FIT9018
Computer technology and operating systems

Unit Guide

Semester 1, 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.

Last updated: 21 Feb 2012
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FIT9018 Computer technology and operating systems - Semester 1, 2012

This unit introduces students to the fundamentals of computer systems and the computing environment, using Linux as a case study of a modern operating system. Topics covered include: CPU, memory, storage devices, peripheral hardware, networking fundamentals, operating systems fundamentals, practical Linux considerations including Desktop and Enterprise applications, file systems, shell scripting, client/server applications and system administration.

Mode of Delivery

Caulfield (Day)

Contact Hours

1 hr lecture/wk, 3 hrs laboratories/wk

Workload

For this unit the workload per week is comprised of 1 hour of lectures, 3 hours of practical sessions and a minimum of 8 hours of study outside of classes.

Chief Examiner

Dr Maria Indrawan

Campus Lecturer

Caulfield

Andy Cheng
Academic Overview

Outcomes

At the completion of this unit students will be expected to have understanding of:

- basic computer hardware and architectures;
- process management;
- memory management;
- operating systems architectures;
- basic network protocols;
- network topologies;
- the architecture of Linux;
- usage and administration of Linux systems;
- deployment of Linux in personal and enterprise contexts.

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

Examination (2 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>Lab Tasks</td>
<td>40%</td>
<td>Weekly (in Labs)</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.

- **Laboratory-based classes**
  This teaching approach is practical learning.
Feedback

Our feedback to You

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes

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.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this unit

If you wish to view how previous students rated this unit, please go to

Required Resources

Please check with your lecturer before purchasing any Required Resources. Prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

The lab sessions will require the use of Linux (Ubuntu), installed on bootable USB Keys. The software will be provided to students during their first lab session.
## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>No formal assessment or activities are undertaken in week 0</td>
</tr>
<tr>
<td>1</td>
<td>Hardware I: Introduction to Digital Computers</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>2</td>
<td>Operating Systems I: Introduction to Operating Systems</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>3</td>
<td>Operating Systems II: Memory Management - Virtual Memory</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>4</td>
<td>Operating Systems III: File Management</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>5</td>
<td>Operating Systems III: File Management Continued</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>6</td>
<td>Operating Systems IV: Process Management Concepts</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>7</td>
<td>Operating Systems V: Process Management - Deadlocks and IPC</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>8</td>
<td>Operating Systems VI: More Unix Shell Basics</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>9</td>
<td>Operating Systems VII: Unix Shell Scripting</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>10</td>
<td>Operating Systems VII: Unix Shell Scripting Continued</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>11</td>
<td>Hardware II: Secondary Storage Devices</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td>12</td>
<td>Hardware III: CPU, Memory and System Performance</td>
<td>Lab Tasks</td>
</tr>
<tr>
<td></td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken SWOT VAC</td>
</tr>
<tr>
<td></td>
<td>Examination period</td>
<td>LINK to Assessment Policy:</td>
</tr>
</tbody>
</table>

*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

Assessment Tasks

Participation

• Assessment task 1

  Title:
  Lab Tasks

  Description:
  There are no formal assignments for this unit. However, each lab session has a set of assessable tasks to be completed. These tasks involve installing/configuring the Linux O/S and associated applications.

  Weighting:
  40%

  Criteria for assessment:
  How well tasks are completed during each lab session.

  Due date:
  Weekly (in Labs)

Examinations

• Examination 1

  Weighting:
  60%

  Length:
  2 hours

  Type (open/closed book):
  Closed book

  Electronic devices allowed in the exam:
  None

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.


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)
- 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/key-dates/)
- Orientation and Transition (http://www.infotech.monash.edu.au/resources/student/orientation/)
- Codes of Practice for Teaching and Learning (http://www.policy.monash.edu/policy-bank/academic/education/conduct/suppdocs/code-of-practice-teaching-and-learning.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 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
- 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