Liverpool John Moores University

Title:	Drug Design
Status:	Definitive
Code:	**5005MCACAP** (117493)
Version Start Date:	01-08-2012
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
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Academic Level:	FHEQ5	**Credit Value:**	24.00	**Total Delivered Hours:**	53.00
Total Learning Hours:	240	**Private Study:**	187		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	35.000
Practical	12.000
Workshop	4.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	ASS1	Section A 40 MCQ Section B 3 questions from 6	70.0	2.00
Report	ASS3	Reports of practical exercises undertaken	30.0	

Aims

To present and illustrate the principles and processes involved in the design and development of a new drug substance

Learning Outcomes

After completing the module the student should be able to:

LO 1	demonstrate an understanding of the chemistry involved in drug receptor interactions
LO 2	Demonstrate a knowledge the chemical principles of signal transduction.
LO 3	Discuss the processes involved in drug discovery and design.
LO 4	Describe the mechanisms by which drugs are metabolised and excreted and factors that influence the rate at which these occur.
LO 5	Describe the mechanisms of toxification/detoxification.
LO 6	Demonstrate an understanding of the phases of a clinical trial.

Learning Outcomes of Assessments

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

Unseen examination	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6
Report of practical classes	LO 3	LO 4				

Outline Syllabus

Introduction to the drug design process by way of case studies.
Drug targets(receptors and signal transduction, enzymes as drug targets, and nucleic acids as drug targets).
Drug discovery (lead compounds, lead optimisation, chemoinformatics, and combinatorial chemistry).
Drug metabolisms, introduction to toxicity studies and clinical trials.

Learning Activities

As well as traditional presentation methods, such as lectures and practicals, on specific topics there will be problem-solving exercises.

References

Course Material	Book
Author	M T D Cronin
Publishing Year	2004
Title	Predicting Chemical Toxicity and Fate
Subtitle	

Edition	
Publisher	CRC Press
ISBN	

Course Material	Book
Author	D Cairns
Publishing Year	2008
Title	Essentials of Pharmaceutical Chemistry
Subtitle	
Edition	3rd
Publisher	Pharmaceutical Press
ISBN	0853694370

Course Material	Book
Author	F D King
Publishing Year	2002
Title	Medicinal Chemistry
Subtitle	Principles and Practice
Edition	
Publisher	Royal Society of Chemistry
ISBN	0851864945

Course Material	Book
Author	A Burger
Publishing Year	1995
Title	Burger's Medicinal Chemistry and Drug Discovery
Subtitle	Volumes 1 -3
Edition	5th
Publisher	Wiley
ISBN	

Course Material	Book
Author	B G Katzung
Publishing Year	2004
Title	Basic and Clinical Pharmacology
Subtitle	
Edition	7th
Publisher	Prentice Hall
ISBN	0838505651

Notes

This module will present and explain to students the principles and processes involved in the design of a new drug substance.