

Module Code:	SCI638
---------------------	--------

Module Title:	Research Project
----------------------	------------------

Level:	6	Credit Value:	40
---------------	---	----------------------	----

Cost Centre(s):	GAFS	JACS3 code:	F410
------------------------	------	--------------------	------

School:	Faculty of Arts, Science and Technology	Module Leader:	Dr Ian Ratcliffe
----------------	-----------------------------------------	-----------------------	------------------

Scheduled learning and teaching hours	40 hrs
Guided independent study	360 hrs
Placement	0 hrs
Module duration (total hours)	400 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Chemistry (Including Foundation Year)	✓	<input type="checkbox"/>
BSc (Hons) Forensic Science (including Foundation Year)	✓	<input type="checkbox"/>

Pre-requisites
None

Office use only

Initial approval: Nov 2018

Version no:1

With effect from: Sept 2019

Date and details of revision:

Version no:

Module Aims

The purpose of this module is for students to integrate and apply knowledge gained during their degree studies in a self-motivated, practical, enquiring and problem solving manner, thereby extending their own learning to a specific area in applied science.
 To develop student's practical research expertise and prepare them for postgraduate study/graduate level employment in an area of applied science.

Intended Learning Outcomes

Key skills for employability

- KS1 Written, oral and media communication skills
- KS2 Leadership, team working and networking skills
- KS3 Opportunity, creativity and problem solving skills
- KS4 Information technology skills and digital literacy
- KS5 Information management skills
- KS6 Research skills
- KS7 Intercultural and sustainability skills
- KS8 Career management skills
- KS9 Learning to learn (managing personal and professional development, self-management)
- KS10 Numeracy

At the end of this module, students will be able to

Key Skills

		Key Skills	
1	Plan research project or equivalent advanced scholarship.	KS3	KS6
2	Collect and critically appraise written scientific information.	KS1	KS4
		KS5	KS6
3	Critically evaluate experimental information and appropriately set up instrument or research methodology and strategy.	KS3	KS5
		KS6	
4	Formulate an in-depth understanding of the scientific topic, construct scientific argument and incorporate a critical ethical dimension wherever applicable.	KS1	KS6
5	Present and defend the research outcomes orally and in writing	KS1	

Transferable skills and other attributes

- Safe-working laboratory practices.
- Observation, recording and presenting complex scientific data.
- Numeracy, literacy, IT and information management.
- Time management.

- Problem solving skills.
- Literature search, data processing and academic writing skills.
- Team working.

Derogations

None

Assessment:

Indicative Assessment Tasks:

Assessment 1: Project dissertation. This includes a Project Plan and Literature Review which are submitted in advance of the final dissertation.

Assessment 2: Oral presentation (15 min).

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1-5	Dissertation	80		7000-9000
2	5	Presentation	20		15 minutes

Learning and Teaching Strategies:

Students will receive introductory lectures outlining the aim of the module and giving (generic) guidance on how to carry out the work. Students will also have individual tutorials with their project supervisor to guide their work and ensure appropriate progress is being made. Practical work will be performed by the student under the direction of appropriate staff members.

Syllabus outline:

Research, as appropriate, on an agreed topic.

Indicative Bibliography:

Essential reading

This will depend on the project. Essential reading is expected to be mainly research papers and, if applicable to the project, case studies and court papers.

Other indicative reading

Kirkup, L. (2012). *Data Analysis for Physical Scientists: Featuring Excel®*. 2nd ed.

Cambridge: Cambridge University Press

Marder, M.P. (2011). *Research Methods for Science*. Cambridge: Cambridge University Press.

McCormac, C., Davis, J., Papakonstantinou, P. and Ward, N.I. (2012). *Research Project Success: The Essential Guide for Science and Engineering Students*. Cambridge: Royal Society of Chemistry.

Leedy, P.D. and Ormrod, J. E. (2012). *Practical Research Planning and Design*. 10th ed. New Jersey: Prentice Hall.