Module Code:	CONL701

Module Title:	Critical Research for Postgraduate Study

Level:	7	Credit Value:	15

Cost Centre(s):	GACP	JACS3 **code**: HECoS code:	I990 100366

Faculty:	FAST	Module Leader:	Julie Mayers

Scheduled learning and teaching hours	15 hrs
Guided independent study	135 hrs
Placement	0 hrs
Module duration (total hours)	150 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
MSc Computer Science (online)	✓	☐
MSc Computer Science with Big Data Analytics	✓	☐
MSc Computer Science with Cyber Security	✓	☐
MSc Computer Science with Networking	✓	☐
MSc Computer Science with Software Engineering	✓	☐

Pre-requisites
None

Module Aims

In this module you'll develop the critical reading, thinking and writing techniques you'll need throughout the taught programme of study. Starting with effective literature searching, analysis and review, through 'fact-checking' and 'conflict-resolution', to producing your own written reports, you'll perfect the knowledge and skills necessary to start your journey as an efficient researcher.

You also practice the essential underpinning skills to ensuring that competent work and standards are achieved and maintained throughout your programme of study and towards your dissertation. These skills, aside from external information-handling, will help you recognise, develop and manage your own research skills and assure that honest self-evaluation becomes a natural part of the process.

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	Manage different information sources and conflicting opinions	KS5	KS6
		KS8	
2	Present logical arguments	KS1	KS6
		KS8	
3	Use effective literature search skills	KS4	KS5
		KS6	
4	Critically analyse relevant material and examine research methodologies	KS5	KS6
		KS8	
5	Write professional research papers	KS1	KS6
		KS8	
6	Critically self-assess personal performance	KS7	KS8
		KS9	

Transferable skills and other attributes

Research methodologies, fact-checking, conflict-resolution and self-reflection

Derogations
None

Assessment:
Indicative Assessment Tasks:
There will be two assessments for this module. The first will consider a current world issue, prominent on the Internet, on which there are different views and significant quantities of both valid and invalid data. Students will 'fact-check' and compare evidence and write an informal reflection. The second will be based on a comparison of a number of academic papers, with different methodologies and approaches, focused on a current emergent technology or topic in computer science. A formal research report will be written exploring the contrasting positions and presenting a balanced view.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration or Word count (or equivalent if appropriate)
1	1,2	Case Study	35%	1,000
2	3,4,5,6	Essay	65%	2,000

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 video content containing embedded digital content 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.

Syllabus outline:
Information sources and searching Types of research Qualitative and quantitative research Critical Analytical Thinking Research data: primary and secondary, etc. Data gathering: experimentation, observation, interviews, questionnaires, etc. Statistical techniques Axiomatics and logical progression Data principles and data fallacies Logical and illogical arguments Points of view vs. beliefs vs. experience Presenting data Structuring a professional/research paper Presenting arguments, experience and results Recognising limitations Self-reflection on progress: the joys of imperfection
Indicative Bibliography:
Essential reading
Wallace, M., & Wray, A. (2016). *Critical reading and writing for postgraduates.* Sage.
Other indicative reading
Grout, V. (2013-2019) *Turing's Radiator: Pleasantly Warm Topics in Computational Philosophy.* https://vicgrout.net/ 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