MONASH University
Information Technology

FIT1038
Introduction to information technology

Unit Guide

Semester 1, 2014

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.

Last updated: 27 Feb 2014

Table of Contents

FIT1038 Introduction to information technology - Semester 1, 2014

This unit provides an introduction to information technology architecture. It gives broad coverage of a range of different devices used to build an IT infrastructure for an organisation. For each device, its usage, functionality, internal architecture and connectivity will be explored. The exploration will enable students to see the relevance of different devices to the overall solution provided by an ICT infrastructure.

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 studio

(b.) Additional requirements (all students):

- A minimum of 8 hours of independent study per week for reading, private study and revision.

Additional workload requirements

The mimimum 8 hours of independent study should include:

- Private study, revision, reading: 5 hours per week.
- Working in a group outside tutorial classes to complete assessments: 3 hours per week

Chief Examiner

Dr Campbell Wilson

Campus Lecturer

Caulfield

Javier Candeira

Consultation hours: Tuesdays 9-10h, Wednesdays 10-11h

Tutors

Caulfield

Javier Candeira

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

Previous feedback has highlighted the strengths in this unit. The following are comments by students in 2011 and 2013:

- "This unit has a fresh introduction to IT on every aspects. This is a good deployment for this unit".
- "Learning different uses for what IT is all about gave us an insight into where our careers might take us
  and what really interests us".
- "The tutorial room was by far the best environmental study location I've experienced at Monash."
- "Field trips to the server room and a guest speaker provided a unique change of environment."
- "The range of fun tutorial activities. I really learned a lot!.""The range of different areas of IT we got to look at.
- "[Some of the best aspects of the unit were] the real life examples."
- "Tutorials were really practical and hands-on, as well as relevant".

However, not all feedback was good. The following are critical comments by students in the previous semester:

- "I do not understand the structure of this Unit, as each week's topic is so random and some are too advanced for me as an intro unit, such as the VM topic."
- "More modern day information."
- "Need more hands on work."
- "Shorter tutorial periods. Longer lecture hours. Lecture is too short for the lecturer to effectively go through enough materials for students to understand."
- "The major project needs major improvement mainly because most of the material we learn throughout
  the semester really isn't related/being tested in the major assignment."

As a response to the above comments, for 2012 we made the following changes to the unit:

- We rewrote the course materials to underline the double importance of each topic, both to professional IT practice and to the unit's assessment project.
- In the lectures, we devote more time to more modern, denser topics and immediately practical topics (virtualisation, cloud computing) at the expense of more theoretical and higher level topics (for instance, we now only deal with networking as a subsection of web computing, mobile computing, etc. and not as a topic in itself).
- We have identified the tutorials that didn't work, and removed or shortened these activities. For instance, trying to do an introduction to iOS programming with Xcode was an exercise in frustration for both the tutor and the students. This year we have substituted a simpler programming exercises on iPads themselves.
- The tutorial activities are now much more explicitly oriented towards the project. There are new exercises in information search and sourcing, and also in project structuring and budgeting. The project assignment notes are also clearer.
- The weekly engagements are now a 2-hour lecture and a 2-hour tutorial instead of the previous 1-hour lecture and long, tiresome 3-hour tutorial.

The feedback from 2012 was quite positive, but we've added some other changes in 2013 and 2014:

- More examples for the project.
- USB keys of more failure-prone DVDs
- Better readings for your personal study time.
- Clearer test questions for assesments.
- Some reorganization in the topics.

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, student will be able to:

