Module 1: Research Methods

Stage				1			
Semester				1			
Module Title				Research Methods			
Module Number				1			
Module Status				Mandatory			
Module ECTS Credits				5			
Module NFQ level				9			
Pre-Requisite Module Titles				None			
Co-Requisite Module Titles				None			
Capstone Module				No			
List of Module Teaching Personnel				Mr Ruairi Murphy Dr. Waseem Akhtar			
Contact Hours				**Non-contact Hours**			**Total Effort (hours)**
36				**64**			**100**
Lecture	**Practical**	**Tutorial**	**Seminar**	**Assignment**	**Placement**	**Independent Work**	
24		12		12		24	
Allocation of Marks (Within the Module)							
	Continuous Assessment	**Project**	**Practical**	**Final Examination**			**Total**
Percentage Contribution	**100**						**100**

Intended Module Learning Outcomes

Upon successful completion of this module, the learner will be able to:

1. Carry out in-depth research using a variety of research methods
2. Select appropriate research topics and methodologies
3. Critically analyse and evaluate their own work and that of others
4. Conduct innovative research in new and emerging areas of computing science
5. Prepare and present an academic research paper
6. Design a practical project plan using project management tools and techniques to a professional standard.

Module Objectives

This module serves to significantly deepen the learner's research skills, both in relation to the module related assignments and later in the completion of a dissertation / dissertation by practice. Specifically, it extends the ability of self-directed learners by equipping them with the appropriate vocabulary for reflecting on, critiquing and evaluating their own work and that of others. Throughout the module, learners are required to engage in a number of research methodologies and current research issues and trends in computing science. The module also addresses the need for good project management skills and techniques for the successful delivery of any project.

Module Curriculum

- **Research Methods**

  Fundamentals of research: primary, Secondary and Documentary / Quantitative and Qualitative modes of research / Ethnography / Observation / Focus group research / Questionnaires: design and implementation

- **Gathering and analysing research**

  Overt vs covert research / choosing an appropriate research methodology / Use of primary data to inform concept design

- **Critical analysis**

  Formulating a research problem / reviewing literature / Peer review and its role in professional development / Vocabulary for critique and analysis / Thinking theoretically / writing a research proposal

- **Theoretical concepts as the basis of emerging technologies**

  Understanding core theoretical concepts in computing science / Relating core theoretical concepts to emerging technologies / Current trends in software industry.

- **Project Management**

  Problem and opportunity definition / Strategy formulation / Project scoping / Stakeholder analysis / Time estimation / Budgeting / Scheduling / Resource allocation / Time/cost trade offs / Risk assessment / Establishment of a balanced comprehensive project monitoring system / Project documentation

Reading Lists and other learning materials

Recommended Reading

Berry, 2005, *The Research Project: How to Write it, 5th Edition*, Routledge

Secondary Reading

Creswell, 2005, *Research Design: Qualitative, Quantitative and Mixed Methods Approaches (2nd edition)*, Sage Publications Ltd.

Fink, 2005, *Conducting Research Literature Reviews: From the Internet to Paper*, Sage Publications Ltd.

Kerzner, 2006, *Project Management: A Systems Approach to Planning Scheduling and Controlling (9th edition)*, John Wiley & Sons

Kumar, 2005, *Research Methodology: A Step by Step Guide for Beginners (2nd Edition),* Sage Publications Ltd.

Additional reading as recommended by lecturer, appropriate to topic and to each learner's area of research.

Online Resources

Learners are expected to make extensive use of the college's on-line research resources to assist their research and project work in this and all subsequent modules. They are also required to actively engage with the programme by using Moodle (a Virtual Learning Environment) as a forum to contribute to and participate in wider discussions relating to their learning.

Key online resources currently provided by the college include:

- **The ACM Digital Library** – full text access to their journals, transactions and proceedings
- **Business Source Premier** – full text from approx.. 4,000 journals in a wide variety of disciplines including computing and social and behavioural sciences
- **ABI/Inform** – a prestigious and wide ranging database of approx. 1,500 scholarly journals
- **Infotrac** – a multidisciplinary datable of approx. 7,000 full text journals
- **Emerald Insight** – 100 core management journals
- **Safari Books Online** – electronic texts from innovative and contemporary publishers

As with other programmes offered by the college, the range of electronic resources available to learners is fully expected to increase with experience. In the event of learners seeking a resource not yet provided by the college, the interlibrary loan facility with TCD and UK libraries will continue to be provided to learners without charge. In the past, this practice has been very helpful in specifying the most appropriate electronic resources to be acquired to support each learner cohort.

Module Learning Environment

Accommodation

Lectures are carried out in class rooms / lecture halls in the College. Lab tutorials are carried out in computer labs throughout the Campus. All have the software required to deliver the programme.

Library

All learners have access to an extensive range of physical and electronic (remotely accessible) library resources. The library monitors and updates its resources on an on-going basis, in line with the College's Library Acquisition Policy. Lecturers update reading lists for this course on an annual basis as is the norm with all courses run by Griffith College.

Module Teaching and Learning Strategy

The module is taught using a combination of lectures, tutorials and learner-led seminars. Tutorials and seminars are used to develop and discuss information presented in lectures. The learner-led seminar is a critical component of the course and is invaluable in the academic and professional development of the learner. Learners will present the interim findings of their research and present it to the group. They will receive structured feedback on their findings.

Module Assessment Strategy

Assessment comprises of 100% continuous assessment. Continuous assessment develops critical analysis and academic research skills and is based on seminar logbooks and presentations throughout the semester. The Assessment consists of three components.

Element No.	Weighting	Type	Description	Learning Outcomes Assessed
1.	40%	Log book	A research Log Book that is maintained for the Semester by the learner. Topics related to the selection of the MSc Dissertation are dealt with during lectures: for example, Topic Selection; Research Methods; the Internet as a Research Tool; Feasibility Analysis, Relevance; Statistical Data; other kinds of Data. The final part of this will be the development of a detailed project plan. The lecturer signs (but does not mark) the Log Book at regular intervals – typically after each topic – and at the end of the semester the	2,4,6

			Log Book is marked as a reflection of engagement with methods and best practice. This mark will be 40% of the overall mark for the module. Although other learning outcomes also apply, this assessment focuses on learning outcomes 2, 4 and 6. The Log Book is assessed in terms of: 1. Engagement with different methodologies 2. Attention to detail 3. Working through a variety of approaches 4. Back-ground research 5. Selection of data 6. Time management 7. Other criteria 8. Project Plan	
2.	50%	Research Paper	Learners are required to submit an Academic Research Paper on one of the areas being researched as part of the log book exercises. This will be typically about 4,000 words. This paper will be submitted in the third quarter of the module. The mark for this paper will represent 50% of the overall mark for the module. Although other learning outcomes also apply this assessment focuses on learning outcomes 1 and 5. The paper will be assessed in terms of: a) Background research b) Sources and Referencing c) Critical analysis d) Conclusions	1,5
3.	10%	Presentation	Final Presentation: Learners make a presentation of the findings in their research report to a group of examiners. This will account for 10% of the overall grade.	3