Liverpool John Moores University

Title:	BIOPHYSICS AND INSTRUMENTATION
Status:	Definitive
Code:	**4503ICBTBE** (127039)
Version Start Date:	01-08-2021
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	ICBT, Colombo

Team	Leader
Alison Cotgrave	Y

Academic Level:	FHEQ4	**Credit Value:**	15	**Total Delivered Hours:**	71
Total Learning Hours:	150	**Private Study:**	79		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	45
Practical	9
Tutorial	15

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Formal written exam	70	2
Practice	Practical	Practical assessment	30	

Aims

To enable learners to develop knowledge and understanding of the principles underlying a wide range of modern instrumental and associated techniques; selection of technique appropriate to required analysis, preparation and calibration of instrument; quantitative analytical techniques; risk assessment and health and safety at work.

Learning Outcomes

After completing the module the student should be able to:

1	Practice and report upon a range of experimental techniques which can be applied in the qualitative and quantitative analysis of biological molecules.
2	Explain the basics of Radiotherapy.
3	Examine UV, Lasers and Fibre Optics, and their application in medicine.
4	Describe Ultrasonic Technology and Bio-effects.

Learning Outcomes of Assessments

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

Formal Written Exam	2	3	4
Practical	1		

Outline Syllabus

Chromatographic techniques for qualitative and quantitative analyses
Centrifugation
Spectrophotometry
DNA extraction and Gel electrophoresis
Blotting Techniques
Atomic physics
X-ray radiology
UV, Lasers and Fibre Optics, uses in Medicine
Nuclear Magnetic Resonance in Medicine
Ultrasonic in Medicine

Learning Activities

Students will be supported in their learning, to achieve the above learning outcomes, in the following ways:
• By a series of lectures and tutorials and through participation within practical sessions.
• Self-managed investigative study to analyse cases related to the industry

Notes

Learners will need access to appropriate laboratory, library and IT facilities and tutorials.