



**MONASH** University  
Information Technology

**FIT4146**  
**Emergent technologies and interfaces**

**Unit Guide**

**Semester 2, 2012**

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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# **FIT4146 Emergent technologies and interfaces - Semester 2, 2012**

This unit will focus on research into the latest developments in the field of information technology, including innovative technology developments involving human computer interaction, information visualisation of complex data and emerging interface techniques. Students will learn valuable research and communication skills as they investigate and share with their peers the impact of emergent technologies and interfaces on society. The content presented in the lectures will focus on grand challenges in the field of information technology and on emerging trends. Students will apply their theoretical understanding to a practical project negotiated with the lecturer using a learning contract.

## **Mode of Delivery**

Caulfield (Day)

## **Contact Hours**

2 hrs lectures/wk, 2 hrs tutorials/wk

## **Workload**

Students will be expected to spend a total of 12 hours per week during semester on this unit as follows:

- Lectures: 2 hours per week
- Tutorials/Lab Sessions: 2 hours per week per tutorial
- and up to an additional 8 hours in some weeks for completing lab and project work, private study and revision.

## **Unit Relationships**

### **Prohibitions**

FIT3146

### **Prerequisites**

24 points of level 4 or 9 FIT units

### **Chief Examiner**

Dr Michael Morgan

### **Campus Lecturer**

**Berwick**

**Dr Michael Morgan**

**Caulfield**

**Dr Matthew Butler**

**Dr Michael Morgan**

# Academic Overview

## Outcomes

At the completion of this unit students will have -

A theoretical and conceptual understanding of:

- the diversity of theoretical and conceptual frameworks which contribute to the current developments in the field of information technology, including human computer interaction, information visualisation and interface design;
- the grand challenges in the field of information technology and the emerging trends, including the range of applications to which emerging information technologies, information visualisation techniques and innovative interfaces can be applied, for example ubiquitous computing, geospatial information visualisation and mobile devices interfaces.

Developed attitudes that enable them to:

- critically evaluate the impact of rapid changes in information technology on society and to appreciate the pervasive and expanding range of applications and fields on which information technology is impacting.

Developed the skills to:

- locate and critically evaluate information on current research in the field, for example using electronic library databases, and to synthesise the information they have gathered into a logical and coherent argument;
- communicate results of their investigation to their peers effectively through written and/or oral presentations while correctly acknowledging and referencing source material;
- apply their theoretical understanding to a practical project negotiated with the lecturer using a learning contract.

Demonstrated the teamwork skills necessary to:

- work as a member of a team to present the finding of their research to their peers.

## Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:
  - a. engage in an internationalised world
  - b. exhibit cross-cultural competence
  - c. demonstrate ethical values

critical and creative scholars who:

- a. produce innovative solutions to problems

- b. apply research skills to a range of challenges
- c. communicate perceptively and effectively

## Assessment Summary

In-semester assessment: 100%

Assessment Task	Value	Due Date
1. Literature Survey - (3500 words individual) (40%)	40%	Part a. Literature Survey Draft (20%) Friday 3pm week 6 , Part b. Peer Review (10%) Friday 3pm week 9, Part c. Author Revisions (10%) Friday 3pm week 14
2. Presentation and Feedback (20%)	20%	Presentations in Class Weeks 7 to 11 (presentation materials submitted Friday 3 pm week 6 and Peer Evaluation sheets submitted in class weeks 7 - 11)
3. Application of Research Project (40%)	40%	Friday 3pm Week 12

## Teaching Approach

- **Research activities**  
Students are required to research a topic of interest aligned with the specified research themes and share the results of this research with their peers.
- **Problem-based learning**  
Students are encouraged to take responsibility for organising and directing their learning with support from their supervisors.

## Feedback

### Our 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
- Other: Peer assessment of presentations.

### 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 SETU, Student Evaluation of Teacher and Unit. 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, and on student evaluations, see:

<http://www.monash.edu.au/about/monash-directions/directions.html>

<http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html>

## **Previous Student Evaluations of this unit**

This is the first offering of this unit.

