CPIT-260 Syllabus

Catalog Description

CPIT-260 Operating Systems
Credit: 3 (Theory: 3, Lab: 0, Practical: 1)
Prerequisite: CPIT-210 , CPCS-204
Classification: Department Required

The objective of this course is to provide an introduction to the basic concepts of modern operating systems. The course covers the design of operating systems and the way they work, in terms of efficiency and reliability, in addition to comparing between the techniques used inside the operating systems, in terms of time and space complexity. Topics include the basic components of different operating systems, organizing and managing processes, computing synchronization, different scheduling techniques for processors, storage devices, memory management, file systems, and input/output systems.

Class Schedule

Meet 50 minutes 3 times/week or 80 minutes 2 times/week

Lab/Tutorial 90 minutes 1 times/week

Textbook

Abraham Silberschatz, Peter B. Galvin, Greg Gagne, , "Operating System Concepts", Wiley;(2012-12-17)

ISBN-13 9781118063330   **ISBN-10** 1118063333

Grade Distribution

Week	Assessment	Grade %
3	Graded Lab Work 1	2
4	Quiz 1	1.5
7	Exam 1	15
7	Graded Lab Work 2	2
9	Graded Lab Work 3	2
9	Quiz 2	1.5
10	Graded Lab Work 4	2
11	Exam 2	15
13	Quiz 3	2
13	Graded Lab Work 5	2
14	Lab Exam	15
14	Group Project	10
15	Comprehensive Final Exam	30

Last Articulated

April 5, 2018

Relationship to Student Outcomes

a	b	c	d	e	f	g	h	i	j	k	l	m	n
x	x							x	x				

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Identify the basic components of operating systems especially for batch and timesharing systems. (a)
2. Investigate the design issues associated with time sharing operating systems. (a)
3. Describe user requests to get services from operating systems in time sharing systems. (b)
4. **Discuss various process management concepts including scheduling, synchronization, deadlocks for concurrent processes execution. (a)**
5. **Explore concurrent processes execution problems and solutions using Semaphores. (i)**
6. **Discover memory management schemes including virtual memory. (i)**
7. Analyze system resources management among sharing processes with different goals and intends. (b)
8. **Investigate issues related to file system interface, implementation and disk management. (i)**
9. Describe the mechanisms to protect processes from each other and also protect the operating system from them. (a)
10. Differentiate between various types of operating systems including Dos, Unix and Windows. (a)
11. Interpret Trashing phenomena in time sharing operating system. (b)
12. Develop efficient application programs as result of understanding system behavior. (i)
13. Use operating system with increased awareness especially windows. (b)
14. Diagnose system problems to increase hardware utilization. (b)
15. Differentiate between FAT and UNIX file systems. (b)
16. **Simulate programmatically process scheduling or memory management algorithms. (j)**

Coordinator(s)

Dr. Reda Salama, Associate Professor

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Topics Coverage Durations

Topics	Weeks
Operating System Overview	1
Overview (Cont.)	1
Processes	2
Scheduling algorithm	2
Processes Synchronization	2
Memory management	2
Virtual memory	1
File system	2
I/O subsystem	1
General review	1