2309 SE340 Course Outline

Subject Code	:	**SE340**
Subject Title	:	**Operating Systems**
Level	:	3
Credits	:	3 credits
Teaching Activity	:	Lecture/Tutorials 45 hours
Prior Knowledge*	:	LP102 Computer Programming • C Programming • Function calls • Pointers LP002 Data Structures • Linked list • FIFO Queue • Stack CO101 Principle of Computer • Computer organization • Computer architecture
Class Schedule	:	

Class	Week	Time	Classroom	Date
D1	FRI	9:00-11:50	C309	2023/09/04-2023/12/17

Instructor	:	(Milton) Chi-Chong Wong
E-mail Address	:	ccwong@must.edu.mo
Office	:	A306b
Office Hour	:	Monday: 17:30 - 19:30 Tuesday: 17:00 - 19:00 Wednesday: 13:30 - 17:30 Friday: 12:00 - 14:00

Course Description

This subject aims to introduce the concepts and principles of operating systems. It covers process/thread and process management, concurrency and scheduling, memory management, I/O management and disk scheduling, file management, etc. Some internal principles of Windows and UNIX/LINUX will also be presented. The students are requested to understand the concepts and principles of operating systems.

Reference Books (Not required, lecture materials are self-contained)

1. Andrew S. Tanenbaum and Herbert Bos, “Modern Operating Systems”, (4th Edition) Prentice Hall, 2014.

2. Anderson Thomas, and Mike Dahlin, "Operating Systems: Principles and Practice", (2nd Edition) Recursive books, 2014.

INTENDED LEARNING OUTCOMES

Upon successful completion of this subject, students will be able to:

1. Understand various motivations and ways for operating systems
2. Evaluate the impacts of operating systems
3. Analyze different approaches in operating systems
4. Ability to conduct a literature survey on operating systems
5. Ability to appreciate the relevant literature in association with operating systems
6. Ability to generate solutions to solve the problems in operating systems
7. Simulate some components in operating systems

Weekly Schedule

Week	Contents	Hours	Teaching Method
1	Overview of Operating systems	5	Lecture
2	Process	5	Lecture/Tutorial
3	Process and Kernel	5	Lecture/Tutorial
4 - 5	Process Scheduling	7	Lecture/Tutorial
5 - 6	Inter-Process Communication (synchronization)	8	Lecture/Tutorial
7	Threads	5	Lecture/Tutorial
8	User-Space Memory	5	Lecture/Tutorial
9 - 10	System-Level Memory	8	Lecture/Tutorial
10 - 11	File system basics	5	Lecture/Tutorial
11 - 13	File system layout	9	Lecture/Tutorial
13 - 14	Details of Ext2/3	8	Lecture/Tutorial
15	Review	5	Lecture/Tutorial

TEACHING AND LEARNING APPROACH

The teaching and learning approach of this subject is to help students in understanding the principles of operating systems. Students are expected to play an active role in class discussion for analyzing the significance and implications of various strategic and operational decisions for the success of operating systems.

Class discussions are conducted in a combination of lecture, in-class (tutorial) exercise, and case study. Audio and visual aids such as Flashes will be used to expand students' understanding on relevant topics.

Exercise, tutorial, and discussion are used to promote interaction among students for encouraging intellectual thinking, application of analytical skills and generating critical feedback in case study and analysing problems under specific situations.

ASSESSMENT APPROACH

Assessment method (Tentative)	% Weight
1. Attendance	**10%**
2. In-Class Exercises/Written Exercises/Quiz	**20%**
3. Practical	**20%**
4. Final Exam	**50%**
Total	**100 %**

Guideline for Letter Grade:

Marks	Grade
93 - 100	A+
88 - 92	A
83 - 87	A-
78 - 82	B+
72 - 77	B
68 - 71	B-
63 - 67	C+
59 - 62	C
56 - 58	C-
53 - 55	D+
50 - 52	D
49 -	F

Notes:

Students will be assessed on several assessment items (i.e., attendance, in-class exercise, assignment, quiz, and the final exam.).

The in-class exercise and practical are used to evaluate the student's ability to solve spot problems and to make learning lively.

The quiz, and final exam evaluate the students' understanding of the concepts of Operating Systems.