- understand different components of a typical ICT infrastructure;
- understand the different roles of devices in supporting human activities through exploration of ICT history;
- identify different devices used in ICT, their usage, interfaces, operating systems and connectivity support;
- understand the role of each device in building an ICT infrastructure;
- design a basic ICT infrastructure for a given real world problem.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Lecture: Introduction. What is IT. What is the purpose of this unit. How the unit works, and how we expect you to work. Tutorial: The Assesment Project.	None this week.
2	Lecture: History of Computing. -- Tutorial: museum visit and estimation exercises.	Project groups formed, project topic picked. Try not to miss this tutorial.
3	Lecture: Hardware and Peripherals. -- Tutorial: PC building and power estimation exercises.	Marked laboratory exercises during tutorial add up to 3% of final grade.
4	Lecture: Software and Virtualization. -- Tutorial: Virtualization.	Marked laboratory exercises during tutorial add up to 3% of final grade. -- Project proposal due at start of lecture, it adds up to 15% of final grade.
5	Lecture: Parallell and Cluster computing. -- Tutorial: visit to Monash Cluster.	Unit Test 1 during lecture time, adds up to 10% of final grade. -- Project proposal feedback due in tutorial.
6	Lecture: Web computing, Cloud computing. -- Tutorial: Cloud computing and software as a service.	None this week.
7	Lecture: Cryptography, security. -- Tutorial: Project structure, budget, progress report.	Marked laboratory exercises during tutorial add up to 3% of final grade.
8	Lecture: Touch and Mobile computing. Touch design and programming. -- Tutorial: Wireframing, touch and mobile computing.	Marked laboratory exercises during tutorial add up to 3% of final grade.
9	Lecture: Embedded computing with Arduino. Professional practice. -- Tutorial: Embedded computing with Arduino.	Unit Test 2 during lecture time, adds up to 10% of final grade. Marked laboratory exercises during tutorial add up to 3% of final grade.
10	Lecture: Legal aspects of software (copyright, patents, privacy) -- Tutorial: Legal aspects workshop, project report.	None this week.
11	Lecture: Green computing and the digital divide. -- Tutorial: Project presentation.	Project final presentation during tutorial time. Worth up to 10% of final grade. Project Video aksi due in Tutorial Week 11. It's worth up to 15% of final grade.
12	Lecture: Unit Recap.	Unit Test 3 during lecture time, adds up to 10% of final grade. -- Final report due on Friday, 30 May 2014, 16h.
	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

Lecture and tutorials or problem classes

The two-hour lecture sessions in this unit aim to provide overview of the topic or topics for the week.

The two-hour tutorial/laboratory classes provides practical exercises and activities related to topic for the week. This unit aims to provide students with hands-on experience on the materials. Students are expected to actively participate in the class activities.

Students are also expected to do some independent reading on the topic provided for a given week. The reading will provide background information to the lecture materials and laboratory exercises. These readings are examinable through the unit tests (theory questions).

Assessment Summary

In-semester assessment: 100%

Assessment Task	Value	Due Date
Unit Test 1	10%	Lecture Week 5
Unit Test 2	10%	Lecture Week 9
Unit Test 3	10%	Lecture Week 12
Project Proposal	15%	Week 4, Tuesday, 25 March 2014, 2PM (at the start of lecture)
Project Final Presentation	10%	Tutorial Week 11
Final Report	25%	Week 12, Friday, 30 May 2014, 16h
Small Laboratory Projects	5 x 3% = 15%	Tutorial Weeks 3, 4, 7, 8, 9
Project Video	5%	Tutorial Week 11

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles
(http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurd

Academic Integrity - Please see resources and tutorials at
http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/

Assessment Tasks

Hurdle Requirements

The assessment activities can be divided into individual activities and group activities. Students must achieve at least 40% on each type of activity (and an overall unit mark of 50%) in order to pass the unit.

Individual assessments:

- Unit Tests: 3 x 10% = 30% (weeks 5, 8, 12)
- Participation: 5 x 3% = 15% (class projects, weeks 3, 4, 7, 8, 9)
- Project Final Presentation: 10% (week 11)

Group assessments:

- Project Proposal: 15% (week 4)
- Project Video: 5% (week 11)
- Final Report: 25% (week 12)

Participation

- **Assessment task 1**

  Title:
  Unit Test 1
  Description:
  Test on week 1-4 materials.
  Multiple Choice and Short Answers Questions.
  Weighting:
  10%
  Criteria for assessment:
  Correct answers to questions (demonstrates understanding of the material learned)
  Due date:
  Lecture Week 5

- **Assessment task 2**

  Title:
  Unit Test 2
  Description:

Test on week 5, 6, 7 and 8 materials.
Multiple Choice and Short Answers Questions.
Weighting:
10%
Criteria for assessment:
Correct answers to questions (demonstrates understanding of the material learned)
Due date:
Lecture Week 9

- **Assessment task 3**

Title:
Unit Test 3
Description:
Test on week 8-11 materials.
Multiple Choice and Short Answers Questions.
Weighting:
10%
Criteria for assessment:
Correct answers to questions (demonstrates understanding of the material learned)
Due date:
Lecture Week 12

- **Assessment task 4**

Title:
Project Proposal
Description:
It is a group-based assignment. The proposal contains description of real-life problem that the group will try to find solution using information technology.
Weighting:
15%
Criteria for assessment:
This is a group assesment. However, this doesn't mean everybody will get the same marks. Students will perform a peer assessment task that will determine how the marks are allocated within the group.

