



MONASH University
Information Technology

FIT4146
Emergent technologies and interfaces

Unit Guide

Semester 2, 2014

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FIT4146 Emergent technologies and interfaces - Semester 2, 2014

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)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

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

- Two hours of lectures
- One 2-hour tutorial

(b.) Additional requirements (all students):

- A minimum of 8 hours independent study per week 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

Caulfield

Dr Michael Morgan

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

This unit was offered for the first time in 2012. Detailed feedback was provided in unit evaluations. Positive comments related to:

- Being able to choose areas of interest
- Flexibility of assessment items
- Focus on new and emerging technologies

Comments of concern were also raised, and are being addressed in this offering of the unit. They included:

- Lack of examples - this can now be addressed properly given there are excellent examples that can be used from the previous offering.
- Confusion around number of assessment item deliverables - this has been streamlined this offering to reduce the number and highlight more clearly the deliverables expected and how they relate to each other.
- Relationship between assessment items - although this was explained in the first offering, the links between all assessment items will be made more explicit

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

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.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introduction and the market place of ideas	
2	Theme 1 - Emerging Interfaces, Interactions and Tangible Interfaces	1 a) Patent Application 5% (Friday week 2)
3	Theme 2 - Prototyping, 3D Printing and the Maker Community	
4	Theme 3 - Social, Ubiquitous and Mobile Computing and 3rd World Solutions	
5	Theme 4 - Data, Analytics and Information Visualisation	
6	Theme 5 - Gaming, Virtual and Augmented Reality Technologies	1 b) Concept Outline 5% (Friday week 6)
7	Micro Lecture Theme 1 - Student Venture Capital Presentations and Market Research Activities	1 c) Video or Live Venture Capital Presentation plus questions 20% and Market or Usability Research Activity 5% (Weeks 7 to 11)
8	Micro Lecture Theme 2 - Student Venture Capital Presentations and Market Research Activities	2 a) Participation in Market Research or Usability Activities each week 5% (Weeks 7 to 11)
9	Micro Lecture Theme 3 - Student Venture Capital Presentations and Market Research Activities	2 b) Allocating venture capital to at least 2 proposals each week and feedback comments 10% (Weeks 7 to 11)
10	Micro Lecture Theme 4 - Student Venture Capital Presentations and Market Research Activities	2 c) Investing in at least 10 IPO proposals and feedback comments 10% (Friday Week 12)
11	Micro Lecture Theme 5 - Student Venture Capital Presentations and Market Research Activities	
12	Summary and IPOs, Demos and Prospectus Launch	3) IPO, Demo and Prespectus 40% (Tuesday week 12)
	SWOT VAC	No formal assessment is undertaken in SWOT VAC
	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

- **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.

Unit Schedule

- **Problem-based learning**

Students are encouraged to take responsibility for organising and directing their learning with support from their supervisors.

Assessment Summary

In-semester assessment: 100%

Assessment Task	Value	Due Date
1. Venture Capital Presentation and Associated Activities (35%)	35%	1 a). Patent Application (5%) Friday 3pm week 2 , 1 b). Concept Outline (5%) Friday 3pm week 6, 1 c). Video or Live Pitch to Class plus Questions (20%) and Market or Usability Research Activity (5%) Weeks 7 to 11 in class.
2. In Class Activity Feedback and Investment Activity (25%)	25%	2 a) Participation in class in market research activity and feedback activities (5%) Weeks 7 to 11, 2 b) Allocation of venture capital and comments (10%) Weeks 7 to 11, 2 c). Investing in IPO projects and comments (10%) Friday 3pm Week 12
3. Initial Public Offering (IPO), Demo and Prospectus (40%)	40%	Friday 3pm Week 12

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

- **Assessment task 1**

Title:

1. Venture Capital Presentation and Associated Activities (35%)

Description:

In a team of two deliver a proposal for an innovative concept for a product or service based on an emerging technology in the specified theme topics and present this to your peers to attract venture capital investment.

1 a) Patent Application (5%) wk 2 – A 1 page patent application to reserve the idea for your project.

1 b) Concept Outline * (5 %) wk 6 – A 3 page Concept Outline detailing the nature of the project, the technical basis and the potential benefit.

1 c) Video or Live Pitch to Class plus Questions (20%) and Market or Usability Research Activity (5%) wks 7 to 11 –

A presentation to the class to pitch your idea involving:

A 6 minute video or live pitch to the class

A 4 minute investor question and answer session

A 5 minute class activity for market research or usability research (i.e. online survey or activity sheets)

Note, items marked with a * above have a greater expectation for students enrolled in FIT4146. This criteria will be made clear in class and on the unit website.

