

Liverpool John Moores University

Title: PRACTICAL LABORATORIES 4
Status: Definitive
Code: **5006APCHEM** (121134)
Version Start Date: 01-08-2021

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Barry Nicholls	Y
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Ian Bradshaw	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 77
Total Learning Hours: 200 **Private Study:** 123

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Practical	77

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	Test	Online Test	50	
Report	Report	Practical Report	50	

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.

Learning Outcomes

After completing the module the student should be able to:

- 1 Synthesise simple heterocyclic molecules and polymers.
- 2 Use metals in organic synthesis.
- 3 Utilise physical and analytical techniques to identify modern materials and their properties.

Learning Outcomes of Assessments

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

Online Test	1	2	3
Practical Report	1	2	3

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.

Learning Activities

Laboratory classes in organic and inorganic synthesis, physical and analytical assay and computational chemistry.

Notes

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.