AUCKLAND INSTITUTE OF STUDIES NEW ZEALAND

COURSE OUTLINE

COMP621

OPERATING SYSTEMS

PREREQUISITES:
COMP501 Fundamentals of Information Technology
OR
COMP510 Fundamentals of Information Technology

NZQF Level: 6
Credits:15

LECTURER:	Saranya Selvarangan
Room:	A118
Email:	saranyas@ais.ac.nz
Contact hour:	Monday 12:00pm – 01:00pm Also, outside of this time by appointment

COURSE AIM

The aim of the course is to cover the core concepts of operating systems. Students will study these concepts by deploying them in a simulation environment. Students will be able to install, deploy and configure operating systems.

LEARNING OUTCOMES

The learners will be able to:
1. Demonstrate an in-depth knowledge of the core concepts of operating systems.
2. Explain resource management techniques and address the issues related to performance, fairness, synchronization, and deadlocks.
3. Deploy and test operating systems concepts like scheduling algorithms in a simulation environment.
4. Install, deploy, configure, and maintain Windows and/or Linux operating systems.
5. Develop workplace soft-skills including carrying out individual research and/or delivering oral presentations.

COURSE DURATION

The course will be conducted over a 14-week period with a typical teaching week consisting of 5 hours of classes.
Classes will be held at the following times:

Thursday	03:00 PM – 05:00 PM	R103
Friday	01:00 PM– 4:00 PM	R103

100% attendance is an AIS and Immigration New Zealand requirement.

LEARNING HOURS

The course involves 150 hours of learning: 60 hours of structured in-class learning and 90 of associated learning activities such as reading course materials, preparing for class, working on assignments, or peer group discussions and reviewing feedback or material. An indicative time allocation is shown below.

Activity	Hours
Structured learning and teaching classes	60
Reading course materials	25
Working on assignments	37
Preparation for assessments	28
TOTAL	150

COURSE CONTENT

Week # Starting	Session	Content
Week 1 02 February 2026	1 2	• Course Introduction • Introduction to operating systems and their structures
Week 2 09 February 2026	3 4	• Linux operating system; installing, deployment, configuration Processes; concepts, scheduling
Week 3 16 February 2026	5 6	• Threads; overview, multicore programming, multithreading models
Week 4 23 February 2026	7 8	• CPU Scheduling; scheduling criteria, algorithm, multiprocessor, real-time CPU
Week 5 02 March 2026	9 10	• Process synchronization (critical-section problem) • Revision for Mid-Semester Test
Week 6 09 March 2026	11 12	• **Mid-trimester Test** • Process synchronization; hardware support for sync, semaphores
Week 7 16 March 2026	13 14	• Deadlock; concepts, characterization, handling, prevention, detection, recovery
Week 8 23 March 2026	15 16	• Main memory; contiguous memory allocation, swapping, segmentation, paging
Week 9 30 March 2026	17 18	• Virtual memory; demand paging, page replacement, allocation of frames
Week 10 07 April 2026	19 20	• Mass-storage structures; overview, scheduling, management, structures

Week 11 13 April 2026	21 22	• File System; Interface, Implementation I/O systems
Week 12 20 April 2026	23 24	**Group Oral Presentation** **Revision**
Week 13 28 April 2026	**25** **26**	**Project Submission**
Week 14 04 May 2026	**27** **28**	**Course Finalisation Week**

The dates following week numbers are for the Monday of that week.
The following are public holidays and there will be no classes or assessments on these days:

- Friday, 06 February 2026, Waitangi Day
- Friday, 03 April 2026, Good Friday
- Monday, 06 April 2026, Easter

Note: The above schedule is provided as a general guide and may be subject to minor variation.

READINGS AND RESOURCES

Your textbook will be issued in e-book format, not as a hard copy. You will receive instructions for using a code to download your e-book onto your device. **Please note that e-books, once downloaded, cannot be returned.** If there is any possibility that you might change your course, do not download the e-book; wait until you have made your final course selection decisions for the trimester before downloading any e-books. If you download the e-book for a course, and then withdraw from the course, you will be required to pay extra for the e-book for the new course.

