UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title	Practical Chemistry For Forensic Scientists 2
Module Code	ARC5023-D
Academic Year	2020/1
Credits	40
School	School of Archaeological and Forensic Sciences
Subject Area	Forensic Science
FHEQ Level	FHEQ Level 5
Pre-requisites	N/A
Co-requisites	N/A

Contact Hours	
Type	Hours
Seminars	10
Practical Classes or Workshops	13
Laboratories	150
Directed Study	227

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims

This module builds on what you learned in stage 1. You will further develop your skills for the synthesis of compounds, and in the manipulation of the physical properties of coordination compounds. You will apply advanced spectroscopic techniques for the structure elucidation of reaction products. You will gain experience of the physical basis of separation science and its applications in laboratory chromatographic techniques. You will develop greater understanding of the use of practical chemistry in forensic contexts.
You will develop your professional and transferable skills.

Outline Syllabus

Analysing situations and assumptions, identifying problems and defining tasks, formulating objectives and approaches. Standardisation of operating procedures, laboratory documentation.
Develop reflective practice, skills audit, identifying developmental needs, CV writing, covering letters.
Introduction to synthesis of coordination compounds. Isomerism in metal ion coordination compounds, spectroscopic analysis; electrochemistry of metal complexes. Optical isomerism.
Design of a multi-step reaction sequences. Product conversion and overall yield. The importance of sequence in multistep reactions. Applications of reaction databases.
Application of practical chemistry to differing contexts and problems.

Learning Outcomes

Outcome Number	Description
01	Perform multistep preparative syntheses and characterise the products through advanced analytical techniques;
02	Describe how the underpinning principles of separation techniques are applied in laboratory chromatography.
03	Employ synthetic and analytical skills in the laboratory.
04	Critically evaluate, choose and carry out appropriate analytical methods.
05	Use a range of sources to analyse and evaluate chemical data to problem solve in the forensic context.
06	Prepare CV material and skills audit.

Learning, Teaching and Assessment Strategy

Laboratory-based work will include staff-led demonstration of practical and manipulative skills at the bench and supervision of students' experimental work. Pre-laboratory workshops will be provided for each experiment to familiarise students with the concepts and procedures, the post lab workshops will allow students to reflect on the results and their significance. Teaching of health and safety and laboratory skills will be delivered in workshops. Laboratory skills will be taught and practised in laboratory sessions. Students will receive feedback in the form of marked laboratory reports, review of laboratory records and orally in seminars. Workshops will be used to develop reflective practice, and for developing professional attributes in CV and cover letter writing. Problem based seminars will be used to develop understanding of the use of practical chemistry in forensic situations.
Students will be assessed on continuous summative assessment of practical work and reports. Additionally a CV, cover letter and a skills audit will be undertaken.

Mode of Assessment

Type	Method	Description	Length	Weighting
Summative	Coursework	CV, cover letter and a skills audit (2000 words)	N/A	10%
Summative	Coursework	Practical Reports (7000 words)	N/A	90%

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.

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