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

## Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introduction and Research Methods	
2	Theme 1 - Information Visualisation	
3	Theme 2 - New Interfaces and Interactions	
4	Theme 3 - Social Computing	Learning Contract
5	Theme 4 - Gaming and Augmented Reality	
6	Theme 5 - Mobile and Ubiquitous Computing	1. Literature Survey - Part a: Literature Survey Draft (20%) due Friday 3pm. Presentation materials for Assessment task 2 due week 6
7	Micro Lecture Theme 1 - Student Presentation, Demonstration, Debate.	2. Presentation and Feedback (20%) wk 7 - 11 and Peer Evaluation sheets to be submitted in class weeks 7 - 11
8	Micro Lecture Theme 2 - Student Presentation, Demonstration, Debate.	
9	Micro Lecture Theme 3 - Student Presentation, Demonstration, Debate.	1. Literature Survey - Part b: Peer Review (10%) wk 9 due Friday 3pm.
10	Micro Lecture Theme 4 - Student Presentation, Demonstration, Debate.	
11	Micro Lecture Theme 5 - Student Presentation, Demonstration, Debate.	
12	Review and Further Research	3. Application of Research Project (40%) wk 12 due Friday 3pm. and 1. Literature Survey - Part c: Author Revisions (10%) wk 14 due Friday 3pm.
	SWOT VAC	No formal assessment is undertaken during SWOT VAC
	Examination period	LINK to Assessment Policy: <a href="http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html">http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html</a>

\*Unit Schedule details will be maintained and communicated to you via your MUSO (Blackboard or Moodle) learning system.



# Assessment Requirements

## Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://www.infotech.monash.edu.au/resources/staff/edgov/policies/assessment-examinations/unit-assessment-hu>)

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at

<http://lib.monash.edu/tutorials/citing/>

## Assessment Tasks

### Participation

- **Assessment task 1**

**Title:**

1. Literature Survey - (3500 words individual) (40%)

**Description:**

Conduct a detailed survey of the current literature relating to research into the latest developments in the field of Information Technology, including developments in Information Visualization, New Interfaces and Interactions, Social Computing, Gaming and Augmented Reality, Mobile and Ubiquitous Computing. The survey should discuss the potential impact of emergent technologies and interfaces on society in general and the field of information technology in particular. (Based on a template for a conference paper – strict page guidelines. Topic nominations by week 1)

1. **Literature Survey Draft (20%)** wk 6 – Draft a literature survey detailing the latest research addressing an important issue resulting from an emerging technology or interface. The literature survey should compare and contrast key research results and suggest areas for further research. Include copies of the key source literature (5 to 10 sources) on which the survey is based (2500 words).
2. **Peer Review (10%)** wk 9 – Provide a detailed peer review of 2 assigned draft papers suggesting ways in which the papers could be improved (500 words).
3. **Author Revisions (10%)** wk 14 – Based on the feedback from lecturers and your peers complete the literature survey to a standard suitable for publication and provide a written response to reviews (Colour coded changes to the original + 500 words description and justification of changes).

(Students enrolled in FIT4146 will be expected to demonstrate a deeper engagement and level of critical analysis of the literature than students enrolled in FIT3146. The marking criteria listed below will be applied to reflect this distinction.)

(Students who wish to participate in a group learning contract for Assessment Task 3 should select related Literature Survey topics).

**Weighting:**

40%

**Criteria for assessment:**

**Part a. Literature Survey Draft (20%)** wk 6

- ◆ Literature Review Conventions and Written Expression (5)
- ◆ Structure and Quality of Argument (7)

## Assessment Requirements

- ◆ Research Sources, Relevance and Use of Quotes (5)
- ◆ Document Presentation and Formatting of References (3)

### **Part b. Peer Review (10%) wk 9**

- ◆ Constructive Feedback on Written Expression and Content (5)
- ◆ Constructive Feedback on Structure, Formatting and Referencing (5)

### **Part c. Author Revisions (10%) wk 14**

- ◆ Improvements to Written Expression and Content (3)
- ◆ Improvements to Structure, Formatting and Referencing (3)
- ◆ Justification of Changes Made (4)

#### **Due date:**

Part a. Literature Survey Draft (20%) Friday 3pm week 6 , Part b. Peer Review (10%) Friday 3pm week 9, Part c. Author Revisions (10%) Friday 3pm week 14

## • **Assessment task 2**

#### **Title:**

2. Presentation and Feedback (20%)

#### **Description:**

Based on the progress in the Literature Survey Draft and Learning Contract, participation in a student presentation (slides/presentation materials submitted week 6) (15%) of approximately 20 minutes plus 5 minutes question time, addressing an important issue raised by an emerging technology or interface, consisting of one of the following:

1. Seminar – In depth discussion of a specific issue
2. Demonstration – Practical demonstration of a specific aspect of current research
3. Debate – Formal debate on the merits of a proposition relating to an emerging technology

Students will be required to provide feedback (5%) via Peer Evaluation sheets on the presentations delivered by their peers.

