Liverpool John Moores University

Title:	SYNTHETIC AND NATURAL PRODUCTS
Status:	Definitive
Code:	**5002PHASCI** (122594)
Version Start Date:	01-08-2020
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

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Academic Level:	FHEQ5	**Credit Value:**	20	**Total Delivered Hours:**	60
Total Learning Hours:	200	**Private Study:**	140		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	32
Practical	15
Tutorial	5
Workshop	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	CW	Practical report	40	
Exam	Exam	Written examination	60	2

Aims

To present and illustrate the principles and processes involved in the discovery, acquisition and analysis of a range of natural, synthetic and biotechnological products.

Learning Outcomes

After completing the module the student should be able to:

1	Demonstrate an understanding of the discovery process for both synthetic and natural products
2	Demonstrate an understanding of the synthetic route to selected small molecular weight molecules and the technology used for obtaining and purifying natural and biotechnological products
3	Apply knowledge of, and interpret data from, spectroscopic techniques used to determine molecular structures
4	Perform key practical experiments, analyse the data and report the findings.

Learning Outcomes of Assessments

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

Practical report	4		
Exam	1	2	3

Outline Syllabus

Drug discovery, targets, screening and design, synthetic drugs , plant, animal and microbiologically derived products,
Examples of simple synthetic routes to small molecular weight drugs, peptide synthesis, synthetic analogues
Natural products of relevance to pharmaceutical and cosmetic science: Sources, extraction, purification
Bioengineering, biotechnology and production of biopharmaceuticals and biomaterials of relevance to cosmetics
Structural elucidation: Introduction to NMR and mass spectroscopy.
Practical experience of the synthesis, isolation, purification and spectroscopic identification of molecules

Learning Activities

Lectures, workshops, practical sessions and small group tutorials with personal tutor

Notes

Practical sessions supported by workshops will involve students gaining experience of synthesis and extraction of molecules and evaluating their structure and/or

activity.
Exam will assess students understanding of the principles of the production, properties and analysis of synthetic and naturally occurring molecules.