



MONASH University
Information Technology

FIT4005
IT research methods

Unit Guide

Semester 2, 2015

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FIT4005 IT research methods - Semester 2, 2015

The aim of this unit is to prepare Honours students in the Faculty of IT to conduct research across the range of IT disciplines, including computer science, software engineering, information systems and information management.

It introduces students to major research philosophies and paradigms, the principles of research design, research ethics, and research methods and techniques of data collection and analysis appropriate to IT research and their discipline.

Skills developed and knowledge acquired from this unit will prepare students to conduct and communicate their own research, as well as to be knowledgeable and critical interpreters of others' research.

Mode of Delivery

Caulfield (Day)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

(a.) Contact hours for on-campus students:

- Two 2-hour workshops

(b.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

See also Unit timetable information

Unit Relationships

Prohibitions

ITW4001, IMS5036, IMS4036, BUS5000, CSE4910, GCO4010, CSE4650, FIT5125, FIT5143, FIT5185, FIT5190

Prerequisites

Foundation knowledge in computer science or business information systems or information technology and systems fundamentals.

Chief Examiner

Professor David Green

Campus Lecturer

Caulfield

Associate Professor Graeme Johanson

Consultation hours: arrange by email.

Malaysia

Anuja Dharmaratne

Consultation hours: arrange by email.

Tutors

Caulfield

Hamid Pousti

Consultation hours: arrange by email

Noriako Sato

Consultation hours: arrange by email

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through the Student Evaluation of Teaching and Units (SETU) survey. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, see:

www.monash.edu.au/about/monash-directions/ and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

Student feedback highlighted the need for topics that are most appropriate to their area of study. To help achieve this, the unit has been restructured as a series of modules. By offering elective modules, the schedule allows students to choose between alternatives and pick topics of greatest relevance.

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To balance workloads, the marking proportions have been adjusted, and the schedule of assignments has been arranged to avoid conflicts with requirements of the Honours thesis. Past students find that the most rewarding aspects of the unit are learning about critical thinking and creative thinking and gaining practical experience on real research projects.

If you wish to view how previous students rated this unit, please go to <https://emuapps.monash.edu.au/unitevaluations/index.jsp>

Academic Overview

Learning Outcomes

On completion of this unit, students will be able to:

- identify and explain major research philosophies and paradigms;
- design rigorous and ethical Bachelor Honours level research projects and develop project proposals;
- evaluate and select research methods and techniques of data collection and analysis appropriate to particular research designs, projects and disciplines;
- conduct ethical research;
- communicate research findings in written and oral form in research and industry settings;
- critically review research literature, research design and reported findings.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activity begins in week 0
1	Module1 - THE NATURE OF RESEARCH. Rationale for research. Key terms. Paradigms. Argumentation logic.	Exercises in class begin. Assignment 1 - Portfolio of practical work is due weekly. Each workshop requires assessment.
2	Module 2 - RESEARCH PROJECT DESIGN. Contexts of research. Project structure. Formulating research questions. Towards research solutions.	Exercises in class
3	Module 3 - RESEARCH LITERATURE - How to conduct a literature search. How to prepare a literature review. International publishing structures.	Exercises in class
4	Module 4 - RESEARCH PROPOSALS. Preparing a research proposal. Managing a project.	Exercises in class
5	Module 5 - COMMUNICATION OF RESEARCH. Supervision roles. Basic requirements of presentation. Research publishing. Academic style. Networking.	Exercises in class
6	Module 6 - NATURE OF EVIDENCE. Use of online resources as data. Introduction to probability and statistics.	Exercises in class
7	Module 7: Elective Modules: Class divides into two. OPTION (a) Experimental design. Quantitative data analysis 1. OPTION (b) Qualitative data collection and analysis.	Exercises in class. Assignment 2 - Critical analysis of published material due
8	Elective Modules - OPTION (a) Probability statistics 2. OPTION (b) Action research.	Exercises in class
9	Elective Modules- OPTION (a) Correlation, regression. OPTION (b) Design Science.	Exercises in class
10	Elective Modules - OPTION (a) Algorithms and evaluation. OPTION (b) Case study.	Exercises in class
11	Elective Modules - OPTION (a) Modelling, simulation. OPTION (b) grounded theory methodology.	Exercises in class
12	Module 12: class re-combines. ETHICS. Research ethics in IT, including codes of conduct. Review of research issues.	Exercises in class Assignment 1 finishes this week, Assignment 3 presentation
	SWOT VAC	No formal assessment is undertaken in SWOT VAC. Assignment 3 Project due Week 14, Friday 5pm
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your learning system.

