Formulation and Drug Delivery

Module Information

2022.01, Approved

Summary Information

Module Code	7121PHASCI
Formal Module Title	Formulation and Drug Delivery
Owning School	Pharmacy & Biomolecular Sciences
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

Learning Methods

Learning Method Type	Hours
Lecture	20
Practical	18
Workshop	8

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To provide students with knowledge and skills to master the principles of pharmaceutical formulation and advanced drug delivery methods.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Demonstrate expertise in applying the principles of pharmaceutical formulation in the design of advanced drug delivery systems
MLO2	2	Formulate and evaluate a pharmaceutical delivery system.
MLO3	3	Display mastery of interpreting complex information and data in the evaluation of advanced drug systems

Module Content

Outline Syllabus	Introduction to the basic components of formulation, delivery systems (nanoparticles, tablets, capsules, etc.) and routes of delivery (oral, buccal, parenteral, pulmonary, nasal, topical, transdermal).Immediate and modified release systems: excipients and polymers; immediate release formulations; modified release formulations; oral and buccal delivery; fast disintegrating tablets and enteric coatings etc; Paediatric delivery.Nanoformulation; nanomedicines; biodegradable polymers; polymeric micro/nanoparticles; lipid-based nanoparticles; parenteral and pulmonary delivery; targeted delivery; cancer therapy.Challenges in biopharmaceutical delivery: proteins, vaccines, genes; biomolecule stability, bioavailability and first pass metabolism; solutions, nanoparticles and lipid carriers; Routes of delivery; insulin and vaccine delivery.Special topics and future developments supported by recent literature. For example; clays for drug delivery, wound healing, nanoparticles for medical diagnosis. Mini-project: Group project to design, produce and evaluate a delivery system for an assigned API.
Module Overview	
Additional Information	Practical sessions will involve students developing hands-on experience of formulating and evaluating delivery systems.Exam will assess students understanding of the principles through data interpretation and problem solving questions

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Portfolio	Mini project	40	0	MLO1, MLO2, MLO3
Centralised Exam	exam	60	3	MLO1, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Imran Saleem	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings