



MONASH University
Information Technology

FIT3046
Operating environments

Unit Guide

Semester 1, 2015

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FIT3046 Operating environments - Semester 1, 2015

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

South Africa (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 laboratory

(b.) Study schedule for off-campus students:

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

(c.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

See also Unit timetable information

Unit Relationships

Prohibitions

FIT2022, FIT2070, GCO2814, GCO3818

Prerequisites

FIT1031 or FIT1001

Chief Examiner

Mr Neil Manson

Campus Lecturer

South Africa

Igor Monga Mwala

Consultation hours: To be advised.

Tutors

South Africa

To be advised

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 following strengths in this unit:

- In-depth knowledge displayed by 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>

Academic Overview

Learning 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.

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 20 April 2015
8	Input/Output	
9	File Systems	
10	Security	
11	Case Study 1: Linux	Assignment 2 due 18 May 2015
12	Case Study 2: Windows Vista and Revision	
	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

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

Assessment Summary

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

Assessment Task	Value	Due Date
Assignment 1	20%	20 April 2015
Assignment 2	20%	18 May 2015
Examination 1	60%	To be advised

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurdles>)

Academic Integrity - Please see resources and tutorials at

<http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/>

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 on Moodle.

Due date:

20 April 2015

• 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;

Assessment Requirements

- ◆ 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 on Moodle.

Due date:

18 May 2015

Examinations

• Examination 1

Weighting:

60%

Length:

3 hours

Type (open/closed book):

Closed book

Electronic devices allowed in the exam:

None

Learning resources

Monash Library Unit Reading List (if applicable to the unit)

<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
- Graded assignments with comments
- 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: <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 electronic submission). 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 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.

Study resources we will provide for your study are:

- A Unit Book containing 10 Study Guides on Moodle.
- This Unit Guide outlining the administrative information for the unit.
- A unit web page on Moodle where lecture slides, weekly tutorial requirements, assignment specifications, sample solutions and supplementary material will be posted.
- Discussion forums on Moodle.

Prescribed text(s)

Limited copies of 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).

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

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 Community 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