



Institiúid Teicneolaíochta Chorcaí
Cork Institute of Technology

Transferable Research Skills

Module Details

Short Title:	Transferable Research Skills	DRAFT
Full Title:	Transferable Research Skills	
Module Id:	4640	
Official Code:		
NFQ Level:	9	
ECTS Credits:	5	

Coordinator:	JOHN BARRETT
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Description:	Transferable research skills are those which a student can use in any aspect of research in academia or industry. They are core skills in planning, performing, analysing and communicating research. This module follows national and international best practice for postgraduate training which addresses not just a relatively narrow technical field but provides portable skills that the student can carry throughout his/her career regardless of technical area.
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Learning Outcomes:

On successful completion of this module the learner will be able to...

1. Plan experiments, analyse experimental data and present experimental results
2. Plan and manage his/her personal research project, including information search, literature review, experimentation, written and oral communication, avoiding plagiarism, research ethics and understanding intellectual property and technology transfer issues
3. Explain the nature of research and approaches to preparation of research proposals for funding sources for research in Ireland and Europe
4. Apply structured approaches to problem solving, creativity and innovation

Pre-requisite learning

Module Recommendations

This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).

No recommendations listed

Incompatible Modules

These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.

No incompatible modules listed

Module Requirements

This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.

No requirements listed



Module Content & Assessment

Indicative Content

- **Design of Experiments**

Introduction to structured DOE, latin squares, factorial and fractional factorial experiments, ANOVA, data analysis and presentation from DOE results, engineering and science case studies

- **Research Methods**

The nature of research; information search and literature review; project planning and management; written and oral communication of research in conferences, journals, reports and theses; plagiarism; research ethics; research proposals; intellectual property and technology transfer in research

- **Problem Solving**

Structured approaches to problem solving e.g. heuristics etc.

- **Creativity and Innovation**

The nature of engineering creativity and innovation and structured approaches to innovation

Assessment Breakdown

	%
Course Work	100%
End of Semester Formal Examination	0%

Coursework Breakdown

<i>Type</i>	<i>Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Practical/Skills Evaluation	Design of experiments and data analysis	1	20	Week 6
Practical/Skills Evaluation	Literature review on selected topic + presentation of results in poster, journal paper and conference presentation formats	2,3	40	Sem End
Practical/Skills Evaluation	Detailed research proposal + workplan + budget for research project	1,2,3,4	40	Sem End

The institute reserves the right to alter the nature and timings of assessment



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Transferable Research Skills

Module Workload & Resources

Workload		Full-time mode			
Type	Description	Hours	Frequency	Average Weekly Learner Workload	
Lecture	No Description	3	Every Week	3.00	
Independent & Directed Learning (Non-contact)	Research for preparation of literature review and research proposal	4	Every Week	4.00	
Total Weekly Learner Workload					7.00
Total Weekly Contact Hours					3.00

Workload		Part-time mode			
Type	Description	Hours	Frequency	Average Weekly Learner Workload	
Lecture	No Description	3	Every Week	3.00	
Independent & Directed Learning (Non-contact)	No Description	4	Every Week	4.00	
Total Weekly Learner Workload					7.00

Resources

Recommended Book Resources

- Jiju Antony 2003, *DESIGN OF EXPERIMENTS FOR ENGINEERS AND SCIENTISTS*, Elsevier [ISBN: 978-0-7506-4709-0]