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## MODULE DESCRIPTOR

### Module Title

Advanced Pharmaceutical Analysis and Quality Control

Reference	ASM040	Version	1
Created	January 2019	SCQF Level	SCQF 11
Approved	May 2019	SCQF Points	15
Amended		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.

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

To pass this module the student must achieve a grade D or better. The grading criteria are:

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	All components must have a minimum of 50% and the overall total (by weighting) must be equal to or greater than 70%.
<b>B</b>	All components must have a minimum of 40% and the overall total (by weighting) must be between 60-69%.
<b>C</b>	All components must have a minimum of 35% and the overall total (by weighting) must be between 50-59%.
<b>D</b>	All components must have a minimum of 35% and the overall total (by weighting) must be between 40-49%.
<b>E</b>	All components must have a minimum of 35% and the overall total (by weighting) must be between 35-39%.
<b>F</b>	Any component is less than or equal to 34%
<b>NS</b>	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.

**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. |