

**Module Information****2022.01, Approved****Summary Information**

Module Code	7124PHASCI
Formal Module Title	Analytical Techniques in Natural Products
Owning School	Pharmacy & Biomolecular Sciences
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

**Teaching Responsibility**

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

**Learning Methods**

Learning Method Type	Hours
Lecture	22
Practical	10
Workshop	8

**Module Offering(s)**

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

**Aims and Outcomes**

Aims	The course aims to extend students' comprehension and experience in the application of analytical methods for the isolation and identification of lead compounds from a complex mixture of natural products. This will involve the application of advanced chromatography, spectroscopy and spectrometry.
------	---

**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Independently acquire advanced chemical knowledge and apply specialised methods necessary for the extraction, purification and identification of natural products.
MLO2	2	Independently acquire advanced chemical knowledge and apply specialised methods necessary for the qualitative and quantitative instrumental analysis of natural products.
MLO3	3	Safely solve -alone or as part of a team- multidisciplinary challenges in the field of analysis of natural products even in the absence of complete information.
MLO4	4	Ethically source, systematically locate, critically evaluate, objectively assess, and make appropriate use of information from scientific literature and relevant electronic resources in the field of analysis of natural products.
MLO5	5	Demonstrate the necessary skills to plan, perform, report and interpret the results of laboratory experiments and analyses applied to natural products.

### Module Content

Outline Syllabus	Techniques used for the extraction of natural products, chromatographic techniques for the isolation and purification of compounds and spectroscopic techniques for the identification of compounds. Extraction: Liquid extraction, fractional distillationChromatography: Flash Chromatography, Column Chromatography, TLC, Analytical and preparative HPLC, GC, GC-MS, LC-MS.Spectroscopy/Spectrometry/Other: UV, IR, NMR (1D and 2D) spectroscopy, mass spectrometry and X-ray crystallography.
Module Overview	
Additional Information	This module builds on fundamental analytical chemistry learned by the candidate during undergraduate and/or postgraduate science, chemistry, healthcare and/or pharmaceutical science degree courses.

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Exam	60	2	MLO1, MLO2
Portfolio	Report	40	0	MLO3, MLO4, MLO5

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Alistair Fielding	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
--------------	--------------------------	-----------