

PHARMACEUTICAL TECHNOLOGY, DRUG DELIVERY AND REGULATORY ASPECTS (90 HOURS)

Timetable

Part I: Basics in Pharmaceutical Sciences: (in French); Pharmacie Galénique: notions essentielles (35 hrs)

	Time	Contact hrs	Faculty	Title
Monday 11 Jan 2010	16h00 – 20h00	4	RG/FD	Introduction de l'enseignement - Le médicament, les voies d'administration, formulations conventionnelles et modulées
Tuesday 12 Jan 2010	16h00 – 19h00	3	RG/FD	Les Pharmacopées -Préparations liquides injectables
Wednesday 13 Jan 2010	16h00 – 20h00	4	RG/FD	Voie ophtalmique - Stérilisation et contrôles des préparations liquides
Thursday 14 Jan 2010	16h00 – 19h00	3	RG/FD	Les émulsions et les suspensions
Friday 15 Jan 2010	16h00 – 19h00	3	RG	Préparations solides, Séminaire
Saturday 16 Jan 2010	9h00 – 12h00 13h00 – 17h00	7	RG/FD	Compression – Biopharmacie de la voie orale - Pharmacocinétique – Séminaire
Monday 18 Jan 2010	16h00 – 20h00	4	RG/FD	Comprimés – contrôle de qualité
Tuesday 19 Jan 2010	16h00 – 19h00	3	RG/FD	Comprimés enrobés– assurance de qualité
Wed 20 Jan 2010	16h00 – 20h00	4	RG/FD	Comprimés spéciaux–Capsules Séminaire
		35		

Part II: Drug Delivery Concepts and Polymer Science (25 hrs)

	Time	Hours	Faculty	Title
Thursday 21 Jan 2010	16h00 – 20h00	4	HPM/MM	<ol style="list-style-type: none"> 1. Introduction into drug delivery and targeting concepts 2. Introduction to Polymers and Biomaterials "Definitions and Classifications", "Applications in Daily Life"
Friday 22 Jan 2010	16h00 – 19h00	3	HPM/MM	<ol style="list-style-type: none"> 1. Alternative routes: Systemic drug delivery by the buccal, nasal, pulmonal and transdermal routes 2. Synthesis Methods Part I: Polycondensation, Polyaddition, and examples of deriving materials in medical products
Saturday 23 Jan 2010	9h00 – 12h00 13h00 – 17h00	7	HPM/MM	<ol style="list-style-type: none"> 1. ?? 2. Synthesis Methods Part II: Radical, Ionic, ROP, ROMP,... and examples of deriving materials in medical product. 3. Drug formulation and delivery of therapeutic peptides and proteins 4. Analytical Methods and Polymer Processing
Monday 25 Jan 2010	16h00 – 20h00	4	HPM/MM	<ol style="list-style-type: none"> 1. Nanomedicines: Current and future concepts 2. Concepts and requirements for polymers in different applications for use in humans: Biocompatibility
Tuesday 26 Jan 2010	16h00 – 19h00	3	HPM/MM	<ol style="list-style-type: none"> 1. Delivery concepts in gene therapy: plasmid DNA, oligonucleotides, and small interfering RNA 2. Polymers in formulations, tissue engineering and artificial organs
Wednesday 27 Jan 2010	16h00 – 20h00	4	HPM/MM	<ol style="list-style-type: none"> 1. Seminars featuring student presentations on current perspectives and trends in drug delivery and targeting 2. Seminars featuring case studies of biomedical polymer applications
		25		

Part III: Specific Aspects of Drugs Preparation in Mauritius: (30 hrs)

1. Drug regulation in Mauritius
 - a. The Pharmacy Act 1983
 - i. The Pharmacy Board – powers and duties
 - b. Specificities of pharmaceutical trade in Mauritius
 - i. Pharmacy Licensing
 - ii. Drug scheduling
 - iii. Supervision of pharmacies
 - iv. Control of imports
 - v. Price control
 - vi. Range of products in pharmacies
 - vii. Generics v/s Branded products
 - viii. Drug promotion and drug information
 - ix. Pharmacovigilance
 - x. Hospital pharmacy
 - c. Manufacture of Pharmaceutical products
 - i. History
 - ii. Regulatory aspects
 1. Basic material requirements
 2. GMP and quality control
 3. Drug inspection
 - iii. Economic aspects
 - iv. Practical set-up and constraints
 - v. Drug production viewed from TRIPS
 - vi. Preparation of ayurvedic and other traditional medicines in Mauritius
 - vii. The future of drug production in Mauritius
 1. Industrial production
 2. Hospital-based processing
 - d. Drug distribution
 - i. Regulatory aspects
 - ii. Statistics and demography
 - iii. Specificities, advantages and limitations of the Mauritian model
 - iv. The future of drug distribution in Mauritius
 - e. Research Topics
 - i. Importance and relevance of drug research in Mauritius
 - ii. Drug utilization studies (WHO, HAI, Local NGOs, UoM students)
 - iii. Bioequivalence studies
 - iv. Pharmacogenomics applied to Mauritian context
 - v. Clinical trials

1. Current status of the law
2. The draft Clinical Trials Bill
3. Strength, weaknesses and opportunities for Mauritius in the field of drug research
4. Drug testing on Animals
5. Topics of current interest for drug research in Mauritius
 - a. Drug delivery systems
 - b. Drugs for children
 - c. Effective drug information
 - d. Cosmetics testing – current aspects and future development
 - e. Stability studies
 - f. Bioequivalence studies
 - g. Clinical pharmacy & Pharmacovigilance
 - h. Quality Assurance of pharmaceutical products
 - i. Clinical trials involving drugs used in the following diseases:
 - i. Diabetes
 - ii. Hypertension and other cardiovascular diseases
 - iii. Asthma
 - iv. Allergy
 - v. Dermatological conditions
 1. Acne
 2. Fungal infections
 - vi. Cancer (for which good databases exist)
 - vii. Contraception (Good records available)

RECOMMENDED TEXTBOOKS

In English:

G. S. Banker and C. Rhodes: Modern Pharmaceutics (Drugs and the Pharmaceutical Sciences) (2002), M. Dekker publisher
Martin, P. Bustamante and A.H.C. Chun: Physical Pharmacy, Lea & Febiger, 4e édition (1993)

In French:

Le Hir : Abrégé de pharmacie galénique, Masson, 8ème édition (2001).
Rossetto: Pharmacotechnie industrielle, Phi 41, imt, 1e édition (1998).

EXAMS

Final Written Exams: May 2010