Teaching Approach

Workshops

This teaching and learning approach provides facilitated learning, practical exploration and peer learning. Each module will include lecture and lab-based exercises, where students can explore set problems individually or in teams. Weekly assessment requires reflection on the lecture module and workshop.

Assessment Summary

In-semester assessment: 100%

Assessment Task	Value	Due Date
Assignment 1 - Portfolio of practical work	30%	Weekly until week 12. Work from each module to be submitted by 5pm Friday of the week in which the module runs.
Assignment 2 - Critical analysis of published material	30%	Week 7, Friday 5pm
Assignment 3 - Mini-research project	40%	Presentation in Week 12, Project due Week 14, Friday 5pm

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurdles>)

Academic Integrity - Please see resources and tutorials at

<http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/>

Assessment Tasks

Participation

Full participation in the tutorials and labs is expected and will be formally assessed via Assignment 1, in which students submit a portfolio of their practical work.

Working in groups is encouraged, both during practical classes, and in the project assignment. The aim is both to facilitate learning and to expose students to team research, which is a common feature of most modern research. When working in groups, each member is expected to participate fully and contribute to the work of the group. As part of the assessment, each student will be required to name and acknowledge their collaborators and submit a statement about group management and members' individual contribution.

• Assessment task 1

Title:

Assignment 1 - Portfolio of practical work

Description:

This assessment relates to Learning Outcomes 1,3,4,5.

This assignment consists of practical work submitted by students at the end of each workshop. Students will carry out detailed exercises based on the topic of each workshop.

Weighting:

30%

Criteria for assessment:

In most workshops, the assessment will consist of lab exercises and other activities undertaken during class. Some workshops will be individual exercises; others will involve group exercises, with a single submission for the team. Work will be assessed either during class or when written work is submitted at the end of the workshop. Most of the tasks in this assignment will be assessed on the student's ability to correctly perform the tasks, and interpret the findings.

Due date:

Weekly until week 12. Work from each module to be submitted by 5pm Friday of the week in which the module runs.

• Assessment task 2

Title:

Assignment 2 - Critical analysis of published material

Description:

Assessment Requirements

This assessment relates to Learning Outcomes 2,3,5,6.

In this assignment the students will provide a critical analysis of the research objectives and methods for information technology research, based on published material.

Weighting:

30%

Criteria for assessment:

The assignment will be assessed by:

- ◆ clarity and logic of the structure,
- ◆ level of critical analysis,
- ◆ referencing,
- ◆ standard of English expression, and
- ◆ evidence of independent thought and ideas.

Due date:

Week 7, Friday 5pm

• Assessment task 3

Title:

Assignment 3 - Mini-research project

Description:

This assessment relates to Learning Outcomes 2,3,4,5.

This is a mini-project task, which can be performed by a small group of students.

The outcome includes presentation in week 12 about your mini-project (10%) and a research paper based on your mini-project (20%).

Weighting:

40%

Criteria for assessment:

The assignment will be assessed by:

- ◆ clarity and logic of the structure,
- ◆ level of critical analysis,
- ◆ referencing,
- ◆ standard of English expression,
- ◆ and quality of evidence, interpretation and conclusions.

Due date:

Presentation in Week 12, Project due Week 14, Friday 5pm

Learning resources

Reading list

See the Library list on Moodle.

Lists of additional readings will be provided for each lecture.

Anon, Library guide - Information Technology. Available at:

<http://guides.lib.monash.edu/information-technology>.

Charmaz K., 2014. *Constructing grounded theory*, London: SAGE.

Charmaz K., Qualitative Interviewing and Grounded Theory Analysis [Chapter 32]. *Handbook of*

interview research. Available at:

<http://srmo.sagepub.com.ezproxy.lib.monash.edu.au/view/handbook-of-interview-research/d39.xml>.

Corbin J.M. & Strauss A.L., 2015a. *Basics of qualitative research: techniques and procedures for developing grounded theory*, Los Angeles: SAGE Publications.

Corbin J.M. & Strauss A.L., 2015b. *Basics of qualitative research: techniques and procedures for developing grounded theory*, Los Angeles: SAGE Publications.

Crotty M., 1998. *The foundations of social research: meaning and perspective in the research process*, St Leonards, NSW: Allen & Unwin.

Glaser B.G. & Strauss A.L., 1967. *The discovery of grounded theory: strategies for qualitative research*, New York: Aldine.