Online Learning Management System
The AIS learning management system is Moodle which can be accessed at the following address: http://moodle.ais.ac.nz/

Moodle is one of the ways AIS optimises your learning experience. It is a platform where you can manage your learning. Please take the time to familiarise yourself with each section of Moodle so that you feel comfortable navigating yourself around. Teaching materials and assessments are all normally distributed via Moodle. You should access Moodle before, and routinely throughout, your course.

Prescribed text(s)
None

Recommended reading:
Galvin, P. B., Silberschatz, A., Gagne, G. (2018), *Operating System Concepts*, 10/E, Wiley ISBN: 978-1-119-32091-3

Deitel, H.M., Deitel, P., Choffnes, D.R. (2003), *Operating Systems*, 3/E, Prentice Hall ISBN 978-0-131-82827-8

You can access all AIS Library study and research resources, including relevant databases, from the AIS Library website (https://www.ais.ac.nz/student-life/library).

Resources:

- https://www.tutorialspoint.com/operating_system/index.htm

COURSE ASSESSMENTS

The assessments for this course are as follows:

Title	Course Marks %	Release Date	Due date	Learning Outcomes	Corresponding Course Content
Group assignment	35%	16/02/26 (Week 03)	28/04/26 (Week 13)	1,2,3,4,5	CLASS# 1 – 20
Mid-trimester test	25%	13/03/26 (Week 06)		1,2	CLASS# 1 - 10
Individual Project	40%	16/02/26 (Week 03)	13/04/26 (Week 11)	1,2,3,4,5	CLASS# 1 – 21
Total	100%				

Submission of written assignments is made through the submission boxes in Moodle.

You have the option of submitting written assessments as draft submissions to check for similarity matches prior to making final submissions. Note that similarity reports may take 24 hours to generate.

Ensure you follow academic citation and referencing requirements, as failure to do so may invoke penalties. Using APA (7th ed.), you are also required to reference the use of any tools / software / applications used.

Upon submission, your assignment will be checked for copied materials as well as the use of AI (artificial intelligence), with penalties to be applied where appropriate and if not referenced.

It is strongly recommended that you attend APA Referencing Skills and Avoiding Plagiarism workshops and attempt the Good Referencing Test (GRT) before you submit your first assessment.

Studiosity is available to all AIS students to submit assignment drafts and obtain feedback on their academic writing, referencing, grammar and structure. You can access Studiosity, sign up and submit your drafts at: https://moodle.ais.ac.nz/course/view.php?id=746

Passing Requirements
You must gain an overall mark of 50% or higher to pass this course.

LATE SUBMISSION OF ASSIGNMENTS

The due date(s) are as stated above. Any assignment submitted late – after 4.00pm on the due date for submission, or approved extension date – is subject to a 5% deduction of the available marks from the marks awarded for each successive 24-hour period (or part period) that has elapsed, and will receive a mark of zero if submitted after 96 hours have elapsed. If you have concerns about your ability to meet a deadline, you are advised to consult with your lecturer before the due date.

See the guidelines for your programme in the AIS Student Handbook for more details should you require an assignment extension.

LEARNING SUPPORT

Studying at this level requires awareness and understanding of academic requirements. Several learning support options are available:

1. Attend the Learning Skills Workshops – a monthly timetable will be provided via Moodle and email.
2. Consult with your course lecturer, either in person, via e-mail, or via Moodle.
3. Contact your class representative.
4. Contact the Learning Skills Advisor for individual consultations and help (via Teams or in the Library) – Tamendi Pranish (tamendip@ais.ac.nz)
5. Visit or contact the AIS Library (ais-library@ais.ac.nz)
6. Contact Student Support Services (almau@ais.ac.nz)
7. Contact the Head of Department, Dr Wikus Erasmus (wikuse@ais.ac.nz)

Please refer to the AIS Student Handbook for other support services that are available. The handbook can be found on the AIS website (https://www.ais.ac.nz/student-life/student-handbook).

Any copied materials on Moodle are copied under the PTE NZ Copyright Licence. These materials have been copied solely for educational purposes at AIS. Please use the materials for your own learning in this course.

When lessons are recorded, they will be posted on Moodle for your personal use only and are not for redistribution.

It is not acceptable for students to record lessons without the full knowledge of all the people in the classroom. Please ask permission before recording classes. Provided it is reasonable, permission will normally be given.

We recommend that you retain your course outlines for future reference as they are subject to modification.