Liverpool John Moores University

Title:	Advanced Pharmaceutical Techniques, Therapeutics and Delivery Systems
Status:	Definitive
Code:	**6006DFACAP** (117498)
Version Start Date:	01-08-2011
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
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Academic Level:	FHEQ6	**Credit Value:**	24.00	**Total Delivered Hours:**	48.00
Total Learning Hours:	240	**Private Study:**	192		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	36.000
Practical	4.000
Workshop	5.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		70.0	3.00

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	MCQ		10.0	
Practice	Prac	The practical excercise will be problem based and in groups. Assessment will involve a group presentation and an individual report	20.0	

Aims

To present and illustrate industrially relevant techniques for the production and characterisation of pharmaceutical materials. To highlight recent advances in drug delivery technology and the therapeutic applications of pharmaceutics.

Learning Outcomes

After completing the module the student should be able to:

1 Demonstrate an understanding of a range of techniques for the design, synthesis and characterisation of pharmaceutical materials for drug delivery
2 Evaluate approaches to formulation and testing of pharmaceuticals for in vivo delivery
3 Interpret thermodynamic and kinetic aspects of enzyme-catalysed reactions
4 Critically discuss the molecular mechanisms of drug action and the application of such drugs in a clinical situation

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Closed book examination	1	3	4
MCQ Test	1	3	4
Practical	2		

Outline Syllabus

Techniques to control drug particle morphology and the production of therapeutic mono dispersed particulate systems.
Advanced crystal growth techniques and the characterisation of solid state properties.
The function and associated considerations of advanced pharmaceutical technologies in exploring the physicochemical properties of materials.
The testing of biologicals, including vaccines, therapeutic immunoglobulins and monoclonal antibodies using ELISA and radio-immunoassay techniques.
The preparation, evaluation and therapeutic indications of novel drug delivery systems including liposomes, nanoparticles, biodegradable polymers and lipids.
Kinetics and thermodynamics as applied to quantitative structure-activity

relationships (QSAR) for enzyme-catalysed reactions'
Drug use in microbial, malignant and CNS disorders: considerations in specific diseases; clinical feedback and drug development. Drug resistance as a therapeutic problem. Mechanistic, molecular basis of mode of action of drugs.

Learning Activities

Learning activities will include: formal lectures; supported workshops to underpin the lecture material; practical excercises and demonstrations.

References

Course Material	Book
Author	G.T. Barnes and I. R. Gentle
Publishing Year	2005
Title	Interfacial Science An Introduction
Subtitle	
Edition	
Publisher	Oxford University Press, United States
ISBN	

Course Material	Website
Author	
Publishing Year	
Title	KSV Nima
Subtitle	
Edition	
Publisher	http://www.ksvnima.com
ISBN	

Course Material	Book
Author	Graham L Patrick
Publishing Year	2009
Title	An introduction to medicinal chemistry
Subtitle	chapters 3 & 18, "Enzymes: Structure and function" & "Quantitative Structure-Activity Relationships."
Edition	4th edition
Publisher	Oxford Univ. Press
ISBN	

Notes

Additional support material will be provided by lecturers via Blackboard as appropriate