Gregor S. & Hevner A.R., 2013. POSITIONING AND PRESENTING DESIGN SCIENCE RESEARCH FOR MAXIMUM IMPACT. *MIS Quarterly*, 37(2). Available at:

<http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=8736>

Hevner A.R. et al., 2004. DESIGN SCIENCE IN INFORMATION SYSTEMS RESEARCH. *MIS Quarterly*, 28(1), pp.75–105. Available at:

<http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=1258>

Lee, Allen, A SET OF PRINCIPLES FOR CONDUCTING AND EVALUATING INTERPRETIVE FIELD STUDIES IN INFORMATION SYSTEMS. *MIS Quarterly*, 23(1), pp.1–1. Available at:

<http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=2724>

Leedy P.D. & Ormrod J.E., 2013. *Practical research: planning and design*, Boston: Pearson.

McKay J. & Marshall P., 2001. The dual imperatives of action research. *Information Technology & People*, 14(1), pp.46–59.

McNiff J., 2013. *Action research: principles and practice*, Milton Park, Abingdon, Oxon: Routledge.

Neuman W.L., 2014. *Social research methods: qualitative and quantitative approaches*, Essex, UK: Pearson Education.

Orlikowski, Wanda, 2000. Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. *Organization Science*, 11(4), pp.404–428. Available at:

<http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=3629>

Peppers et al. K., 2008. A Design Science Research Methodology for Information Systems

Research. *Journal of Management Information Systems*, 24(3), pp.45–77. Available at:

<http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=2884>

Richards L., 2014. *Handling qualitative data: a practical guide*, Los Angeles: SAGE.

Spradley J.P. & McCurdy D.W., 1972. *The cultural experience: ethnography in complex society*, Chicago: Science Research Associates.

Stoecker R., 2009. Are we talking the walk of community-based research? *Action Research*, 7(4), pp.385–404.

Tavani H.T., 2011. *Ethics and technology: controversies, questions, and strategies for ethical computing*, Hoboken, N.J.: Wiley.

Urquhart C., 2013. *Grounded theory for qualitative research: a practical guide*, London: SAGE.

Urquhart C. & Fernández W., 2013. Using grounded theory method in information systems: the researcher as blank slate and other myths. *Journal of Information Technology*, 28(3), pp.224–236.

Weber R., 2012. Evaluating and Developing Theories in the Information Systems Discipline. *Journal of the Association for Information Systems*, 13(1), pp.1–30. Available at:

<http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=7425>

Williamson K. & Johanson G., 2013. *Research methods: information, systems and contexts*, Prahran, Vic: Tilde University Press.

Yin R.K., 2014. *Case study research: design and methods*, Los Angeles: SAGE.

Zikmund W.G., 2013. *Business research methods*, Mason, OH: South-Western.

Monash Library Unit Reading List (if applicable to the unit)

<http://readinglists.lib.monash.edu/index.html>

Feedback to you

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Solutions to tutes, labs and assignments
- Other: peer-assessment for tutorial contribution

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process: <http://www.monash.edu.au/exams/special-consideration.html>

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Referencing requirements

All assignments should use APA style for referencing.

Assignment submission

It is a University requirement

(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-pla>) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at <http://www.infotech.monash.edu.au/resources/student/forms/>. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an electronic submission). Please note that it is your responsibility to retain copies of your assessments.

Online submission

Electronic Submission is required for this unit. Please submit your work via the MOODLE site for this unit, which you can access via links in the my.monash portal. Standard assignment cover sheet has to be signed and submitted with each written assignment to confirm the proper acknowledgement of the resources used in the text.

Required Resources

Please check with your lecturer before purchasing any Required Resources. Limited copies of prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

Students may be required to use Web browsers, word processing, spread sheets and slide presentation packages to complete their assignments.

Assessment Requirements

These are available in University computer labs.

Recommended Resources

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:

www.policy.monash.edu.au/policy-bank/academic/education/index.html

Faculty resources and policies

Important student resources including Faculty policies are located at

<http://intranet.monash.edu.au/infotech/resources/students/>

Graduate Attributes Policy

<http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.h>

Student Charter

www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.html

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at <http://www.monash.edu.au/students>. For Malaysia see <http://www.monash.edu.my/Student-services>, and for South Africa see <http://www.monash.ac.za/current/>.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to www.lib.monash.edu.au or the library tab in [my.monash](#) portal for more information. At Malaysia, visit the Library and Learning Commons at <http://www.lib.monash.edu.my/>. At South Africa visit <http://www.lib.monash.ac.za/>.

Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

- Website: <http://www.monash.edu/equity-diversity/disability/index.html>
- Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Community Services at 03 55146018 at Malaysia
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Malaysia Campus