

## Practical Laboratories 4

### Module Information

2022.01, Approved

#### Summary Information

Module Code	5006APCHEM
Formal Module Title	Practical Laboratories 4
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

#### Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

#### Learning Methods

Learning Method Type	Hours
Practical	77

#### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

#### Aims and Outcomes

Aims	Building on both Level 4 practical modules and Practical Labs 3, this course will concentrate on the chemistry underpinning materials - compounds, polymers and copolymers - from the angle of synthesis and reaction/functionalisation. Chromatographic and spectroscopic analytical techniques, including some tandem techniques will be used for assaying laboratory products.
------	---

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

### Learning Outcomes

Code	Number	Description
MLO1	1	Synthesise simple heterocyclic molecules and polymers.
MLO2	2	Use metals in organic synthesis.
MLO3	3	Utilise physical and analytical techniques to identify modern materials and their properties.

### Module Content

Outline Syllabus	Polymers and copolymers - synthesis, functionalisation and analysis; simple dye synthesis and chromatography; interaction of chromophores with metal ions; ion chromatography; atomic spectroscopy; rheology and viscosity; surfactants.
Module Overview	Building on both Level 4 practical modules and Practical Labs 3, you will concentrate on the chemistry underpinning materials " compounds, polymers and copolymers " from the angle of synthesis and reaction/functionalisation. You will use chromatographic and spectroscopic analytical techniques, including some tandem techniques, to analyse laboratory products.
Additional Information	The course provides exposure to more involved synthetic chemistry, in terms of polymer and copolymer synthesis, heterocyclic/heteroaromatic synthesis and introduces the concept of chemical structure and resultant material property with the requisite analytical assaying techniques.

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Test	Online Test	50	0	MLO1, MLO2, MLO3
Report	Practical Report	50	0	MLO1, MLO2, MLO3

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Barry Nicholls	Yes	N/A

#### Partner Module Team

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