

MODULE SPECIFICATION PROFORMA

Module Title:	Research Methods: Theory and Practice	Level:	5	Credit Value:	20
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Module code:	SCI522	New <input checked="" type="checkbox"/>	Code of module being replaced:	SCI518
		Existing <input type="checkbox"/>		

Cost Centre:	GAFS	JACS3 code:	F100
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Trimester(s) in which to be offered:	1	With effect from:	September 16
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School:	Applied Science, Computing & Engineering	Module Leader:	Clive Buckley
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	BSc (Hons) Chemistry with Green Nanotechnology BSc (Hons) Forensic Science	BSc (Hons) Chemistry with Education
Scheduled learning and teaching hours	50 hrs	50 hrs
Guided independent study	150 hrs	75 hrs
Placement	0 hrs	75 hrs
Module duration (total hours)	200 hrs	200 hrs

Programme(s) in which to be offered	Core	Option
BSc (Hons) Chemistry with Education	<input checked="" type="checkbox"/>	<input type="checkbox"/>
BSc (Hons) Chemistry with Green Nanotechnology	<input checked="" type="checkbox"/>	<input type="checkbox"/>
BSc (Hons) Forensic Science	<input checked="" type="checkbox"/>	

Office use only

Initial approval July 2016

APSC approval of modification July 2016

Have any derogations received SQC approval?

Version 1

Yes No

Module Aims

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

Intended Learning Outcomes

At the end of this module, students should be able to:

1. Examine relationships between theory and practice in undertaking research.
2. Discuss the relative merits and applicability of various approaches to research design, data collection and analysis, and the concepts which underpin such approaches.
3. Design and evaluate a range of primary research tools.
4. Discuss the ethical issues and Glyndŵr University procedures associated with conducting research.
5. Reflect upon own ideas regarding the value of research in the workplace.

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	Design and evaluate a range of primary research tools.	KS1	KS2
		KS4	KS5
		KS6	KS7
4	Discuss the ethical issues and Glyndŵr University procedures associated with conducting research.	KS1	KS6

5	Reflect upon own ideas regarding the value of research in the workplace.	KS1	KS9
Transferable/key skills and other attributes			
<ul style="list-style-type: none"> • Critical thinking, reasoning and argument skills • Problem-solving skills in a research context • Analysis, critical reflection and evaluation • Communication • Working with others 			

Derogations
None

Assessment: Please give details of indicative assessment tasks below.					
Portfolio - to include a range of individually designed and evaluated primary research tools. 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.					
Please indicate the type(s) of assessment (eg examination, oral, coursework, project) and the weighting of each (%). Normally, each intended learning outcome should be assessed only once.					
Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1 - 5	Portfolio	100%		4,000

Learning and Teaching Strategies:
Lectures and tutorials will be supported by online provision. Directed study tasks will enable students to explore methods most applicable to their area of research. For BSc (Hons) Chemistry with Education students only: During placement students will be required to complete a research task linked to this module, which will inform their assignment

Syllabus outline:
<ul style="list-style-type: none"> • 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

- Design and evaluation of primary research tools, including questionnaire, interview and observation
- Analysing and presenting research data
- Ethical issues and Glyndŵr University procedures associated with conducting research

Bibliography:

Essential reading

Cohen, L., Manion, L. and Morrison, K. (2011) *Research Methods in Education* 7th Edition, Routledge.

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

Bell, J., Waters S. (2014), *Doing Your Research Project: A Guide for First-time Researchers* Milton Keynes: Open University Press.

Other indicative reading

Burgess, T. F. (2001) *A general introduction to the design of questionnaires for survey research*. University of Leeds Online <http://iss.leeds.ac.uk/downloads/top2.pdf> Accessed 08 February 2016

Gibbs, G. R. *Research Methods in Social Science* YouTube Channel Online <https://www.youtube.com/user/GrahamRGibbs> Accessed 08 February 2016

Open University (2014) "Engaging with Educational Research" (e-book) [Creative Commons] Online <http://www.open.edu/openlearn/education/educational-technology-and-practice/educational-practice/engaging-educational-research/content-section-0> Accessed 08 February 2016