COURSE DESCRIPTIONS

Faculty	**Information Technology**				
Department	**Computer Science**			**NQF level**	7
Course Title	**Operating Systems**	**Code**	**501471**	**Prerequisite**	**501305**
Credit Hours	3	**Theory**	3	**Practical**	0
Course Leader	**Dr. Marwan Atoom**	**email**	m.atoom@jadara.edu.jo		
Lecturer:	**Dr. Aymen Abu-Errub**	**emails**	a.abu-errub@jadara.edu.jo		
Lecture time	Tue.: [13:00-14:30] Thu.: [20:30-22:00]	**Classroom**	F308	**Attendance**	Fulltime
Semester	**Second, 2025 - 2026**	**Production**	2010	**Updated**	2026
Type of Teaching	☐ Face to Face √ Blended ☐ Online				

Short Description
This course deals with concepts of modern operating systems. Topics include operating system structures, processes and threads, process communication and synchronization, deadlock and its solutions, processor scheduling, memory management, file systems, I/O device management, security, and protection.

Course Objectives
To let students acquire knowledge and understand about processes and processor management, synchronization, memory management schemes, file system and secondary storage management, security, and protection.

Course Intended Learning Outcomes (CILOs)
A. Knowledge - Theoretical Understanding
a1. **Illustrate** concepts and role of the operating system as communication bridge between the user and computer hardware. (K1)
B. Knowledge - Practical Application
a2. **Apply** CPU scheduling and system deadlock detection algorithms. (K4)
C. Skills - Generic Problem Solving and Analytical Skills
b1. **Analyze** the functionality of Operating Systems. (S1)
D. Skills - Communication, ICT, and Numeracy
E. Competence: Autonomy, Responsibility, and Context

Teaching and Learning Methods			
√ Face to Face Lectures	☐ Brain Storming	☐ Synchronous remote	☐ Asynchronous remote
√ Using Video	√ Discussions	☐ Research Project	☐ Case Study
☐ Field visit	√ Problem solving		
Assessment Methods			
☐ Formative Assessment	√ Quiz	☐ Lab Exam	√ Homework
☐ Project Assessment	☐ Oral Presentation	√ Midterm	√ Final Exam

Course Contents					
Week	**Hours**	**CLOs**	**Topics**	**Teaching & Learning Methods**	**Assessment Methods**
1, 2, 3	9	a1	Syllabus, Course Schedule; **Ch. 1 Overview of Operating Systems**	**Blended Learning (4:30 hours-asynchronous) (4:30 hours synchronous)**	**Discussion and presentation**
4, 5	6	a1	**Ch. 2 Operating System Services**	**Blended Learning (3 hours-asynchronous) (3 hours synchronous)**	**Assignment and Quiz**
6, 7	6	a2	**Ch. 3 Process**	**Blended Learning (3 hours-asynchronous) (3 hours synchronous)**	**Discussion, presentation Assignment and Quiz**
8, 9	6	a2	**Ch. 4 Threads**	**Blended Learning (3 hours-asynchronous) (3 hours synchronous)**	**Discussion, presentation Assignment**
Mid Term Exam					
10, 11, 12	9	a1, a2, b1	**Ch. 5 CPU Scheduling**	**Blended Learning (4:30 hours-asynchronous) (4:30 hours synchronous)**	**Discussion, presentation Assignment and Quiz**
13, 14	6	a1, a2, b1	**Ch. 8 Deadlock**	**Blended Learning (3 hours-asynchronous) (3 hours synchronous)**	**Assignment**

Infrastructure	
Textbook	Operating system concepts. A. Silberschatz, Galvin. Wiley 2018. 10th ed.
References	**1.** Guide to Operating Systems, Greg Tomsho, Cengage, 2020 **2.** Operating Systems: Internals and Design Principles, William S. 2017
Required reading	
Electronic materials	
Other	

Course Assessment Plan						
Assessment Method		**Grade**	**CILOs**			
			a1	**a2**	**b1**	
First (Midterm)		**30**	**15**	**15**	**0**	
Second (if applicable)						
Final Exam		**40**	**10**	**20**	**10**	
Coursework						
Coursework assessment methods	Assignments	**10**	**10**			
	Case study					
	Discussion and interaction	**10**		**10**		
	Group work activities					
	Lab tests and assignments					
	Presentations	**10**			**10**	
	Quizzes					
Total		**100**	**35**	**45**	**20**	

Plagiarism
Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code). Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.