MONASH University
Information Technology

FIT3046
Operating environments

Unit Guide

Semester 1, 2011

Table of Contents

FIT3046 Operating environments - Semester 1, 2011

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

For on campus students, workload commitments are:

- two-hour lecture;
- two-hour tutorial/laboratory (requiring advance preparation); and
- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.

You will need to allocate up to 5 hours per week in some weeks, for use of a computer,including time for newsgroups/discussion groups.

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

FIT1001

Chief Examiner

Manzur Murshed

Campus Lecturer

Gippsland

Manzur Murshed

South Africa

Neil Manson

Tutors

Gippsland

Gour Karmakar

Learning Objectives

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%	18 April 2011
Assignment 2	20%	16 May 2011
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

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

Required Resources

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 groups at MUSO.

Unit Schedule

Week	Date*	Activities	Assessment
0	21/02/11		No formal assessment or activities are undertaken in week 0
1	28/02/11	Introduction	
2	07/03/11	Processes and Threads	
3	14/03/11	Scheduling	
4	21/03/11	Interprocess Communications	
5	28/03/11	Deadlocks	
6	04/04/11	Memory Management	
7	11/04/11	Memory Management	
8	18/04/11	Input/Output	Assignment 1 due 18 April 2011
		Mid semester break	
9	02/05/11	File Systems	
10	09/05/11	Security	
11	16/05/11	Case Study 1: Linux	Assignment 2 due 16 May 2011
12	23/05/11	Case Study 2: Windows Vista and Revision	
	30/05/11	SWOT VAC	No formal assessment is undertaken SWOT VAC

*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

Assessment Policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit

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.
    Weighting:
    20%
    Criteria for assessment:
    The specification and marking criteria will be released in MUSO four teaching weeks in advance of the due date. Solutions will be released after the cut-off date, which is one week after the due date.
    Due date:
    18 April 2011

- **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.
    Weighting:
    20%
    Criteria for assessment:
    The specification and marking criteria will be released in MUSO four teaching weeks in advance of the due date. Solutions will be released after the cut-off date, which is one week after the due date.
    Due date:
    16 May 2011

Examinations

- **Examination 1**

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

Assignment submission

Assignment coversheets are available via "Student Forms" on the Faculty website:
http://www.infotech.monash.edu.au/resources/student/forms/
You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration
section is signed.

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

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.

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 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. 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://adm.monash.edu/sss/equity-diversity/disability-liaison/index.html;
- Telephone: 03 9905 5704 to book an appointment with a DLO;
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus.

Prescribed Text

Tanenbaum, Andrew, *Modern Operating Systems*, 3rd edition, Prentice-Hall, 2008, ISBN 0-13-600663-9.

Recommended Readings

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

Silberschatz, Galvin and Gagne, *Operating Systems Concepts*, 7th edition, Wiley, 2005, ISBN 0-471-69466-3.