# MONASH University

**FIT4005
IT research methods**

**Unit guide**

**Semester 1, 2009**

*Last updated : 20 Apr 2009*

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# FIT4005 IT research methods - Semester 1, 2009

## Unit leader :

David Green

## Lecturer(s) :

## Clayton

- David Green

## South Africa

- Jan Meyer

## Introduction

Welcome to FIT4005 IT research methods. This is a core unit for all honours programs in the Faculty of IT, except the Bachelor of Software Engineering. The unit is designed to provide you with a practical understanding of research and an introduction to a range of essential research methods used in information technology.

## Unit synopsis

FIT4005 is a compulsory unit for all honours students in InformationTechnology degrees. The unit introduces students to a variety of issues, concepts, methods and techniques associated with IT research. Skills developed and knowledge acquired from this unit will prepare students to conduct their own research, as well as to be knowledgeable consumers of others' research.

## Learning outcomes

After completing this unit students will:

have knowledge and understanding of:

- Basic research concepts, major philosophical foundations (theory, framework, paradigm, scientific method and methodologies in general)
- Research methods and techniques relevant to IT research.
- Key issues in IT research.
- History of research
- The strengths and the limitations of a variety of research methods, and the choices and trade-offs that need to be made in designing a research project.
- The process of reviewing research literature on a specific topic.
- Ethical practice, social networks and the role of peer review related to conducting research.

have developed attitudes of:

- Confidence in themselves as informed consumers of published research, able to critically evaluate the relative quality and merits of reported research findings.

- Confidence in their ability to undertake independent research and to complete a thesis.
- Ethical awareness in relation to issues that arise in the conception, design and implementation of research.

have the skills to:

- Identify research opportunities and also the potential problems in undertaking research in a particular area, or in using a particular method or approach.
- Frame viable research questions.
- Assess the significance of research questions and research findings.
- Write an effective critical and evaluative (ie not simply a descriptive) review of the research literature on a particular topic.
- Evaluate a research topic and produce a sustainable research design, effective research proposal, research propositions and operationalise research propositions.
- Devise data collection instruments and procedures for analyzing data for a particular project.

have the communication skills to:

- Communicate research ideas effectively in oral or written form.
- Perform peer review

# Workload

The workload commitment for on campus students for this unit are:

- 2 hour lecture
- 2 hour workshop/tutorial
- 5 hours of reading, further research, assignment and research related activities

Off campus students are required to spend 12 hours per week on reading lecture notes and specified reading materials, and participating in online discussion groups and preparing assignments.

# Unit relationships

## Prerequisites

Before attempting this unit you must have satisfactorily completed an approved undergraduate degree in business information systems (BIS) or computer science (CS) or information technology and systems (ITS) or equivalent. You should have foundation knowledge in computer science or business information systems or information technology and systems fundamentals.

## Relationships

FIT4005 is a core unit in the Faculty of Information Technology Honours degrees. Before attempting this unit you must have an approved undergraduate degree in business information systems (BIS) or computer science (CS) or information  technology and systems (ITS) or equivalent experience. You should have foundation knowledge in computer science or business information systems or information  technology and systems fundamentals

# Continuous improvement

Monash is committed to 'Excellence in education' (Monash Directions 2025 - http://www.monash.edu.au/about/monash-directions/directions.html) and strives for the highest possible quality in teaching and learning.

To monitor how successful we are in providing quality teaching and learning Monash regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through Unit Evaluation Surveys. The University's Unit Evaluation policy (http://www.policy.monash.edu/policy-bank/academic/education/quality/unit-evaluation-policy.html) requires that every unit offered is evaluated each year. Students are strongly encouraged to complete the surveys as they are an important avenue for students to "have their say". The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

Faculties have the option of administering the Unit Evaluation survey online through the my.monash portal or in class. Lecturers will inform students of the method being used for this unit towards the end of the semester.

# Student Evaluations

If you wish to view how previous students rated this unit, please go to http://www.adm.monash.edu.au/cheq/evaluations/unit-evaluations/

# Improvements to this unit

The unit is no longer tied to preparation of a thesis. The content has been revised to place give equal emphasis to all aspects of the research cycle, and less on specific technical matters, such as statistics and survey methods. The workload of the unit has been adjusted to address new technologies, methods and paradigms in IT research. Updated examples, case studies etc have been added.

# Unit staff - contact details

## Unit leader

**Professor David Green**
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## Lecturer(s) :

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# Teaching and learning method

Various activities are included in this unit. The weekly lectures will focus on each stage of a typical research project. The assignments will specifically explore project preparation, gathering and interpreting evidence, and communicating results. The workshops are specifically designed to help students gain practical experience with each stage involved in conducting research.

