وصف البرنامج:

يهدف برنامج ماجستير العلوم الصيدلية في الصيدلانيات الى إعداد صيادلة باحثين ذوى خلفية علمية وخبرة عملية متطورة في نظم توصيل الدواء الحديثة وتوجيهه بالأضافة الى تقييم مستحضراته وضمان جودتها. البرنامج يهيئ الخريج للتفاعل العلمى مع المتخصصين والباحثين في المجالات الصيدلية المختلفة بالأضافه إلى كونه مؤهل لتسجيل درجة الدكتوراه في نفس التخصص. ويشرف على هذا البرنامج قسم الصيدلانيات و التكنولوجيا الصيدلية. و تبين الجداول التالية الساعات المعتمدة المطلوبة للحصول على درجة الماجستير فى العلوم الصيدلية فى الصيدلانيات والتكنولوجيا الصيدلية مع توضيح المقررات الدراسية وعدد الساعات المعتمدة وتوزيع درجات الإمتحان 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
PHT 831	Advanced Pharmaceutics		3	0	30	-	120	150
PHT 832	Novel Drug Delivery Systems		3	0	30	-	120	150
PHT 833	Advanced Industrial Pharmacy		2	0	20	-	80	100
	Total Credits		**12**		**Total Marks**			**600**

الفصل الثاني

Code	Course		Credit		Course Assessment			
			Lect	Pract	Course Work	Pract Exam	Written Exam	Total
PHT 834	Site-Specific Drug Targeting	Compulsory	2	0	20	-	80	100
PHT 835	Biopharmaceutics, Pharmacokinetics and Pharmacodynamics		2	0	20	-	80	100
PHT 836	Biomedical Nanotechnology	El	2	0	20	-	80	100

PHT 837	Quality Control, Quality Assurance, GMP and Validation		2	0	20	-	80	100
PHT 900	Thesis		**6**					
	Total Credits		**12**		**Total Marks**			**300**

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

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.

PHT 831: ADVANCED PHARMACEUTICS (3+0)

Course Description

This course aims at introducing the concept and process of pharmaceutical drug development. A guideline from synthesis and screening of a new chemical entity through pre-formulation process

and formulation development, clinical trials and eventually the regulatory and agency filing. Thorough discussion on the pre-formulation process including lab scale prototype development, stability profiling, early stage regulatory concerns. Introducing in vitro/in vivo formulation assessment of oral and controlled-release products and novel dosage forms such as transdermal therapeutic systems and osmotic pumps, inhaled dosage forms, in addition to disperse formulations.

PHT 832: NOVEL DRUG DELIVERY SYSTEMS (3+0)

Course Description

The course objectives are i) to give participants an in-depth overview of important fundamental principles for novel drug delivery and ii) to present methodologies for optimizing delivery of different drug classes ranging from small molecules to complex biomacromolecules (peptides, proteins, nucleic acids and vaccines). The course will cover the enabling role of medical devices in drug delivery technology, drug delivery applications of nanotechnology. This course also reviews the structure of membranes and the variety of ways in which materials travel across membranes by active or passive processes. The course discusses topics including biomembrane transport in drug development, dosage form evaluation and drug delivery techniques overcoming biological membranes.

PHT 833: ADVANCED INDUSTRIAL PHARMACY (2+0)

Course Description

The program is geared towards understanding two main themes. The first one is concerned with the scientific principles involved in the techniques employed in the modern pharmaceutical industry. The second one focuses on how to cope with the local as well as the international marketing and regulatory guidelines. The program provides in-depth training in various drug development aspects including sequential steps involved in the production of pharmaceutical products, drug manufacturing in accordance with cGMP guidelines and other quality attributes and the influence of environmental factors on the drug manufacturing facilities.

PHT 834: SITE SPECIFIC DRUG TARGETING (2+0)

Course Description

The course will detail site-specific delivery or activation of the therapeutic compounds in the site of action therefore enhancing drug efficacy by increasing local active drug concentration in diseased tissues and to decrease side effects by minimizing drug exposure in normal tissues. These technologies include: intratumoral drug administration, liposomal drug delivery, tumor-activated prodrug therapy, antibody-directed enzyme prodrug therapy, gene-directed enzyme prodrug therapy, folate-targeted drug delivery, transferrin targeted drug delivery, albumin-drug conjugate for targeted delivery, prodrug targeted delivery and others.

PHT 835: BIOPHARMACEUTICS, PHARMACOKINETICS AND PHARMACO-DYNAMICS (2+0)

Course Description

To provide students with an understanding of the processes involved in the absorption, distribution, and elimination of drugs and the manner in which these processes influence the dosage regimens of drugs. The course will introduce the mechanisms for the genetic and environmental basis for inter-subject differences in the metabolism and transport of drugs in the body, metabolite kinetics. Non-linear pharmacokinetics. Pharmacokinetic-pharmacodynamic relationships, therapeutic regimens and dosage adjustments in diseased states, in the young and in the elderly, pharmacokinetic drug interactions, bioavailability and bioequivalence. Introducing quantitative aspects of the relation of pharmacokinetics to pharmacometrics, the drug effect, play a major role. Pharmacometrics focuses on the quantitative aspects of drug effects and kinetics in the body. The quantative information will optimize drug dosage, drug treatment in the individual patient and can be used to plan further research.

PHT 836: BIOMEDICAL NANOTECHNOLOGY (2+0)

Course Description

A multidisciplinary course covering nanotechnology based drug delivery, materials and processes for novel drug delivery systems, synthesis of biocompatible nanoparticles for healthcare, product design, products today and regulatory issues.

PHT 837: QUALITY CONTROL, QUALITY ASSURANCE, GMP AND VALIDATION (2+0)

Course Description

The course provides a detailed account on quality control, quality, management, process control, material control, buildings equipment, production procedures, GMP and validation. The course deals with the strengths, weakness and requirements of GMP, methods of GMP adoption within a manufacturing facility as well as the supporting infrastructure for GMP application. The course will focus also on all aspects concerning process validation, regulatory aspects and documentation.