Weighting:

35%

Criteria for assessment:

1 a). Patent Application (5%) wk 2

- ◆ Quality of presentation of concept (2)
- ◆ Originality and technical innovation of concept (3)

1 b). Concept Outline * (5%) wk 6

Assessment Requirements

- ◆ Quality and detail of the presentation of an original concept (2)
- ◆ Technical soundness and potential impact of concept (3)

1 c). Video or Live Pitch to Class plus Questions (20%) and Market or Usability Research Activity (5%) wks 7 to 11

- ◆ Quality of the presentation of a 6 minute video or live pitch to class (5)
- ◆ Innovation and technical excellence of the proposal (5)
- ◆ Potential Impact, Market and Profitability (5)
- ◆ Social Impact, Equity and Sustainability of project (5)
- ◆ Development of an online market or usability research instrument to be conducted in class to gather feedback on the proposed project (5)

Note, items marked with a * above have a greater expectation for students enrolled in FIT4146. This criteria will be made clear in class and on the unit website.

Due date:

1 a). Patent Application (5%) Friday 3pm week 2 , 1 b). Concept Outline (5%) Friday 3pm week 6, 1 c). Video or Live Pitch to Class plus Questions (20%) and Market or Usability Research Activity (5%) Weeks 7 to 11 in class.

• **Assessment task 2**

Title:

2. In Class Activity Feedback and Investment Activity (25%)

Description:

Participation in market research or usability research activities to provide feedback to project presentations and investment activity.

2 a). Participation in class in market research activity and feedback activities. (5%)
wks 7 to 11.

2 b). Allocation of venture capital to at least 2 proposals per week and comments (10%) wks 7 to 11. Top venture capital investors each week get bonus marks (Venture capital result = project capital pledged x assessed mark)

2 c). Investing in at least 10 IPO projects and comments (10%) Wk 12. Top share investors get bonus marks (Share price result = project shares invested x assessed mark)

Weighting:

25%

Criteria for assessment:

2 a) Participation in class in market research activity and feedback activities -

- ◆ 80% or more participation 5 marks, 60% 4 marks, 40% 3 marks, less than 40% no marks (5)

2 b) Allocation of venture capital

- ◆ Allocation of venture capital to at least 2 proposals per week and submitting feedback comments (5)
- ◆ Top venture capital investors get bonus marks (Venture capital result = project capital pledged x assessed mark) (5) - Top 10 investors get 5 marks, next 10 4 marks, next 10 3 marks, etc.

2 c) Investing in IPO projects

- ◆ Investing in at least 10 IPO projects and submitting feedback comments (5)
- ◆ Top 10 share investors (Share price result = project shares invested x assessed mark)(5) - Top 10 investors get 5 marks, next 10 4 marks, next 10 3 marks, etc.

Due date:

2 a) Participation in class in market research activity and feedback activities (5%) Weeks 7 to 11, 2 b) Allocation of venture capital and comments (10%) Weeks 7 to 11, 2 c). Investing in IPO projects and comments (10%) Friday 3pm Week 12

• Assessment task 3

Title:

3. Initial Public Offering (IPO), Demo and Prospectus (40%)

Description:

In a team of 2 issue a prospectus and demonstration for the IPO of your innovative concept including the following elements:

A 3 minute video pitching your revised idea

A technical demonstration of the product or service or a detailed technical specification for the product or service *

A 12 page prospectus document detailing *

- ◆ Innovative concept
- ◆ Technical considerations
- ◆ Potential market and profitability
- ◆ Market research/Usability research results
- ◆ Social impact

Note, items marked with a * above have a greater expectation for students enrolled in FIT4146. This criteria will be made clear in class and on the unit website.

Weighting:

40%

Criteria for assessment:

Quality and professionalism of 3 minute video pitching your revised idea or demo of concept (10)

Professional presentation and detail of prospectus document (5)

Innovation and technical excellence of demonstration or technical specification (10)

Potential market and profitability (5)

Market research or Usability research results (5)

Potential social impact and sustainability (5)

Due date:

Friday 3pm Week 12

Learning resources

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

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

Faculty of Information Technology [Style Guide](#)

Feedback to you

Examination/other end-of-semester assessment feedback may take the form of feedback classes, provision of sample answers or other group feedback after official results have been published. Please check with your lecturer on the feedback provided and take advantage of this prior to requesting individual consultations with staff. If your unit has an examination, you may request to view your examination script booklet, see

<http://intranet.monash.edu.au/infotech/resources/students/procedures/request-to-view-exam-scripts.html>

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.

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.

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 online quiz). Please note that it is your responsibility to retain copies of your assessments.

Online submission

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

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

Key educational policies include:

- Student Academic Integrity Policy and Student Academic Integrity: Managing Plagiarism and Collusion Procedures ;
<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-policy.h>
- Assessment in Coursework Programs;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-po>
- Special Consideration;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.ht>
- 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/dates/>
- Orientation and Transition; <http://intranet.monash.edu.au/infotech/resources/students/orientation/>
- Academic and Administrative Complaints and Grievances Policy;
<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.h>

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