FIT9005
Computer architecture and networks

Unit Guide

Semester 1, 2013

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: 04 Mar 2013
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FIT9005 Computer architecture and networks - Semester 1, 2013

This unit introduces students to fundamentals of computer hardware and software, and networking. The unit provides knowledge of computer structure and operation, including Arithmetic-Logic Unit, computer registers, internal bus, memory; system software, including compilers and operating systems; and computer networking and data communication.

Mode of Delivery

- Caulfield (Day)
- Gippsland (Off-campus)

Contact Hours

2 hrs lectures/wk, 2 hrs tutorials/wk

Workload requirements

For on-campus students, the workload commitments total 12 hours per week during semester as follows:

- Lectures: 2 hours per week
- Practical classes/Tutorials: 2 hours per week
- Private study (revision, homework and practical class preparation): 8 hours per week

Unit Relationships

Prohibitions

FIT1005, FIT1031, FIT9018, FIT9020, BUS4150, BUS5112, CPE4002, CSE4884, CSE9801

Co-requisites

FIT9004 or FIT9017

Prerequisites

Proficiency in basic mathematics.

Chief Examiner

Dr Jefferson Tan

Campus Lecturer
Caulfield
Dr. Abdul Malik Khan
Consultation hours: TBA

Gippsland
Dr. Abdul Malik Khan
Consultation hours: TBA

Tutors
Caulfield
Dr. Abdul Malik Khan
Academic Overview

Learning Outcomes

At the completion of this unit students will have: Developed the ability to:

- understand basic Computer Structure and Operation and demonstrate use of the associated vocabulary;
- demonstrate knowledge of Arithmetic-Logic Unit, computer registers, Internal Bus, Memory, I/O organisations and interfacing standards;
- describe the operation of the CPU and explain how it is used to execute instructions;
- demonstrate an understanding of the basics of operating systems software using examples from File Systems, User Interfaces and Software Development Tools;
- discuss network architecture standards for open systems;
- describe TCP/IP network protocol;
- understand the fundamental functions and architectures of LAN and WAN.

Developed attitudes that enable them to:

- adopt a problem solving approach;
- accept the code of professional conduct and practice;
- act in accordance with best practice, industry standards and professional ethics.

Demonstrated the communication and teamwork skills necessary to:

- cooperate effectively within small groups;
- present their work in various forms.
## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No formal assessment or activities are undertaken in week 0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>LN0 -- Unit Introduction &amp; LN1 -- Introduction to Computer Systems</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>LN2 -- Data Representation and Computer Arithmetic (I)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>LN2 -- Data Representation and Computer Arithmetic (II)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LN3 -- Boolean Algebra and Digital Logic</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LN4 -- Computer Architecture (I)</td>
<td>Tutorial Test 1 (TT1: LN1-LN2) will be held during this week's tutorials</td>
</tr>
<tr>
<td>6</td>
<td>LN4 -- Computer Architecture (II)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LN5 -- System Software</td>
<td>Tutorial Test 2 (TT2: LN3-LN4) will be held during this week's tutorials</td>
</tr>
<tr>
<td>8</td>
<td>LN6 -- Operating Systems (I)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>LN6 -- Operating Systems (II)</td>
<td>Mid-semester Test (MST: LN1-LN5) will be held during this week's lecture</td>
</tr>
<tr>
<td>10</td>
<td>LN7 -- Introduction to Computer Networks</td>
<td>Tutorial Test 3 (TT3: LN5-LN6) will be held during this week's tutorials</td>
</tr>
<tr>
<td>11</td>
<td>LN8 -- The Application Layer</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>LN9 -- The Transport Layer; and The Network Layer</td>
<td>Tutorial Test 4 (TT4: LN7-LN8) will be held during this week's tutorials</td>
</tr>
<tr>
<td>SWOT VAC</td>
<td></td>
<td>No formal assessment is undertaken in SWOT VAC</td>
</tr>
</tbody>
</table>

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

## Assessment Summary

Examination (3 hours): 60%; In-semester assessment: 40%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-semester Test</td>
<td>12%</td>
<td>Wednesday 8 May 2013</td>
</tr>
<tr>
<td>Tutorial Tests 1, 2, 3, 4</td>
<td>28% total (7% each)</td>
<td>Weeks 5, 7, 10 and 12</td>
</tr>
<tr>
<td>Examination 1</td>
<td>60%</td>
<td>To be advised</td>
</tr>
</tbody>
</table>
Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach provides facilitated learning, practical exploration and peer learning.
Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at
http://lib.monash.edu/tutorials/citing/.

Assessment Tasks

Participation

• Assessment task 1

  Title: Mid-semester Test

  Description: Test includes material taught in lectures and tutorials from LN1-LN5. Students are expected to include text and online references cited in the lecture notes and tutorials in preparing for this test.

  Weighting: 12%

  Criteria for assessment: How well principles and procedures are demonstrated in the student's answers.

  Due date: Wednesday 8 May 2013

• Assessment task 2

  Title: Tutorial Tests 1, 2, 3, 4

  Description:
  ♦ Tutorial Test 1: modules from (TT1: LN1-LN2)
  ♦ Tutorial Test 2: modules from (TT2: LN3-LN4)
  ♦ Tutorial Test 3: modules from (TT3: LN5-LN6)
  ♦ Tutorial Test 4: modules from (TT4: LN7-LN8)

  Students are expected to include text and online references cited in the lecture notes and tutorials in preparing for these tutorial tests.

  Weighting: 28% total (7% each)

  Criteria for assessment: How well principles and procedures are demonstrated in the student's answers.

  Due date: Weeks 5, 7, 10 and 12
Examinations

- Examination 1

  Weighting: 60%
  Length: 3 hours
  Type (open/closed book): Closed book
  Electronic devices allowed in the exam: None

Remarks: Students are expected to include text and online references cited in the lecture notes and tutorials in preparing for the exam.

Learning resources

Reading list


Monash Library Unit Reading List
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
- Test results and feedback
- Quiz results
- Solutions to tutes, labs and assignments

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:
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/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 learning system 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.


Recommended Resources


Recommended text(s)


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:

- Plagiarism; http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html
- Special Consideration; http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.html
- 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/
- Graduate Attributes Policy
  http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.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 Sunway 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 Sunway, 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 Sunway 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, Sunway Campus

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 student evaluations of this unit have been very positive. After feedback from Semester 1, 2011, a more detailed coverage of computer architecture was introduced.

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