

## MODULE DESCRIPTOR

### Module Title

Advanced Therapeutics and Personalised Medicine

Reference	PLM019	Version	1
Created	August 2022	SCQF Level	SCQF 11
Approved	January 2023	SCQF Points	15
Amended	September 2021	ECTS Points	7.5

### Aims of Module

To develop an understanding of the techniques pertinent to advanced drug delivery, gene technology, pharmacogenomics and proteomics and the ability to evaluate their application to the improved efficacy and safety of medicinal products.

### Learning Outcomes for Module

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

- 1 Integrate knowledge of gene structure and function to explore how genomic, proteomic and metabolomic derived biomarkers can be used to progress personalised medicine.
- 2 Critically appraise how currently established targeted molecular and biological markers of disease and drug targets may be used in clinical practice.
- 3 Critically appraise novel stratified medicine to explore its advantages and disadvantages in clinical practice.
- 4 Critically reflect on ethical issues that may arise from the use of personalised medicine.

### Indicative Module Content

Delivering advanced therapeutics solutions to achieve personalised medicines that are: right for the patient, safe, painless, reliable, targeted and efficient. Promoting development of a safe and sustainable culture of advanced therapies use. Topics include: production of recombinant DNA and genetically engineered medicines, principles and applications of gene therapy, role of pharmacogenomics in the delivery of personalised medicine, genomic, proteomic and metabolomic screening for disease diagnosis and identification of drug targets, mechanism of action and use of immunotherapies, potential future technologies. Ethical issues that may arise from the use of novel technologies for medicine design and delivery.

### Module Delivery

Online lectures (including delivery by external experts), online resources and discussions, directed study, self-assessment with answers and problem solving. There is no face-to-face contact required for this online module. 'Contact' hours included in 'Indicative Workload' represent online discussions and other online interactions.

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	N/A	5
Non-Contact Hours	N/A	145
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	N/A	150
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

**ASSESSMENT PLAN**

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

**Component 1**

Type:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4
Description:	Component 1 is a 2500 word Critical Essay, Marked, 100% weighting.				

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

Component 1 (critical essay) comprises 100% of the module grade. A minimum of module grade D is required to pass the module.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	A
<b>B</b>	B
<b>C</b>	C
<b>D</b>	D
<b>E</b>	E
<b>F</b>	F
<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 MacLENNAN, A., et al., 2012. *Instant Notes: Molecular Biology* . 4th edition. Oxford: BIOS Scientific Publishers Ltd.
- 2 CULLIS, P., 2015. *The Personalised Medicine Revolution: How Diagnosing and Treating Disease Are About to Change Forever*. Manchester: Saraband.
- 3 PADMANABHAN, S., 2014. *Handbook of Pharmacogenomics and Stratified Medicine*. London: Academic Press.
- 4 Module material will reference current academic literature and students will identify and access literature relevant to their own studies.