

MODULE TITLE	Research Methodology	CREDIT VALUE	15
MODULE CODE	ECMM410	MODULE CONVENER	Prof Christopher Edwards (Coordinator), Prof Pierre Friedlingstein (Coordinator), Prof Mark P. Baldwin (Coordinator)
DURATION: TERM	1	2	3
DURATION: WEEKS	11	0	0
Number of Students Taking Module (anticipated)	41		

DESCRIPTION - summary of the module content

On this module, you will get an introduction to the methods used in scientific research, including finding research articles, critical review, peer review, presentation skills and literature synthesis. In the lectures, there is a strong emphasis on student engagement, and you should be prepared to stand up in front of the class and discuss things you have read.

As well as delivering summaries of papers, you and your fellow students will prepare and run two conferences in which each student will talk about a scientific topic of their choice for 10 minutes. There is also a creative element, and you will be required to design a poster using papers from the literature.

PGR students have to register for this module via the [online Taught Module Request form](#)

AIMS - intentions of the module

The aim of the module is to introduce you to some of the soft skills you need to carry out research, such as communication, literature review and critical thinking. Because of the mix of different subjects, it is not possible to cover hard skills such as statistical analysis, because individual students will have a different baseline and have varying requirements for their work.

INTENDED LEARNING OUTCOMES (ILOs) (see assessment section below for how ILOs will be assessed)

On successful completion of this module, **you should be able to:**

Module Specific Skills and Knowledge:

- 1 critically appraise published research results;
- 2 demonstrate improved soft skills required for research.

Discipline Specific Skills and Knowledge:

- 3 assess research in mathematics, computer science and engineering.

Personal and Key Transferable / Employment Skills and Knowledge:

- 4 read, appraise and present research results critically.

SYLLABUS PLAN - summary of the structure and academic content of the module

- introduction: what is research, why research, what is original, research ethics and integrity, copyright and plagiarism;
- research process: description and analysis of all major steps from formulating a problem to presenting results;
- literature survey: sources of information, efficient and effective literature search (library/internet/other), critical reading and assessment, writing a literature review, referencing (styles, software);
- research problem formulation: research strategy (questions, objectives, hypothesis) and research design (definitions and functions);
- data analysis: general (planning the analysis, use of statistical theory, mathematical models), quantitative methods (non)parametric statistical tests, regression) and qualitative methods (analysis of interviews, questionnaires and focus group results);
- presentation of research results: writing papers and dissertations; doing oral presentations;
- planning and managing research projects: managing time, mapping your project, dealing with people and institutions, sharing responsibility, etc;
- what is research proposal, typical proposal content, guidelines for writing up different sections of a typical proposal, proposal assessment criteria/process, funding bodies and types of proposals;
- advanced methods.

LEARNING AND TEACHING

LEARNING ACTIVITIES AND TEACHING METHODS (given in hours of study time)

Scheduled Learning & Teaching Activities	22.00	Guided Independent Study	128.00	Placement / Study Abroad	
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DETAILS OF LEARNING ACTIVITIES AND TEACHING METHODS

Category	Hours of study time	Description
Scheduled learning and teaching activities	22	Lectures
Guided independent study	128	Reading of research articles and preparation of presentations, posters etc.

ASSESSMENT

FORMATIVE ASSESSMENT - for feedback and development purposes; does not count towards module grade

Form of Assessment	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Not applicable			

SUMMATIVE ASSESSMENT (% of credit)

Coursework	100	Written Exams	0	Practical Exams	0
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DETAILS OF SUMMATIVE ASSESSMENT

Form of Assessment	% of Credit	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Coursework – peer review of paper	30	2 pages A4	1,4	Written
Coursework - review of literature	60	6 pages A4	2,3	Written
Presentation	10	5 to 6 minutes	2,4	Oral

DETAILS OF RE-ASSESSMENT (where required by referral or deferral)

Original Form of Assessment	Form of Re-assessment	ILOs Re-assessed	Time Scale for Re-reassessment
Coursework – peer review of paper	Coursework – peer review of paper	1,4	August Ref/Def period
Coursework - review of literature	Coursework - review of literature	2,3	August Ref/Def period
Presentation	Presentation	2,4	August Ref/Def period

RE-ASSESSMENT NOTES

Reassessment will be by coursework in the failed or deferred element only. For referred candidates, the module mark will be capped at 50%. For deferred candidates, the module mark will be uncapped.

RESOURCES

INDICATIVE LEARNING RESOURCES - The following list is offered as an indication of the type & level of information that you are expected to consult. Further guidance will be provided by the Module Convener

ELE <http://vle.exeter.ac.uk>

Reading list for this module:

Type	Author	Title	Edition	Publisher	Year	ISBN	Search
Set	Bryman, A. and Bell, E.	Business Research Methods		Oxford University Press	2011	978-0199284986	[Library]
Set	Alley, M.	The Craft of Scientific Writing	3rd	Springer	2009		[Library]
Extended	Creswell, J.W.	Research Design: Qualitative, Quantative and Mixed Methods Approaches		Sage Publications	2009	978-0761924425	[Library]
Extended	Bell, J.	Doing your Research Project: A Guide for First-time Researcher in Education, Health and Social Science		Open University Press	2010	978-0335215041	[Library]
Extended	Swetnam, D.	Writing your Dissertation		How To Books Ltd.	2000	978-1857036626	[Library]
Extended	Dawson, C.	A Practical Guide to Research Methods: A User-friendly Manual for Mastering Research Techniques and Projects	Electronic	How to Books Ltd.	2007	978-1845282301	[Library]

CREDIT VALUE 15 **ECTS VALUE** 7.5

PRE-REQUISITE MODULES None

CO-REQUISITE MODULES None

NQF LEVEL (FHEQ) 7 **AVAILABLE AS DISTANCE LEARNING** No

ORIGIN DATE Tuesday 10 July 2018 **LAST REVISION DATE** Wednesday 18 January 2023

KEY WORDS SEARCH Research skills; scientific research; critical assessment; literature review.