United International **University** (UIU)

Dept. of Computer Science & Engineering (CSE)

COURSE OUTLINE

Course Code: CSI 309 Course Title: Operating System Concepts

Trimester: Fall 2018

Instructor Md. Adnanul Islam

Classes Sunday & Wednesday

Counseling hr Saturday & Tuesday: 8.30-10.00 AM & 1.15-2.00 PM (426)

Sunday & Wednesday: 8.30-11.30 AM & 1.15-2.00 PM (426)

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Text Book "Modern Operating Systems" by Andrew S. Tanenbaum

"The Design of the UNIX OS" by Maurice j. Bach

Quiz/Class Test There will be total of three quizzes (20-25 minutes long each). The best two will be considered.

Test Policy If you are absent from a test, and you have not spoken to me personally beforehand, your grade for the test will be zero.

Grading The course grade will be determined from a weighted average of the quizzes, homework assignments, mid-term exams and the final. Percentage of weightage of the tests/exams is as follows:

Attendance	5%
Class Test	20%
Assignment	5%
Mid-term Exam	30%
Final Exam	40%

Course Grade The following scale will be used to convert numerical grades to letter grades:

Letter Grade	Marks	Grade Point	Letter Grade	Marks	Grade Point
A (Plain)	90-100	4.0	C+ (Plus)	70-73	2.33
A- (Minus)	86-89	3.67	C (Plain)	66-69	2.00
B+ (Plus)	82-85	3.33	C- (Minus)	62-65	1.67
B (Plain)	78-81	3.00	D+ (Plus)	58-61	1.33
B- (Minus)	74-77	2.67	D (Plain)	55-57	1.00

Objectives:

The objective of this course is to teach you the concepts and principles that underlie modern operating systems. In this course you will learn about-

1. processes and processor management
2. concurrency and synchronization
3. memory management schemes
4. file system and secondary storage management
5. security and protection

Outcome:

After this course student will be able to-

1. Understand fundamental operating system abstractions, how it can be used in the development of application programs and can be implemented,

2. Understand the principles of concurrency and synchronization, and apply them to write correct concurrent programs/software

3. Understand basic resource management techniques and principles and how they can be implemented.

Lecture Plan

Lecture No	Topics
1	Introduction, Course Overview
2	Operating System- its role in computer systems; Operating system concepts; Operating system structure;
3-4	The Structure of Processes, System Call
5	**Review and First Class Test ***
6-8	Memory Management(Swapping, Paging, Segmentation, Virtual Memory)
9-12	Scheduling(Scheduling in Batch Systems, Interactive Systems, Real-Time Systems, Thread Scheduling)
13	**Review and Second Class Test***
14	**Mid-term Exam**
15-17	Process and Threads (process model and implementation, Threads, Inter-Process Communication (IPC), Classical IPC Problems)
18	**Review and Third Class Test**
19-20	Deadlock(Resource allocation And Deadlock, Deadlock Detection, Avoidance, Prevention And Recovery)
21-22	Internal representation of Files; File Systems (files, directories, File System Implementation)
23-24	Introduction to the Kernel, The Buffer Cache *
25	**Review**