Course Syllabus
Assumption University
Vincent Mary School of Engineering, Science and Technology
Bachelor of Science Program in Computer Science (BSCS)
Semester 2/2024

COURSE INFORMATION	
Course Number:	**CSX3008**
Course Title:	Operating Systems
Credits:	3
Pre-requisite:	None
Status:	Major Required Course
Classroom:	**SLM0308**
Day and Time:	**Wednesday** 13:30-16:30 (541), **Thursday** 13:30 -16:30 (542)
Material Portal:	MS Team File

COURSE INSTRUCTOR	
Instructor:	Asst. Prof. Dr. Anilkumar K.G
Email & Mobile No:	Office: VMES0401, aGopalakrishnan@.au.edu , 0891351711

COURSE OUTLINE

Course Description: Components and functions of operating systems, uni-programming, multi-programming, multitasking, multithreading, resource management functions of operating systems, process scheduling algorithms, device management algorithms, virtual memory management, and classical problems related to operating systems such as deadlock, starvation, and concurrency.

Learning Objectives: Upon completion of this subject, students should be able:

1. To know the components and functions of an operating system
2. To have the ability to analyze the issues related to operating systems
3. To work out the tradeoffs involved in designing a modern operating system

Learning Contents:

Week	Topic
01	Operating System Overview
02	Process Description and Control
03	Process Description and Control(continue)
04	Threads management
05	Threads management (continue)
06	Process Synchronization
07	CPU scheduling ***Programming Assignment* 1 *Presentation***
08	**Quiz I**
09	**Midterm Examination**
10	Deadlock
11	Memory Management
12	Virtual Memory
13	Input and Output management
14	***Programming Assignment 2 Presentation***
15	***Programming Assignment 3 Presentation*** **Quiz II** **Final Examination**

Evaluation:

Programming Assignment1:	8%
Programming Assignment2:	8%
Class Assignments:	10%
Quiz1	7%
Quiz II	7%
Midterm Examination:	20%
Final Examination:	40 %

COURSE MATERIALS

Main Textbook: **Operating System Concepts**, 9th Edition, Abraham Silberschatz, Peter B. Galvin, Greg Gagne, Wiley (ISBN: 978-1-118-09375-7)

Supplementary Textbook: **Operating Systems**: Internals and Design Principles 8th Edition, William Stallings, Prentice Hall (ISBN: 978-0-133-80591-8)

COURSE POLICIES

1. Students must have at least 80% of class attendance to be eligible for the final examination.
2. If a student is absent from more than 3 classes without any relevant reason, then they should withdraw from the course immediately.
3. The student who misses the final exam will receive a grade based on their total marks. In this case, the **'F'** grade (if any) will replace with a '**W**.'

ASSESSMENT APPEAL POLICY

For any assignments/projects and examination(s) (EXCLUDING final examination), the lecturer will announce scores and discuss with students about solutions approximately within 1-3 weeks after the submission deadline and finishing grading. Students may request the lecturer for an assessment appeal, if any, within 1 week or as specified by the appeal's deadline.

PROGRAMMING ASSIGNMENT OUTLINE			
Programming Assignments:	**No.**	**Instruction**	**Marks**
	1	Write a simulation program to simulate the behavior of **FCFS** and **Round Robin** CPU scheduling algorithms (the simulations must be based on the *arrival time* of each process).	8%
	2	Write a simulation program to show the behavior of a **banker's algorithm** for multiple resource unit allocation problems. The program should indicate whether a solution ended in a ***safe state*** or not. And also, the program should be able to collect input datasets from either a text file or a random generator.	8%
		Total	**16%**
Programming Assignments Evaluation Criteria:	Grading of a presented assignment is based on the following criteria: The program accepts all input(s). Ultimately Program shows the progress of the algorithm **step-by-step** The program offers all output(s) correctly The program provides a clean and simple UI design (Submit the completed assignment along with its full source code via **e-mail**)		