The proposal will be assessed on its:

- clarity in describing the problem and the justification of selecting the problem.
- creativity in identifying problem that may be novel but unique.
- clarity in describing how finding the solution to this problem impact individual or society.
- ability to show quantitative data showing the size of the problem and the scope of the required solution.
- ability to describe the problem in terms of the goals, actions and outcomes for the different users of the required solution.

Due date:
Week 4, Tuesday, 25 March 2014, 2PM (at the start of lecture)

- ## Assessment task 5

  Title:
  > Project Final Presentation

  Description:
  > 20 minutes presentation on the proposed solution for the problem defined in the proposal. It is a group presentation, but the activity will be graded individually.

  Weighting:
  > 10%

  Criteria for assessment:
  > Each student will be graded on their own performance during the presentation.
  >
  > Half the points will be awarded on completion of project: the presentation must contain the data in the final report, *not* the data in the initial proposal.
  >
  > The other 50% of the points will be awarded on proper presentation techniques: good use of slides, quantitative information up on the screen, not just read aloud bullet points, etc.

  Due date:
  > Tutorial Week 11

- ## Assessment task 6

  Title:
  > Final Report

  Description:
  > Written report on the proposed solution.

  Weighting:
  > 25%

  Criteria for assessment:
  > This is a group assesment. However, this doesn't mean everybody will get the same marks. Students will perform a peer assessment task that will determine how the marks are allocated within the group.
  >
  > Project will be assessed on the following criteria:
  >
  > - does the proposed solution fit the scope of the probem described in the proposal?
  > - does the budget follow the guidelines given in week 9?
  > - is the report clearly written and structured?
  >
  > More detailed criteria will be given with the project assignment description.

  Due date:
  > Week 12, Friday, 30 May 2014, 16h

- ## Assessment task 7

  Title:
  > Small Laboratory Projects

  Description:
  > Three different projects to be completed during laboratory sessions.

  Weighting:
  > 5 x 3% = 15%

  Criteria for assessment:
  > Completion of the project tasks given during the selected laboratory sessions.

  Due date:

Tutorial Weeks 3, 4, 7, 8, 9

- **Assessment task 8**

   Title:
   Project Video
   Description:
   A video produced by the group promoting their project solution.
   Weighting:
   5%
   Criteria for assessment:
   Several criteria will be taken into consideration when grading the video:

   ♦ Writing and explanation of how the service works.
   ♦ Professionality of conduct in acting in the video.
   ♦ Creativity of concept.

   Note: video quality and production values won't be taken into account. You don't get higher marks for using a professional camera, and you can get top marks with a video shot using your phone. You will however get bad marks for a video that shows no care or preparation, inaudible audio and unitelligible script.
   Due date:
   Tutorial Week 11

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
- Quiz results

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 site for this unit, which you can access via links in the my.monash portal.

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 will be provided with some software they can use in some of the tutorials:

- VirtualBox for Linux, MacOS, PC
- Arduino for Linux, MacOS, PC
- Processing for Linux, MacOS, PC
- a VirtualBox VM image with a working copy of the Debian operating system

Students are expected to have a laptop they can use during those of the tutorials, but there will be a number of PCs available for students who can't bring a laptop to class.

In addition, the students will be using the equipment provided in the lab:

- PC parts and peripherals for the hardware topic
- Ubuntu install DVDs for the software and OS topic
- iPads for the touch computing topic and some research tasks
- arduino kits for the embedded topic

In addition, students will be directed to register at some cloud services with free-to-use features:

- Dotcloud.com
- IFTTT.com
- etc.

Field trips

During week 5 we will visit the computing cluster on floor 6 of building H at Monash Caulfield. Students will be able to see a server room from inside.

Additional subject costs

The students are not expected to incur any additional costs.

Examination material or equipment

This unit doesn't have a final exam. There are, however, three in-semester unit tests. This is the only equipment allowed during these tests:

- Pen or pencil
- Eraser or liquid paper
- Your Monash Student ID
- An unlabeled container for water

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 Commuity 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

Other

Lecturer and Tutor for this unit is Javier Candeira. (javier.candeira@monash.edu)

Consultation times will be communicated via Moodle.