Liverpool John Moores University

Title:	PHARMACEUTICAL DOSAGE FORMS
Status:	Definitive
Code:	**5003DFACAP** (113287)
Version Start Date:	01-08-2011
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
Matthew Roberts	Y
Imran Saleem	
Michael Davies	
Robert Jones	
Ian Cubbin	

Academic Level:	FHEQ5	**Credit Value:**	24.00	**Total Delivered Hours:**	63.00
Total Learning Hours:	240	**Private Study:**	177		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	39.000
Online	1.000
Practical	16.000
Tutorial	4.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	80.0	3.00
Report	AS2	Practical exercises	10.0	
Test	AS3	MCQ Test	10.0	

Aims

To illustrate powder properties and technology.

To demonstrate the use of powder flow, mixing, drying and granulation techniques.
To review this technology in the formulation and development of hard gelatin capsules.
To review the formulation and development of soft gelatin capsules. [softgels].
To demonstrate tablet formulation, manufacture and testing.
To illustrate the behaviour of the GIT in relation to [a]oral therapy and the impact of bioavailability and bioequivalence and [b]the design of suitable in vitro dissolution test methodology.
To present the development of modified release oral delivery systems - matrices, multiparticulates, osmotic pumps.
To review the formulation and development of other more specialised solid dosage forms e.g. sublingual, buccal, pessaries, suppositories.
To describe and evaluate the formulation, preparation, manufacture and quality control of radiopharmaceuticals.
To review pharmaceutical packaging technology.
To review the principles and concepts of Good Manufacturing Practice (GMP).

Learning Outcomes

After completing the module the student should be able to:

1	Discuss the concepts of formulating, manufacturing and testing capsules, tablets (including special types) and modified-release oral delivery systems.
2	Apply knowledge of powder technology and unit processes (granulation, drying, milling and coating) to the development and manufacture of solid oral dosage forms.
3	Recall the concepts and principles of formulating and developing suppositories and pessaries.
4	Demonstrate knowledge of pharmaceutical packaging technology.
5	Discuss the principles and concepts of Good Manufacturing Practice (GMP).
6	Recall the concepts of formulation, preparation, manufacture and quality control of radiopharmaceuticals.

Learning Outcomes of Assessments

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

EXAM	1	3	4	5	6
Report	1	2			
Test	3				

Outline Syllabus

Unit processes: mixing, granulation, drying and coating.
Capsules: Types, formulation, processing, filling, machines, defects and standards.
Tablets: Types, formulation, machines, defects, standards and testing.
GIT, bioavailability and the biopharmaceutical classification system.
Modified release oral dosage forms matrices, multiparticulates, osmotic pumps.

Pessaries and Suppositories.
Radiopharmaceuticals and their preparation.
GMP: Structure, Systems and application.
Packaging.

Learning Activities

Assignment and report writing. Literature searching.
Problem solving.
Data manipulation.
Interpretation exercises.

References

Course Material	Book
Author	Rowe, R.C., Sheskey, P.J., Weller P.J.
Publishing Year	2003
Title	Handbook of Pharmaceutical Excipients.
Subtitle	
Edition	
Publisher	APA
ISBN	0 8536 94729

Course Material	Book
Author	MHRA
Publishing Year	2009
Title	British Pharmacopoeia
Subtitle	
Edition	
Publisher	TSO
ISBN	011322799X

Course Material	Book
Author	Aulton, M.E.
Publishing Year	2007
Title	Pharmaceutics
Subtitle	The design and manufacture of medicines
Edition	3rd edition
Publisher	Churchill Livingstone
ISBN	0443101086

Course Material	Book
Author	Banker,G.S. and Rhodes,C.T.
Publishing Year	2002
Title	Modern Pharmaceutics

Subtitle	
Edition	4th edition
Publisher	Marcel Dekker Inc.
ISBN	0 8247 06749

Course Material	Book
Author	MHRA
Publishing Year	2007
Title	Rules and guidance for pharmaceutical manufacturers and distributors
Subtitle	The Orange Guide
Edition	
Publisher	Pharmaceutical Press
ISBN	0853697191

Notes

This module introduces the student to the formulation of hard and soft gelatin capsules. The study of powder properties and the unit processes of mixing, drying and granulation with respect to pharmaceutical powders is also completed.
This module introduces the student to the major pharmaceutical dosage form - Tablets: the processes, controls and formulation. The development of oral controlled release dosage forms, the specialist dosage forms of suppositories and pessaries and use of radiopharmaceuticals are covered. The concepts of pharmaceutical packaging and GMP are also completed.