

Course Outline (*please complete as appropriate*)

COURSE TITLE	Operating Systems
NAME OF LECTURER	Murad Khan

COURSE DESCRIPTION

This course will introduce students to the principles of modern operating systems. Our focus will remain on generic operating system concepts. However, we will introduce the operating concepts with the help of windows programming and windows operating system concepts. The course will begin with presenting an overview of the structure of an operating system followed by a detail explanation of the modern operating system structure and its theory of evaluation throughout the history of computing. Over the course of the subsequent units, we will also discuss the various parts and components of modern and new operating system such as process, threads, memory management, etc. The class will conclude with a discussion of various system-related security and network communication issues.

RECOMMENDED READINGS

Operating System Concepts by Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne, 9th Edition
Recommended/ Required Reading
Tanenbaum, "Modern Operating Systems", 3rd. Ed. Prentice Hall, 2007W.
Stallings, "Operating Systems: Internals and Design Principles" 6th Ed., Prentice Hall, 2008.

TEACHING METHODS

Lecture, discussion, question and answer, review case studies, exercises, assignments

ASSESSMENT METHODS

Quiz, Assignments, Class Participation, Mid and Final Term

CLASS TOPICS (*each class is 3 hrs*)

Part 1: Overview

1. Introduction
2. Operating-System Structures

Part 2: Process Management

3. Processes and their concepts in modern operating systems
4. Threads and Multi-Threading
5. Process Synchronization
6. CPU Scheduling
7. Deadlocks

Part 3: Memory Management

8. Main Memory
9. Virtual Memory

Part 4: Storage Management

10. Mass-Storage Structure
11. File-System Interface
12. File-System Implementation

13. I/O Systems

Part 5: Protection and Security

14. Protection

15. Security

Part 7: Advance Topics

16. Virtual Machines

17. Distributed Systems

Part 6: Case Studies

18. The Linux System

19. Windows 7

SPECIAL COMMENTS

At the end of this course students may be able to:

- Learn the principles of operating systems
- Understand relationship and link between subsystems and components of a modern operating system
- Development and designing of multi-process and multi-threaded applications both theoretically and practically
- Understanding of efficient aspects of using system resources (processor, memory, disk).

해외우수교수초빙강좌 수강 제한 및 유의사항 (Notice for KNU students)

- a. 2018년 8월 졸업예정자(조기졸업자 포함)
- b. 국내 타대학 교류학생
- c. 재이수의 경우 개강 전 수강취소만 가능(7.4-7.5에 한함)
- d. 해외우수교수초빙강좌 수강과목은 2018.2학기 수강꾸러미로 신청불가