

<b>Module Code:</b>	CONL717
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<b>Module Title:</b>	Applied Research Methods
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<b>Level:</b>	7	<b>Credit Value:</b>	15
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<b>Cost Centre(s):</b>	GACP	<b>JACS3 code:</b>	I000
		<b>HECoS code:</b>	100366

<b>Faculty:</b>	FAST	<b>Module Leader:</b>	Julie Mayers
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Scheduled learning and teaching hours	15 hrs
Guided independent study	135 hrs
Placement	0 hrs
<b>Module duration (total hours)</b>	150 hrs

<b>Programme(s) in which to be offered (not including exit awards)</b>	Core	Option
MSc Computer Science (online)	✓	<input type="checkbox"/>
MSc Computer Science with Big Data Analytics	✓	<input type="checkbox"/>
MSc Computer Science with Cyber Security	✓	<input type="checkbox"/>
MSc Computer Science with Networking	✓	<input type="checkbox"/>
MSc Computer Science with Software Engineering	✓	<input type="checkbox"/>

<b>Pre-requisites</b>
n/a

**Office use only**

Initial approval: 04/09/2019

Version no:1

With effect from: 01/01/2020

Date and details of revision:

Version no:2

01/09/2023 Removal of pre-requisites: successful completion of Critical Research for PG Study and at least 7 carousel modules

### Module Aims

By the time you arrive at this module, you will have become proficient at critiquing others' research, including assessing quality of analysis and results and dealing with conflicting views. Now is the time to put all this into your own practice as you prepare for your dissertation in a specialism directly related to your degree programme.

In this module you will develop the skills necessary to undertake a research project. These will include how to conceive, structure and execute a research study, questionnaires and surveys, implementation, testing and statistical analysis and good practice for presenting your own research coherently in the form of an academic publication.

You will undertake a small, constrained research case-study, then produce a full proposal for your own dissertation.

### 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	Design a research framework which includes a research question, supporting objectives, a relevant research methodology and identify a philosophical stance.	KS1	KS3
		KS4	KS5
		KS6	KS9
2	Identify an analytical method, sampling technique and any ethical issues related to the research question framed in learning outcome 1.	KS1	KS3
		KS4	KS5
		KS6	KS9

### Transferable skills and other attributes

Display, collection and presentation of data, communication skills, analysis, interpretation, selection decision making and drawing conclusions.

**Derogations**

None

**Learning and Teaching Strategies:**

The overall learning and teaching strategy is one of guided independent study requiring ongoing student engagement. Online material will provide the foundation of the learning resources, requiring the students to login and engage on a regular basis throughout the eight-week period of the module. There will be a mix of suggested readings, discussions and interactive content containing embedded digital media and self-checks for students to complete as they work through the material and undertake the assessment tasks. The use of a range digital tools via the virtual learning environment together with additional sources of reading will also be utilised to accommodate learning styles. There is access to a helpline for additional support and chat facilities through Canvas for messaging and responding.

Students will be supported in the development of their research proposal by an assigned supervisor, with whom they are expected to maintain 1-to-1 contact to develop their ideas. Individual support may be delivered by email, phone calls, Skype or other digital technologies as agreed by the student and supervisor.

**Assessment:**

Indicative Assessment Tasks:

The assessment covers the analysis and interpretation of the empirical data which has been collected independently, a discussion to illustrate the extent to which the objectives have been met, followed by conclusions, recommendations and areas for further research.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration or Word count (or equivalent if appropriate)
1	1,2	Research Proposal	100	3,000

**Syllabus outline:**

1. Definition, purposes and dimensions of research
2. Planning a research project with research questions and hypotheses
3. Quantitative methodologies and design

4. Sampling and data collection
5. Data analysis and interpretation
6. Writing research reports
7. Research proposal

**Indicative Bibliography:**

**Essential reading**

Gliner, J. A., Morgan, G. A., & Leech, N. L. (2011). *Research methods in applied settings: An integrated approach to design and analysis*. 3rd ed. Routledge.

**Other indicative reading**

*Students' essential texts will be self-prescribed and in the area of their chosen topic of research. More general reading regarding research methods and the dissertation process is detailed below.*

Bolton, G. (2018) *Reflective Practice: Writing and Professional Development*. 5th ed. Los Angeles: Sage.

Cottrell, S. (2017) *Critical Thinking Skills: Developing Effective Analysis and Argument*. 3<sup>rd</sup> ed. Basingstoke: Palgrave Macmillan.

Craswell, G. and Poore, M. (2011) *Writing for Academic Success*. 2nd ed. London: SAGE.

Hart, C. (2004) *Doing Your Masters Dissertation*. London: SAGE.

Madsen, D.L. (2005) *Researching Information Systems and Computing*. SAGE Publications Ltd.

Moon, J.A., (2006) *Learning Journals: A Handbook for Academics, Students and Professional Development*. 2nd ed. London: Routledge.

Oates, B.J. (2005) *Researching Information Systems and Computing*. London: SAGE.

Wisker, G. (2008) *The Postgraduate Research Handbook*. 2nd ed. Basingstoke: Palgrave Macmillan.

Journals:

Computer Networks and Computer Communications (journals available electronically via Science Direct through the Library)

IEEE Xplore Digital Library (available through the University Library)

Professional Body Websites:

The British Computer Society (BCS) <http://www.bcs.org/>

The Institution of Engineering and Technology (IET) <http://www.theiet.org/>

The Institute of Electrical and Electronics Engineers (IEEE) <http://www.ieee.org/>

The Association of Computing Machinery (ACM) <http://www.acm.org/>