmacy facilities and services (inpatient and outpatient services), transfer of care, patient's medication record, and rational medication use, hospital formulary, pharmacy and therapeutic committee, I.V. admixtures and

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incompatibilities, parenteral nutrition, handling of cytotoxic drugs, therapeutic drug monitoring, patient counselling and safety, and risk management

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