

Module Details	
Module Title	Laboratory Science
Module Code	ARC5004-B
Academic Year	2021/2
Credits	20
School	School of Archaeological and Forensic Sciences
FHEQ Level	FHEQ Level 5

Contact Hours	
Type	Hours
Online Lecture (Synchronous)	1
Laboratories	28
Practical Classes or Workshops	4
Directed Study	157
Tutorials	10

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1

Module Aims
The aims of this module are to promote the understanding of aspects of physics and chemistry which underpin scientific techniques and analysis in archaeology, forensics and other areas of science and to allow students to gain laboratory experience.

Outline Syllabus
Writing styles and how to write up a laboratory report. Spreadsheets and Graphs. Experimental errors, Laboratory safety. Introduction to chromatography. Quantification, the Beer-Lambert law. Organic reaction mechanisms. Stable light isotopes, isotope effects, fractionation, delta notation. Carbon isotopes, photosynthetic pathways: C3, C4. Radioactivity. Properties of materials (electrical and magnetic), X-ray properties, generation and characterisation. Microscopy

Learning Outcomes	
Outcome Number	Description
01	Discuss the aspects of physical and chemical sciences which underpin scientific techniques and analysis in archaeology, forensics and other areas of science; specifically those to be encountered in specialist subject areas.
02	Use laboratory skills.
03	Evaluate experimental scientific data.
04	Analyse numerical examples.
05	Write laboratory reports.

Learning, Teaching and Assessment Strategy
Lectures, laboratory classes and report writing/spreadsheet workshop. Assessment is through laboratory books and the writing up of laboratory sessions which addresses the broad range of learning outcomes. Feedback: ongoing discussion in practical classes and advice on laboratory reports. During Directed Study hours students are expected to undertake reading to consolidate and expand on the content of formal taught sessions; research and prepare for assessments; revise material from formal taught sessions; and undertake specific elements of reading as directed.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Laboratory Report	Write up of chemistry laboratory report (1500 words)	33%
Summative	Laboratory Report	Write up of physics laboratory report (1500 words)	33%
Summative	Coursework - Written	Laboratory notebook (1500 words)	34%
Referral	Laboratory Report	Supplementary Assessment: Detailed laboratory report using provided data (2000 words)	100%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