# Off-campus distributed learning or flexible delivery

All unit materials used by on campus students will be made available to off campus students. In addition, online discussion groups will be set up for students to discuss the subject matters. The discussion groups will be moderated by the lecturers.

# Communication, participation and feedback

Monash aims to provide a learning environment in which students receive a range of ongoing feedback throughout their studies. You will receive feedback on your work and progress in this unit. This may take the form of group feedback, individual feedback, peer feedback, self-comparison, verbal and written feedback, discussions (on line and in class) as well as more formal feedback related to assignment marks and grades. You are encouraged to draw on a variety of feedback to enhance your learning.

It is essential that you take action immediately if you realise that you have a problem that is affecting your study. Semesters are short, so we can help you best if you let us know as soon as problems arise. Regardless of whether the problem is related directly to your progress in the unit, if it is likely to interfere with your progress you should discuss it with your lecturer or a Community Service counsellor as soon as possible.

# Unit Schedule

| Week | Topic | Key dates |
|---|---|---|
| 1 | The nature of research | |
| 2 | Formulating research questions | |
| 3 | Setting the context | |
| 4 | Study design | |
| 5 | Scientific communication - written | |
| 6 | The nature of scientific argument | 1st assignment due |
| Mid semester break | | |
| 7 | The nature of scientific evidence | |
| 8 | Gathering evidence | |
| 9 | Hypothesis testing | |
| 10 | Hypothesis testing | |
| 11 | Virtual experiments | 2nd assignment due |
| 12 | Scientific communication - oral | |
| 13 | Issues in dealing with evidence | 3rd assignment due one week after end of semester |

# Unit Resources

## Prescribed text(s) and readings

There is no prescribed textbook. Recommended reading will be provided for each lecture.

## Recommended text(s) and readings

Additional reading:

W. Lawrence Neuman (2006) Social Research Methods: Qualitative and Quantitative Approaches, 6th edition, Pearson Education, Frenchs Forest.

Veal, A.J.(2005). Business Research Methods: a Managerial Approach. (2nd Edition). Pearson Education, Frenchs Forest.

A list of additional readings will be provided for each lecture. See the web site for the list.

## Required software and/or hardware

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

## Equipment and consumables required or provided

Students will need access to:

- a personal computer with Windows XP or compatible operating environment
- the internet via dial-up connection or preferably by broadband
- software for word processing, spreadsheets and slide shows

On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to 2 hours per week for use of a computer, including time for newsgroups/discussion groups.

## Study resources

Study resources we will provide for your study are:

The FIT4005 web site on MUSO, where lecture slides, weekly tutorial requirements, assignment specifications and supplementary material will be posted.

## Library access

The Monash University Library site contains details about borrowing rights and catalogue searching.  To learn more about the library and the various resources available, please go to http://www.lib.monash.edu.au.

The Educational Library and Media Resources (LMR) is also a very resourceful place to visit at http://www.education.monash.edu.au/library/

# Monash University Studies Online (MUSO)

All unit and lecture materials are available through MUSO (Monash University Studies Online). Blackboard is the primary application used to deliver your unit resources. Some units will be piloted in Moodle. If your unit is piloted in Moodle, you will see a link from your Blackboard unit to Moodle (http://moodle.monash.edu.au) and can bookmark this link to access directly. In Moodle, from the Faculty of Information Technology category, click on the link for your unit.

You can access MUSO and Blackboard via the portal: http://my.monash.edu.au

Click on the Study and enrolment tab, then Blackboard under the MUSO learning systems.

In order for your Blackboard unit(s) to function correctly, your computer needs to be correctly configured.

For example:

- Blackboard supported browser
- Supported Java runtime environment

For more information, please visit: http://www.monash.edu.au/muso/support/students/downloadables-student.html

You can contact the MUSO Support by phone : (+61 3) 9903 1268

For further contact information including operational hours, please visit:
http://www.monash.edu.au/muso/support/students/contact.html

Further information can be obtained from the MUSO support site:
http://www.monash.edu.au/muso/support/index.html

# Assessment

## Unit assessment policy

The unit is assessed via three assignments.
To pass the unit you must:

- attempt all assignments
- achieve at least 50% of possible marks.

## Assignment tasks

- **Assignment Task**

  **Title :** Assignment 1

  **Description :**

  Exercise in setting context, framing research questions and carrying out a critical review.
  **Weighting :** 30%

  **Criteria for assessment :**

**Due date :** 10 April 2009
- **Assignment Task**

   **Title :** Assignment 2

   **Description :**

   Exercises on methodologies in gathering, interpreting and presenting evidence.
   **Weighting :** 30%

   **Criteria for assessment :**

   **Due date :** 22 May 2009
- **Assignment Task**

   **Title :** Assignment 3

   **Description :**

   Mini-project report, written and slide/poster presentation
   **Weighting :** 40%

   **Criteria for assessment :**

   **Due date :** 12 June 2009

## Assignment submission

Assignments should be submitted via MUSO by the due dates specified above.

