Liverpool John Moores University

Title:	Pharmaceutical Formulation
Status:	Definitive
Code:	**5004DFACAP** (117494)
Version Start Date:	01-08-2014
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
Matthew Roberts	Y
Imran Saleem	
Touraj Ehtezazi	
Ian Cubbin	

Academic Level:	FHEQ5	**Credit Value:**	24.00	**Total Delivered Hours:**	56.00
Total Learning Hours:	240	**Private Study:**	184		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	32.000
Practical	17.000
Tutorial	4.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	exam		70.0	3.00
Test	test		15.0	1.00
Practice	prac		15.0	

Aims

To illustrate powder technology, the formulation, production and testing of solid oral pharmaceutical products and to review the formulation and use of non-oral drug

delivery systems.

Learning Outcomes

After completing the module the student should be able to:

1	Apply knowledge of powder technology to the development, manufacture and evaluation of solid oral dosage forms.
2	Discuss the concepts of formulating, producing and testing solid oral dosage forms.
3	Demonstrate an understanding of oral bioavailability and the use of modified-release drug delivery systems.
4	Describe the formulation and use of pulmonary, nasal, transdermal, vaginal and rectal drug delivery systems.
5	Discuss the preparation of semi-solid pharmaceutical products.
6	Demonstrate knowledge of pharmaceutical packaging technology.

Learning Outcomes of Assessments

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

closed book exam	2	3	4	5	6
coursework test	1				
practical report	2				

Outline Syllabus

Particle size reduction, powder mixing, granulation & drying.
Formulation, manufacture and testing of tablets and capsules.
Formulation and mechanisms of modified-release oral dosage forms in controlling bioavailability.
Pulmonary, nasal, transdermal, vaginal and rectal drug delivery systems.
Formulation and properties of semi-solid pharmaceutical products.
Pharmaceutical packaging, extractables & leachables.

Learning Activities

Lectures
Practicals
Tutorials

References

Course Material	Book
Author	M.E. Aulton & K.M.G. Taylor
Publishing Year	2013
Title	Pharmaceutics

Subtitle	The design and manufacture of medicines'
Edition	4th edition
Publisher	Churchill Livingstone
ISBN	0702042900

Course Material	Website
Author	MHRA
Publishing Year	2013
Title	British Pharmacopoeia
Subtitle	
Edition	
Publisher	TSO
ISBN	

Course Material	Book
Author	MHRA
Publishing Year	2013
Title	Rules and guidance for pharmaceutical manufacturers and distributors
Subtitle	The orange guide
Edition	
Publisher	Pharmaceutical Press
ISBN	0857111027

Course Material	Book
Author	R.C. Rowe, P.J. Sheskey, W.G. Cook, M.E. Fenton
Publishing Year	2012
Title	Handbook of Pharmaceutical Excipients
Subtitle	
Edition	7th Edition
Publisher	Pharmaceutical Press
ISBN	9780857110275

Notes

This module introduces the student to the formulation, manufacture and testing of solid oral pharmaceutical dosage form (tablets and capsules) as well as the development of oral modified release dosage forms. The study of powder properties and the unit processes of mixing, drying and granulation with respect to pharmaceutical powders is also completed.
This module also introduces the student to nasal, pulmonary, transdermal, vaginal and rectal drug delivery systems and the concepts of pharmaceutical packaging.