MODULE DESCRIPTOR

Module Title

Medicine Analysis and Design

Reference	PL4001	Version	1
Created	April 2022	SCQF Level	SCQF 10
Approved	June 2022	SCQF Points	30
Amended	August 2021	ECTS Points	15

Aims of Module

To understand advanced drug delivery and the analytical quality assessment of such products.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Understand the limitations associated with some novel active substances and how formulation techniques can be used to enhance/modify/overcome these issues to create a medicine fit for purpose.
2	Appraise the major qualitative and quantitative analytical techniques used for the quality assurance of medicinal products.
3	Critically evaluate data from instrumental techniques in both quantitative and qualitative analysis of medicinal products when determining the quality of medicinal products.
4	Critically evaluate the design, formulation and application of advanced drug delivery systems for the different routes of administration

Indicative Module Content

The application of instrumental techniques in the Quality Assurance of medicinal products. Topics include: purpose of pharmacopoeial monographs, pharmaceutical and biopharmaceutical analyses; characterisation, evaluation and selection of assay methods; drug assays and structure elucidation by UV, IR, Raman, fluorescence, atomic spectroscopy, NMR and MS; drug quality and quantity by UV, fluorescence, TLC, GLC and HPLC. Delivering therapeutics in a way that is right for the patient; safe, painless, reliable, targeted and efficient. Topics include: Design and formulation of delivery systems for parenteral, oral, buccal, nasal, pulmonary, ocular and transdermal delivery; Drug targeting and controlled release of chemical molecules, peptides and proteins.

Module Delivery

Lectures (including delivery by external industrialists), coursework sessions (including laboratory based group mini-projects and workshops), tutorials, directed study, self-assessment (quizzes) and problem solving.

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Indicative Student Workload	Full Time	Part Time
Contact Hours	75	N/A
Non-Contact Hours	225	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	N/A
Actual Placement hours for professional, statutory or regulatory body		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Examination	Weighting:	50%	Outcomes Assessed:	1, 2
Description:	A closed book written examination				

Component 2

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	3, 4
Description:	Individual report based on group coursework				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

Component 1 (EX1) comprises 50% of the module grade. A minimum of a Grade D or better is required to pass this assessment. Component 2 (CW1) comprises 50% of the module grade. A minimum of a Grade D or better is required to pass this assessment. Overall Grade D or better is required to pass this module. Non-submission of either component will result in an NS grade for the module.

		Examination:						
		A	**B**	**C**	**D**	**E**	**F**	**NS**
Coursework:	**A**	A	A	B	B	E	E	
	B	A	B	B	C	E	E	
	C	B	B	C	C	E	E	
	D	B	C	C	D	E	F	
	E	E	E	E	E	E	F	
	F	E	E	E	F	F	F	
	NS	Non-submission of work by published deadline or non-attendance for examination						

Module Requirements

Prerequisites for Module	Successful completion of MPharm stage 2 or equivalent.
Corequisites for module	None.
Precluded Modules	None.

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INDICATIVE BIBLIOGRAPHY

1	WATSON, D., 2017. *Pharmaceutical analysis a textbook for pharmacy students and pharmaceutical chemists. Seventh edition. Edinburgh: Churchill Livingstone.*
2	WILLIAMS, D.H. and FLEMING, I., 2019. *Spectroscopic Methods in Organic Chemistry.* Seventh edition. London: McGraw-Hill.
3	REES, J., SMITH, I. and WATSON, J., 2014. *Pharmaceutical Practice.* Fifth edition. Edinburgh: Churchill Livingstone.