Alexandria University
Faculty of Pharmacy

Program Title:

Diploma in Pharmaceutical Microbiology

Program Code: 0904600

Duration: 1 year

Total Credit hours: 25 hours

Aims of the program

- Provide the graduates with a background in the area of Microbiology
- Work with the Egyptian pharmaceutical industry to ensure course material is timely, relevant and has practical application.
- Provide post graduate with further opportunities to develop their verbal and non-verbal communication skills.
- Apply critical and analytical thinking in reviewing literature.
- Promote self-development academically and professionally, and apply continuous self-education

Specialized courses

No.	Course title	Aim of the course	Credit hours		Code No.
			T	P	
1	**Fundamental microbiology**	To provide the student with detailed knowledge and skills concerning basic microbiology, as regarding the different types of cells as well as nomenclature and structure of the bacterial cells. In addition, the course aims to provide the students with thorough understanding of the physiology, metabolism, genetics and the pathogenesis of different microbes.	2	2	0904601
2	**Pharmaceutical microbiology and antimicrobial chemotherapeutic agents**	This course will provide the students with the essential knowledge of the different types of antimicrobial agents, their clinical use, side effects and modes of action. In-depth knowledge of antibiotic resistance mechanisms and antibiotic assays besides important antibiotic/drug interactions will also be covered.	2	2	0904602

3	**Microbiological quality control and quality assurance**	This course will provide the Diploma candidate with key knowledge of the microbiological quality control techniques and the instrumentations used in the pharmaceutical manufacturing process. Basic aspects of quality assurance will be taught in this course with emphasis on immunological and biotechnology pharmaceutical products	2	2	0904603
4	**Molecular microbiology**	This course builds on the student's knowledge of key concepts in molecular microbiology to explore experimental techniques for microbiological analysis including processes involved in gene expression and regulation, approaches to using molecular biology to undertake gene discovery and manipulation, principles of genetic engineering, gene cloning, DNA sequencing, experimentally relevant aspects of recombinant DNA technology and hybridoma techniques	3	2	0904604
5	**Advanced immunology and pathogenesis of infectious agents**	To give an up-to-date understanding of the immunology field. -To provide specialized knowledge of the adaptive and innate mechanisms of immunity, as well as the mechanism of protective immunity. -To focus on hypersensitivity reactions and other immune system-related disorders. -to discuss immunological tolerance. -to highlight the major pathogenicity mechanisms of bacteria, viruses, parasites and mycoses.	3	1	0904605
6	**Microbial biotechnology and environmental microbiology**	Application of biotechnology for production of pharmaceutically relevant products and recovery of microbial products. The course will cover the importance microorganisms in environmental pollutant bioremediation, conventional and new technological developments to eliminate selected environmental pollutants.	3	1	0904606
Total credit hours			25		