All students are expected to attend and contribute to the question time of the presentations delivered by their peers.

Assessment of seminar presentations will be based partly on lecturer assessment and partly on Peer Evaluation sheets completed by all students.

Each week in the seminars you will be given a Peer Evaluation sheet for the presentations, which must be completed and handed back at the end of the presentation session.

These will be used to help determine the grades for the groups that are presenting.

Marks will be awarded for completing Peer Evaluation sheets as follows:

Complete 80 to 100% of Peer Evaluation sheets = 5 marks

Complete 70 to 79% of Peer Evaluation sheets = 4 marks

Complete 60 to 69% of Peer Evaluation sheets = 3 marks

Complete 50 to 59% of Peer Evaluation sheets = 2 marks

Complete less than 50% of Peer Evaluation sheets = 0 marks

**Weighting:**

20%

**Criteria for assessment:**

Presentation Delivery and Teamwork (5)

Content, Research and Relating the Topic to Research Theme (5)

Presentation materials, Notes, Props and/or Graphics (5)

Peer Evaluation sheets (5)

**Due date:**

Presentations in Class Weeks 7 to 11 (presentation materials submitted Friday 3 pm week 6 and Peer Evaluation sheets submitted in class weeks 7 - 11)

• **Assessment task 3**

**Title:**

3. Application of Research Project (40%)

**Description:**

A learning contract will be developed for each student, or in some cases for a group of students, to allow them to demonstrate the application of their research to a practical domain in the field of Information Technology. The negotiated demonstration must be closely tied to the theoretical perspectives identified in the Literature Survey Draft assessment task. Applications of research could consist of:

- ◆ A demonstration application – for example the visualization of some data or the creation of an interface element
- ◆ A detailed application design document
- ◆ Detailed screen layouts for new interaction techniques
- ◆ A theoretical framework
- ◆ A detailed evaluation or critique of an existing system, interface or technology
- ◆ Creation of a data collection instrument designed to investigate an issue further – for example a survey design

Assessment of this task will be based on a set of agreed criteria specified in the learning contract.

Generally assessment criteria will involve:

- ◆ Demonstration of an emerging technology or interface
- ◆ Linking theory to practice in the field of Information Technology
- ◆ Technical ability and/or design skills and/or evaluation skills
- ◆ Meeting the objectives set and on schedule

Learning contracts will normally be finalized by the end of week 4.

(Students enrolled in FIT4146 will be expected to conduct a more ambitious project that demonstrates a deeper engagement with the research theory in the area than students enrolled in FIT3146. The agreed Learning Contract will address this expectation and the

## Assessment Requirements

marking criteria listed below will be applied to reflect this distinction.)

**Weighting:**

40%

**Criteria for assessment:**

Demonstration of an emerging technology or interface (10)

Linking theory to practice in the field of Information Technology (10)

Technical ability and/or design skills and/or evaluation skills (10)

Meeting the objectives set and on schedule (10)

**Due date:**

Friday 3pm Week 12

## Assignment submission

It is a University requirement

(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html>) 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 online quiz).

## Online submission

If Electronic Submission has been approved for your unit, please submit your work via the VLE site for this unit, which you can access via links in the my.monash portal.

## 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.infotech.monash.edu.au/resources/student/equity/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.

## 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:

<http://policy.monash.edu.au/policy-bank/academic/education/index.html>

Key educational policies include:

- Plagiarism  
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html>)
- Assessment  
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-p>)
- Special Consideration  
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h>)
- Grading Scale  
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html>)
- Discipline: Student Policy  
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html>)
- Academic Calendar and Semesters (<http://www.monash.edu.au/students/key-dates/>);
- Orientation and Transition (<http://www.infotech.monash.edu.au/resources/student/orientation/>);  
and
- Academic and Administrative Complaints and Grievances Policy  
(<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy>)
- Codes of Practice for Teaching and Learning  
(<http://www.policy.monash.edu.au/policy-bank/academic/education/conduct/suppdocs/code-of-practice-tea>)

### 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 [www.monash.edu.au/students](http://www.monash.edu.au/students). For Sunway see <http://www.monash.edu.my/Student-services>, and for South Africa see <http://www.monash.ac.za/current/>

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

Academic support services may be available for students who have a disability or medical condition. Registration with the Disability Liaison Unit is required. Further information is available as follows:

- Website: <http://monash.edu/equity-diversity/disability/index.html>;
- Email: [dlu@monash.edu](mailto:dlu@monash.edu)
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus
- Telephone: 03 9905 5704, or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway