

Module Code:	SCI525
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Module Title:	Research Methods: Theory and Practice
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Level:	5	Credit Value:	20
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Cost Centre(s):	GAFS	<u>JACS3</u> code:	F100
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School:	Applied Science, Computing & Engineering	Module Leader:	Amy Rattenbury
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Scheduled learning and teaching hours	40 hrs
Guided independent study	160 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Chemistry	✓	<input type="checkbox"/>
BSc (Hons) Forensic Science	✓	<input type="checkbox"/>
BSc (Hons) Geography, Ecology and Environment	✓	<input type="checkbox"/>

Pre-requisites
None

Office use only

Initial approval: Mar 18 – validation of BSc Chemistry

Version no: 1

With effect from: Sept 18

Date and details of revision: August 2018 – addition of module to Geography, Ecology and Environment

Version no:2

Module Aims

To enable students to develop critical thinking and problem-solving skills in a research context. Prepare for undertaking a research project.

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

1	Examine relationships between theory and practice in undertaking research.	KS1	KS3
		KS4	KS5
		KS6	KS9
2	Discuss the relative merits and applicability of various approaches to research design; data collection and analysis, and the concepts which underpin such approaches.	KS1	KS3
		KS4	KS5
		KS6	KS10
3	Discuss the ethical issues and Glyndŵr University procedures associated with conducting research.	KS1	KS6
4	Reflect upon own experience of carrying out a small scale research project.	KS1	KS9

Transferable skills and other attributes

- Create a risk assessment.
- Outline an action plan for their intended research
- Use relevant IT skills.
- Critical evaluation of material.
- Collect data and present a report using standardised procedures

Derogations

N/A

Assessment:

Indicative Assessment Tasks:

Portfolio on small scale research project (20 hours), to include a project plan, a literature review; a project poster and a reflective piece.

Students will: (1) offer a rationale as to why specific research tools have been used; (2) provide a critical evaluation of the advantages and limitations of these research tools; (3) reflect upon their own experience of carrying out a small scale research project.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1,2,3,4	Portfolio	100	N/A	4000

Learning and Teaching Strategies:

Lectures and tutorials will be supported by online provision.

Laboratory based mini projects will be 20 hours long. Directed study tasks will enable students to explore methods most applicable to their area of research.

Syllabus outline:

- Approaches to research (e.g. quantitative and qualitative methods)
- Objectivity/subjectivity and research bias, validity and reliability
- Conducting literature research
- Undertaking small-scale research projects
- Analysing and presenting research data
- Ethical issues and Glyndŵr University procedures associated with conducting research

Indicative Bibliography:**Essential reading**

Dean, J.R., et al. (2011), Practical Skills in Chemistry. 2nd ed. Harlow: Pearson

Langford, A., et al (2010), Practical Skills in Forensic Science. 2nd ed. Harlow: Prentice Hall

Other indicative reading

Bell, J. and Waters, S. (2014), Doing Your Research Project: A Guide for First-time Researchers. 6th ed. Berkshire: Open University Press.

Clifford N et al (2016), Key Methods in Geography. 3rd edn SAGE.

Parsons T (2015). How to do your dissertation in Geography and related disciplines. 3rd edn Routledge.