## Assignment coversheets

The assignment coversheet is available from the faculty website.
# University and Faculty policy on assessment

## Due dates and extensions

The due dates for the submission of assignments are given in the previous section. Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are seldom regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Requests for extensions must be made to the unit lecturer at least two days  before the due date. You will be asked to forward original medical certificates in  cases of illness, and may be asked to provide other forms of documentation  where necessary. A copy of the email or other written communication of an  extension must be attached to the assignment submission.

Students are required to complete an 'Application for extension of time for submission of an assessment task' form which is located at http://www.infotech.monash.edu.au/resources/student/forms/

# Late assignment

Assignments received after the due date will be subject to a penalty of 10% of the mark awarded.

# Return dates

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

Assessment for the unit as a whole is in accordance with the provisions of the Monash University Education Policy at http://www.policy.monash.edu/policy-bank/academic/education/assessment/

# Plagiarism, cheating and collusion

Plagiarism and cheating are regarded as very serious offences. In cases where cheating  has been confirmed, students have been severely penalised, from losing all marks for an assignment, to facing disciplinary action at the Faculty level. While we would wish that all our students adhere to sound ethical conduct and honesty, I will ask you to acquaint yourself with the University Plagiarism policy and procedure (http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html) which applies to students detected plagiarising.

In this University, cheating means seeking to obtain an unfair advantage in any examination or any other written or practical work to be submitted or completed by a student for assessment. It includes the use, or attempted use, of any means to gain an unfair advantage for any assessable work in the unit, where the means is contrary to the instructions for such work.

When you submit an individual assessment item, such as a program, a report, an essay, assignment or other piece of work, under your name you are understood to be stating that this is your own work. If a submission is identical with, or similar to, someone else's work, an assumption of cheating may arise. If you are planning on working with another student, it is acceptable to undertake research together, and discuss problems, but it is not acceptable to jointly develop or share solutions unless this is specified by your lecturer.

Intentionally providing students with your solutions to assignments is classified as "assisting to cheat" and students who do this may be subject to disciplinary action. You should take reasonable care that your solution is not accidentally or deliberately obtained by other students. For example, do not leave copies of your work in progress on the hard drives of shared computers, and do not show your work to other students. If you believe this may have happened, please be sure to contact your lecturer as soon as possible.

Cheating also includes taking into an examination any material contrary to the regulations, including any bilingual dictionary, whether or not with the intention of using it to obtain an advantage.

Plagiarism involves the false representation of another person's ideas, or findings, as your own by either copying material or paraphrasing without citing sources. It is both professional and ethical to reference clearly the ideas and information that you have used from another writer. If the source is not identified, then you have plagiarised work of the other author. Plagiarism is a form of dishonesty that is insulting to the reader and grossly unfair to your student colleagues.

# Register of counselling about plagiarism

The university requires faculties to keep a simple and confidential register to record counselling to students about plagiarism (e.g. warnings). The register is accessible to Associate Deans Teaching (or nominees) and, where requested, students concerned have access to their own details in the register. The register is to serve as a record of

counselling about the nature of plagiarism, not as a record of allegations; and no provision of appeals in relation to the register is necessary or applicable.

## Non-discriminatory language

The Faculty of Information Technology is committed to the use of non-discriminatory language in all forms of communication. Discriminatory language is that which refers in abusive terms to gender, race, age, sexual orientation, citizenship or nationality, ethnic or language background, physical or mental ability, or political or religious views, or which stereotypes groups in an adverse manner. This is not meant to preclude or inhibit legitimate academic debate on any issue; however, the language used in such debate should be non-discriminatory and sensitive to these matters. It is important to avoid the use of discriminatory language in your communications and written work. The most common form of discriminatory language in academic work tends to be in the area of gender inclusiveness. You are, therefore, requested to check for this and to ensure your work and communications are non-discriminatory in all respects.

## Students with disabilities

Students with disabilities that may disadvantage them in assessment should seek advice from one of the following before completing assessment tasks and examinations:

- Faculty of Information Technology Student Service staff, and / or
- your Unit Coordinator, or
- Disabilities Liaison Unit

## Deferred assessment and special consideration

Deferred assessment (not to be confused with an extension for submission of an assignment) may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Information and forms for Special Consideration and deferred assessment applications are available at http://www.monash.edu.au/exams/special-consideration.html. Contact the Faculty's Student Services staff at your campus for further information and advice.