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MODULE DESCRIPTOR

Module Title

Advanced Pharmaceutical Analysis and Quality Control

Reference	ASM040	Version	2
Created	August 2021	SCQF Level	SCQF 11
Approved	May 2019	SCQF Points	15
Amended	August 2021	ECTS Points	7.5

Aims of Module

To enable students to evaluate, problem solve and develop skills in a range of advanced analytical techniques for the analysis of drugs and medicines. To enable students to understand and evaluate quality assurance and control systems for medicine manufacture.

Learning Outcomes for Module

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

1	Critically understand the principles and applications of advanced analytical techniques for the determination of a drug or medicine.
2	Critically evaluate the advantages and limitations of advanced analytical techniques for the determination of a drug or medicine.
3	Validate an appropriate quality assurance and control system for medicine manufacture.

Indicative Module Content

Pharmaceutical drug/medicine analysis, use of pharmaceutical monographs for the analysis of formulated preparations, extraction methods. Advanced analytical techniques include: liquid chromatography, gas chromatography, mass spectrometry, capillary electrophoresis, fluorescence spectroscopy, (derivative) ultra-violet spectroscopy, Raman spectroscopy, infrared spectroscopy. Quality assurance: Principles, procedures, test methods, records, reporting, data management, auditing and sampling; laboratory accreditation and accreditation regimes; standards GLP and GMP.

Module Delivery

The module will be delivered by lectures, tutorials and laboratory workshops.

Module Ref:	ASM040 v2

Indicative Student Workload	Full Time	Part Time
Contact Hours	30	N/A
Non-Contact Hours	120	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	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:	Coursework	Weighting:	70%	Outcomes Assessed:	1, 3
Description:	Technical report critically evaluating analytical and quality control methods for a given medicine.				

Component 2

Type:	Coursework	Weighting:	30%	Outcomes Assessed:	2
Description:	Critical Appraisal of a contemporary analytical technique				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The first grade represents Component 1 (CW1) weighted as major and the second, Component 2 (CW2), weighted as minor. A minimum module grade of D is required for a pass, with compensation of grade E in Component 1 or Component 2 permitted. Non-submission of either component will result in an NS grade.

Module Grade	Minimum Requirements to achieve Module Grade:
A	AA, AB
B	AC, AD, AE, BA, BB, BC, CA
C	BD, BE, CB, CC, CD, DA, DB
D	CE, DC, DD, DE, EA, EB, EC
E	AF, BF, CF, DF, ED, EE, EF, FA, FB, FC, FD
F	FE, FF
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None, in addition to course entry requirements.
Corequisites for module	None.
Precluded Modules	None.

Module Ref:	ASM040 v2

INDICATIVE BIBLIOGRAPHY

1	Aulton, M.E. (2017). 'Pharmaceutics - the design and manufacture of medicines', 5th edition, Churchill Livingstone, Elsevier.
2	Khar, R.K. (2017). 'Lachman's/Lieberman's: the theory and practice of industrial pharmacy', 4th edition, CBS Publishers.
3	Prichard, E. (2007). 'Quality assurance in analytical chemistry', Wiley.
4	Skoog, D.A., Holler, F.J., Crouch, S.R. (2018). 'Principles of instrumental analysis', 7th edition, Brookes Cole.
5	Watson, D.G. (2016) 'Pharmaceutical analysis - a textbook for pharmacy students and pharmaceutical chemists', 4th edition, Churchill Livingstone, Elsevier.