وصف البرنامج:

يهدف ماجستير العلوم الصيدلية في العقاقير إلى أعداد صيادلة ذوى قاعدة علمية وخبرة عملية متطورة في مجالات كيمياء العقاقيروالمنتجات الطبيعية وتصميم الأدوية المعتمدة على النباتات الطبية وإستكشاف الفعالية فى المصادر الطبيعية وتقييم المواد النقية الفعالة كمياً و نوعياً و تأثيراتها الدوائية فى الجسم ، و البرنامج يهيئ الخريج للتفاعل العلمى مع المتخصصين والباحثين في المجالات الطبية والصيدلانية المختلفة. ويشرف على هذا البرنامج قسم العقاقير والنباتات الطبية . تبين الجداول التالية الساعات المعتمدة المطلوبة للحصول على درجة ماجستير العلوم الصيدلية فى العقاقير مع توضيح المقررات الدراسية و عدد الساعات المعتمدة وتوزيع درجات الامتحان لكل مقرر .

الفصل الأول

Code	Course		Credit		Course Assessment			
			Lect	Pract	Course Work	Pract Exam	Written Exam	Total
PCR 801	Scientific Writing	Compulsory	1	0	10	-	40	50
PCR 802	Ethics of Scientific Research		1	0	10	-	40	50
PCR 803	Pharmaceutical Statistics		2	0	20	-	80	100
PHG 861	Chemistry of Secondary Metabolites		3	0	20	-	120	150
PHG 862	Spectral Characterization of Natural Products		2	0	20	-	80	100
PHG 863	Chromatographic Techniques		3	0	30	-	120	150
	Total Credits		**12**		**Total Marks**			**600**

الفصل الثاني :

Code	Course		Credit		Course Assessment			
			Lect	Pract	Course Work	Pract Exam	Written Exam	Total
PHG 864	Quality Control of Crude Drugs and Phytopharmaceuticals	Comp	2	0	20	-	80	100

PHG 865	Drug Discovery From Natural Resources		2	0	20	-	80	100
PHG 866	Biosynthesis in Medicinal Plants	**Elective**	2	0	20	-	80	100
PHG 867	Marine Natural Products		2	0	20	-	80	100
PHG 868	Plant Tissue Culture Methods		2	0	20	-	80	100
PHG 900	Thesis		**6**					
	Total Credits		**12**				**Total Marks**	**300**

بالإضافة الى 24 ساعة معتمدة "رسالة" توزع على الأقل على فصلين دراسيين إضافيين .

PROGRAM COURSES

PCR 801: SCIENTIFIC WRITING (1+0)

Course Description

This course aims to demystify the writing process and teach the fundamentals of effective scientific writing. Instructions will focus primarily on the process of writing and publishing scientific manuscripts but grant writing will also be addressed. The course will be presented in two segments: Part (1) teaches students how to write effectively, concisely, and clearly and part (2) takes them through the preparation of an actual scientific manuscript or grant.

PCR 802: ETHICS OF SCIENTIFIC RESEARCH (1+0)

Course Description

The course is essentially intended for graduate students in the biomedical sciences. This course delineates important ethical issues of scientific investigation, including intellectual property, plagiarism, conflict of interest, human and animal subjects, and record keeping.

PCR 803: PHARMACEUTICAL STATISTICS (2+0)

Course Description

An intensive introductory course in statistical methods used in applied research. Emphasis is placed on the principles of statistical reasoning, underlying assumptions, and careful interpretation of results. Topics covered include descriptive statistics, graphical displays of data, introduction to probability, expectations and variance of random variables, confidence intervals and tests for means, differences of means, proportions, differences of proportions, chi-square tests for categorical variables, regression and multiple regressions, an introduction to analysis of variance.

PHG 861: CHEMISTRY OF SECONDARY METABOLITES (3+0)

Course Description

Candidates are introduced to the advanced methods for the isolation of natural products belonging to different chemical classes, as well as to their characterization and identification. The objective of this course is to educate the graduate students and familiarize them with essential knowledge concerning the nature of plant and animal metabolites and the isolation methodologies and fractionation techniques of expected metabolites in the light of recent developments in these areas.

PHG 862: SPECTRAL CHARACHTERIZATION OF NATURAL PRODUCTS (2+0)

Course Description

The objective of this course is to acquaint the graduate student with the most utilized spectral methods and techniques involved in the characterization, identification and structure elucidation of different classes of natural products. The course would also cover the application of different spectroscopic methods, NMR, MS, etc. in the structure elucidation of compounds with examples from different chemical classes and integrated interpretation of different techniques.

PHG 863: CHROMATOGRAPHIC TECHNIQUES (3+0)

Course Description

The course deals with the principles underlying the different chromatographic techniques and their application in the qualitative and quantitative analysis as well as in the isolation and purification of natural products.

PHG 864: QUALITY CONTROL OF CRUDE DRUGS AND PHYTOPHARMA-CEUTICALS (2+0)

Course Description

This course is designed for graduate students in Pharmacognosy to enhance their capabilities and basic understanding of the principles and methodologies of the quality control of herbals and herb-derived products aiming at the development of student's problem solving skills in assuring effectiveness and efficiency of drugs of natural origin.

PHG 865: DRUG DISCOVERY FROM NATURAL RESOURCES (2+0)

Course Description

The course will discuss the current therapeutic research lines based on natural resources. The different strategies and approaches used in the area of drug discovery from plants, marine organisms, microbes, etc, will be illustrated. Under this course students will learn the basis of the "bioassay-guided fractionation" approach and its capacity in detection and isolation of therapeutically active constituents from extracts of natural resources. The use of in-vitro-bioassays in screening crude extracts for a specific medicinal effect will be studied. The course will review the design and summary of outputs of recent research in discovery of new therapeutics as examples, with particular emphasis on antitumor, cancer chemopreventive [anticarcinogenic],

immunomodulating, antiviral and schistosomicidal agents. Students will learn how to better conserve the plant and marine national wealth while conducting drug discovery programs**.**

PHG 866: BIOSYNTHESIS IN MEDICINAL PLANTS (2+0)

Course Description

This course introduces the significance of secondary metabolites in the life of plants, as well as to methods of studying biosynthesis. Biosynthesis of examples originating from sugars, acetate, activated isoprene; amino acids and shikimic acid are studied. This course helps postgraduate students understand the different biosynthetic pathways and use of radioactive labels to trace the biosynthetic pathways and isolation of different intermediate compounds. It involves a detailed study on different enzymatic functions in order to increase the desired products and reduce unwanted intermediates.

PHG 867: MARINE NATURAL PRODUCTS (2+0)

Course Description

The candidate is introduced to ecology of marine organisms as well as hydrographic and climatic factors, marine zones, communities and taxonomy. Examples of bioactive marine organisms are studied both chemically and biologically.

PHG 868: PLANT TISSUE CULTURE METHODS (2+0)

Course Description

The course is intended for postgraduates with an interest in plant biotechnology or plant propagation. It is designed to provide an introduction to the theory and practice of plant tissue culture, both as a foundation tool for plant biotechnology and as propagation system. The course will provide an introduction to the stages of plant tissue culture, the major classes of plant growth regulators and their effects in tissue culture. Plant mineral nutrition and applications of plant tissue culture in commercial propagation are dealt with.