H9RCO: Research in Computing

Module Code:	H9RCO
Long Title	Research in Computing DRAFT
Title	Research in Computing
Module Level:	LEVEL 9
EQF Level:	7
EHEA Level:	Second Cycle
Credits:	5
Module Coordinator:	Ralf Bierig
Module Author:	Ralf Bierig
Departments:	School of Computing
Specifications of the qualifications and experience required of staff	

Learning Outcomes	
On successful completion of this module the learner will be able to:	
#	Learning Outcome Description
LO1	Propose a research question and identify its implications with regard to the choice of subject.
LO2	Propose research objectives and identify possible deliverables
LO3	Create a literature review which situates the work with regard to previous work, a research and development design and methodology
LO4	Critically assess and select methods for addressing the research question, including originality considerations.
LO5	Demonstrate the ability to write a comprehensive research plan that explores research methods and deliverables for a specific subject in computing.

Dependencies
Module Recommendations
No recommendations listed
Co-requisite Modules
No Co-requisite modules listed
Entry requirements

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Module Content & Assessment

Indicative Content

Research Questions and Literature Review (20%)
• Structure and purpose of a literature review • Search tools and sources • Selecting and coping with literature • Formulating Research Questions

Research in Computing (10%)
• The research community and their major platforms (journals, conferences) • Making use of research articles to make informed choices in development • Planning software development and evaluation • User involvement • Descriptive, theory oriented and applied projects

Scientific Writing and Research Documentation (40%)
• Proposal structure • Selection and assessing the quality of literature • Project structure • Citations and referencing • Presenting non-numerical data • Presenting numerical data • Scientific writing and style considerations • Data Privacy (e.g. GDPR) and Ethical Guidelines • Plagiarism and self-plagiarism

Technical information (20%)
• Reading, understanding and summarizing technical material, including source code, academic articles, patents, and documentation. • Writing effective technical documentation and materials.

Communication (10%)
• Dynamics of oral, written, and electronic team and group communication.

Assessment Breakdown	%
Coursework	100.00%

Assessments

Full Time

Coursework

Assessment Type:	Project	**% of total:**	80
Assessment Date:	n/a	**Outcome addressed:**	2,3,4,5
Non-Marked:	No		

Assessment Description:
Literature Review and Project Plan Students will develop an extended and in-depth literature review and project plan (2500 words) on a specialisation area of the overall MSc programme over the course of the semester. The review will comprise: an overview of the state of the art in the chosen topic, the identification of the research niche. Additionally students ought to include their research plan including the description of the expected research deliverables (e.g. software packages, technical manuals, etc.) and milestones (specific code, chapters, etc.) for their project.

Assessment Type:	Continuous Assessment (0200)	**% of total:**	20
Assessment Date:	n/a	**Outcome addressed:**	1
Non-Marked:	No		

Assessment Description:
The first assignment entails the definition of the research question. It includes a suitable title and selects an area within the module domain from a large list of suggested areas. The phrased research question addresses the specific topic. The submission critically justifies why this question is worth investigating and how it will contribute to knowledge in the field of the module. It furthermore describes why the question is feasible, clear, significant, and ethical and includes 3-5 citations to key sources based on the research question.

No End of Module Assessment

No Workplace Assessment

Reassessment Requirement

Coursework Only
This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.

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Module Workload

Module Target Workload Hours 0 Hours

Workload: Full Time

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	No Description	1	Every Week	1.00
Independent Learning Time	No Description	8.5	Every Week	8.50
Tutorial	No Description	1	Every Week	1.00
			Total Weekly Contact Hours	2.00

Workload: Part Time

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	No Description	1	Every Week	1.00
Independent Learning Time	No Description	8.5	Every Week	8.50
Tutorial	No Description	1	Every Week	1.00
			Total Weekly Contact Hours	2.00

Module Resources

Recommended Book Resources

Mikael Berndtsson. (2008), Thesis projects: a guide for students in computer science and information systems., First. Springer, London, p.162.

Justin Zobel. (2015), Writing for Computer Science, Third Edition. Springer-Verlag, [ISBN: 1447166388].

Supplementary Book Resources

Berndtsson, M., Hansson, J., Olsson B., and Lundell, B.. Planning and Implementing your Final Year Project - with Success!: A Guide for Students in Computer Science and Information Systems., Springer, London.

Ned Kock. (2007), Information systems action research, Springer, [New York, N.Y.], [ISBN: 038736059X].

McNiff, J., and Whitehead, J.. (2009), You and Your Action Research Project. New York: Taylor and Francis..

Creswell, J. W.. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 3rd Edition., SAGE Publications., London.

Lester J.D.. (2011), Writing Research Papers: A Complete Guide, 14th Edition. Longman.

Mittelbach, F. et al.. (2004), The Latex Companion., 2nd edition. Addison Wesley.

This module does not have any article/paper resources

Other Resources

[Lecture Notes], Hofer, A. H and Tichy W.F.. Hofer, A. H and Tichy W.F. 2007, Status of empirical research in software engineering, Empirical Software Engineering Issues. Critical Assessment and Future Directions, Lecture Notes in Computer Science, vol. 4336, 10–19 [ISSN: 0302-9743], http://link.springer.com/chapter/10.1007 /978-3-540-71301-2_3#

[Website], http://psyweb.psy.ox.ac.uk/dapweb/teachi ng/graduate/grad_datafiles.htm, http://psyweb.psy.ox.ac.uk/dapweb/teachi ng/graduate/grad_datafiles.htm

[Website], udacity, http://www.udacity.com/overview/Course/s t101/CourseRev/1

Discussion Note: