FIT3046
Operating environments

Unit Guide

Semester 1, 2012

Last updated: 20 Feb 2012

Table of Contents

FIT3046 Operating environments - Semester 1, 2012

Processes and threads: interprocess communication, scheduling. Deadlock: detection, prevention, avoidance. Memory management: allocation, swapping, virtual memory. Input/output principles and examples: disks, graphical user interfaces, network terminals. File systems: files, directories, disk space management. Security: authentication, cryptography, common attacks, principles of secure system administration. Case studies: Characteristics of major PC operating systems such as Linux and Windows.

Mode of Delivery

- Gippsland (Day)
- Gippsland (Off-campus)
- South Africa (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

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

For on-campus students:
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.

Off-campus students generally do not attend lecture and tutorial sessions, however, you should plan to spend equivalent time working through the relevant resources and participating in discussion groups each week.

Unit Relationships

Prohibitions

FIT2022, GCO2814, GCO3818

Prerequisites

FIT1031 or FIT1001

Chief Examiner

Associate Professor Manzur Murshed

Campus Lecturer

Gippsland

Manzur Murshed

South Africa

Paula Murray

Academic Overview

Outcomes

At the completion of this unit students will:

- know the general purpose and functions of operating systems;
- understand the hardware and software mechanisms used to carry out these functions;
- be familiar with the principal differences between common major operating systems such as Windows and Linux;
- be able to install new operating systems on PC hardware;
- be willing to select operating systems based on their merits rather than their marketing.

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

Assessment Task	Value	Due Date
Assignment 1	20%	16 April 2012
Assignment 2	20%	14 May 2012
Examination 1	60%	To be advised

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach provides facilitated learning, practical exploration and peer 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
- Graded assignments with comments
- Solutions to tutes, labs and assignments

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

Previous feedback has highlighted the following strengths in this unit:

- In-depth knowledge of the lecturers;
- Well-developed materials with full-scale solutions to all tutorial and assignment problems;
- Timeliness and quality of assignment feedback;
- Availability of past lecture recording;
- Quick and helpful replies by the lecturer in the online discussion forums; and
- Dedicated discussion forum for exam preparation with active participation by the lecturer.

Student feedback has also informed the following improvements to this unit:

- Fresh lecture recording to reflect some minor changes in the new edition of the prescribed textbook.

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

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.

Study resources we will provide for your study are:

- A Unit Book containing 10 study guides at MUSO.
- This Unit Information outlining the administrative information for the unit.

- A unit web page at MUSO where lecture slides, weekly tutorial requirements, assignment specifications, sample solutions and supplementary material will be posted.
- Discussion forums at MUSO.

Prescribed text(s)

Prescribed texts are available for you to borrow in the library.

Tanenbaum, Andrew. (2008). *Modern Operating Systems*. (3rd Edition) Prentice-Hall (ISBN: 0-13-600663-9).

Recommended text(s)

Stallings, William. (2009). *Operating Systems: Internals and Design Principles*. (6th Edition) Prentice-Hall (ISBN: 0-13-600632-9).

Silberschatz, Galvin and Gagne. (2005). *Operating Systems*. (7th Edition) Wiley (ISBN: 0-471-69466-3).

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introduction	
2	Processes and Threads	
3	Scheduling	
4	Interprocess Communications	
5	Deadlocks	
6	Memory Management	
7	Memory Management	Assignment 1 due 16 April 2012
8	Input/Output	
9	File Systems	
10	Security	
11	Case Study 1: Linux	Assignment 2 due 14 May 2012
12	Case Study 2: Windows Vista and Revision	
	SWOT VAC	No formal assessment is undertaken 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 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

Assessment Tasks

Participation

- **Assessment task 1**

    Title:
    Assignment 1
    Description:
    Students will be required to perform a number of tasks involving both analytical and
    practical skills from the syllabus covered in Study Guides 1-4. Detailed solutions will be
    released after the cut-off date, which is one week after the due date.
    Weighting:
    20%
    Criteria for assessment:
    Individual assignment submission will be assessed on

    - The workout details and accuracy for numerical problems;
    - The quality of explanation and the level of understanding for non-numerical
      problems;
    - How well algorithms are written using pseudocodes; and
    - Understanding the outcome of algorithms on given scenarios.

    More detailed criteria will be released in MUSO.
    Due date:
    16 April 2012

- **Assessment task 2**

    Title:
    Assignment 2
    Description:
    Students will be required to perform a number of tasks involving both analytical and
    practical skills from the syllabus covered in Study Guides 5-7. Detailed solutions will be
    released after the cut-off date, which is one week after the due date.
    Weighting:
    20%
    Criteria for assessment:
    Individual assignment submission will be assessed on

    - The workout details and accuracy for numerical problems;
    - The quality of explanation and the level of understanding for non-numerical
      problems;
    - How well algorithms are written using pseudocodes; and
    - Understanding the outcome of algorithms on given scenarios.

More detailed criteria will be released in MUSO.
Due date:
14 May 2012

Examinations

- **Examination 1**

Weighting:
60%
Length:
3 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.

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-po
- 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/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. 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 Commuity Services at 03 55146018 at Sunway