

Operating Systems and Security

Basic Course Information			
Course Number	32005101	Subject Category	Compulsory (C)
Class Format	Lecture	Credit Type and Number of Credits	1
Department	Computer	Student Category	Year 3
Period of Study	Semester 2	Classes per Week	1
Required Materials	Hardware: Laptop and Tablet. Handouts will be distributed.		
Instructor	Mr. Robbawash T: 011-25350000 Email: robbawash@uow.edu.sa		

Course Objective
 The subject provides students with fundamental knowledge of operating systems and their connection to security. The subject covers a range of key topics, including: 1) Introduction to OS, 2) Processes and Threads, 3) Interprocess communication, 4) Process Scheduling, 5) Memory Management, 6) Input/Output, 7) File Systems, 8) Operating System Security. Students engage in a dynamic learning experience that combines lectures and group work to foster a comprehensive understanding of these subjects.

Evaluation/Pubric	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Understanding the Functions of Operating Systems and related technologies	To be able to understand and explain the functions of Operating Systems and related technologies	To be able to understand the functions of Operating Systems and related technologies	Not to be able to understand the functions of Operating Systems and related technologies
Understanding the interprocess communication and being able to apply those knowledge to their software development	To be able to understand and explain the interprocess communication and to be able to apply those knowledge to their software development	To be able to understand and explain the interprocess communication	Not to be able to understand the interprocess communication
Understand threats for OS and being able to explain how to protect OS from threats	To be able to Understand threats for OS and to be able to explain how to protect OS from threats	To be able to Understand threats for OS	Not to be able to Understand threats for OS

- Relationship with Learning Outcomes**
- C(1) Ability to operate and administer the computer software and hardware
 - C(2) Ability to understand the operating system and to develop software to solve specific problems.
 - C(4) Ability to understand the computer network system and security methods and to implement the safe system within networks, servers, computers, and connected devices.

Teaching Method	
Outline:	Lecture and Practice
Class Format:	Lecture, Practice, Quiz, Group work, Homeworks and Reports
Please Note:	Students are expected to actively participate in class and collaborate effectively with other group members through clear communication. Modern Operating Systems by Andrew S. Tanenbaum will be referenced in the class. *

Course Plan		Goals	Related MCC
Semester 2	Contents and Method of Course		
1st week Nov. 10	iOnline Introduction and Orientation	To be able to understand and explain what students learn in this subject	V-D B- 62
2nd week Nov. 17	iOnline Introduction to Operating System	To be able to understand and explain the main functions of OS. To be able to understand and explain the various types of OS	V-D B- 62
3rd week Nov. 24	Processes and Threads	To be able to understand and explain what process and thread are	V-D B- 62
4th week Dec. 1	InterProcess communication (IPC)	To be able to understand InterProcess communication To be able to explain different types of approaches to IPC	V-D B- 62 V-D B- 64
5th week Dec. 8	Practice and Review (1)	To be able to review what students learned To be able to use the knowledge to consider the problems	V-D B- 62
6th week Dec. 15	Process Scheduling	To be able to understand and explain process scheduling To be able to explain data structure used in the process scheduling	V-D B- 62
7th week Dec. 22	Practice and Review (2)	To be able to review what students learned To be able to use the knowledge to consider the problems	V-D B- 62
8th week Dec. 29	School Event		
9th week Dec. 27-Jan.3	Mid-term Examination *		
10th week Jan. 12	Memory management (1)	To be able to understand and explain the main concept of memory management	V-D B- 62 V-D B- 65
11th week Jan. 19	Memory management (2)	To be able to understand and explain the memory virtualization	V-D B- 62 V-D B- 63 V-D B- 65
12th week Jan. 26	Input/Output	To be able to understand and explain the main concept of Input/Output To be able to understand and explain interrupt control	V-D B- 62
13th week Feb. 2	Practice and Review (3)	To be able to review what students learned To be able to use the knowledge to consider the problems	V-D B- 62
14th week Feb. 9	File Systems (1)	To be able to understand and explain file systems	V-D B- 62
15th week Feb. 16	File Systems (2)	To be able to understand and explain file structures To be able to understand and explain various functions related to file systems and directories	V-D B- 62 V-D B- 66
16th week Feb. 23	Security	To be able to understand and explain threats for OS To be able to explain how to protect OS from threats	V-D B- 62 V-D B- 101
17th week March 1	Practice and Review (4)	To be able to review what students learned To be able to use the knowledge to consider the problems	V-D B- 62
18th and 19th weeks March 8-15	Final Examination		
20th week March 22	Return Exam Papers and Feedback		

Do not

	Examination	Quiz	Mid-term Examinations	Report	Portfolio	Other
Basic Ability						
Technical Ability	50	10	10	10	10	20
Interdisciplinary Ability						