



Mansoura University
Faculty of Computers and Information Sciences



Course Specifications of

Operating System1– CS211P

University: Mansoura University

Faculty: Computer and Information Sciences

Program on which the course is given: General

Department offering the course: Department of Computer science

Academic year/ Level: Second Year

Date of specification approval:

A- Basic Information

Title : Operating System1

Code : CS211P

Credit Hours : 3 **Lecture :** 2 **Tutorial :** --- **Practical :** 2

B- Professional Information

1- Overall Aims of the Course

1. To learn the fundamentals of Operating Systems.
2. To learn the mechanisms of OS to handle processes and threads and their communication
3. To learn the mechanisms involved in memory management in contemporary OS

4. To gain knowledge on distributed operating system concepts that includes architecture, Mutual exclusion algorithms, deadlock detection algorithms and agreement protocols
5. To know the components and management aspects of concurrency management
6. To learn programmatically to implement simple OS mechanisms

2- Intended Learning Outcomes of the course (ILOs)

By completing this course successfully, the student will be able to:

a- Knowledge and Understanding

The student should acquire the knowledge and understanding of:

- A1. Essential facts, concepts, principles and theories relating to computing and information and computer applications as appropriate to the program of study.
- A3. Tools, practices and methodologies used in the specification, design, implementation and evaluation of computer software systems.
- A5. Essential facts, concepts, principles and theories relating to computing and information and computer applications as appropriate to the program of study.
- A6. The current and underlying technologies that support computer processing and intercomputer communication.
- A7. Principles of generating tests which investigate the functionality of computer programs and computer systems and evaluating their results.
- A10. Current developments in computing and information research.
- A11. Requirements, practical constraints and computer-based systems.
- A13. Use high-level programming languages.
- A18. Understand the fundamental topics in Computer Science, including hardware and software architectures, software engineering principles and methodologies, operating systems, compilers, parallel and distributed computing, systems and software tools.

b- Intellectual Skills

The student should be able to:

- B1. Analyze computing problems and provide solutions related to the design and construction of computing systems.
- B2. Realize the concepts, principles, theories and practices behind computing and information as an academic discipline.
- B3. Identify criteria to measure and interpret the appropriateness of a computer system for its current deployment and future evolution.
- B4. Analyze, propose and evaluate alternative computer systems and processes taking into account limitations, and quality constraints.
- B6. Evaluate the results of tests to investigate the functionality of computer systems.

B7.Achieve judgments considering balanced costs, benefits, safety, quality, reliability, and environmental impact.

B11.Perform comparisons between (algorithms, methods, techniques...etc).

c- Professional and Practical Skills The student should be able to:

C1.Operate computing equipment, recognizing its logical and physical properties, capabilities and limitations.

C4.Apply computing information retrieval skills in computing community environment and industry.

C6.Design, implement, maintain, and manage software systems.

d- General and Transferable Skills

The student should be able to:

D1.Demonstrate the ability to make use of a range of learning resources and to manage one's own learning.

D2.Demonstrate skills in group working, team management, time management and organizational skills.

3- Contents

No	Course Content	Lecture	Practical	Total
1	Introduction	2	---	2
2	OS structure and system call	6	---	6
3	Concurrency	2	---	2
4	Process and thread	2	---	2
5	CPU scheduling	2	---	2
6	Memory management	4	---	4
7	Virtual Memory	2	---	2
8	File system	2	---	2
9	Disk Management	---	20	20
Total Hours		22	20	42

4- Assessment Schedule

Assessment Method	No.	Description	Week No.	Weight (%)
Assignment	1	Report	4	5
Written Exams	2	Midterm Exam	7	5
Lab exam	3	mobile app evaluation	11	20
Oral Exam	4	Oral questions	11	10
Written Exams	5	Final Exam	14	60
Total				100

5- List of references

- 1- S.M.Abuelenin, Lecture Notes in Operating System, 2015.
- 2- S. Tanenbaum, [Modern Operating Systems \(3/e\)](#). Prentice Hall.
- 3- Silberschatz, Galvin and Gagne, [Operating system concepts](#). John Wiley and Sons. 9th edition.

6- Facilities Required for Teaching and Learning - Data show.

Course Content/ILO Matrix

Course Content	a1	A3	A5	A6	A7	a10	a11	a13	A18	b1	b2	b3	b4	B6	B7	b11	c1	C4	C6	d1	D2	
Introduction	•			•		•		•			•	•										
OS structure and system call	•	•	•	•					•	•	•	•	•									•
Concurrency	•		•	•							•	•							•			
Process and thread	•	•	•	•		•		•	•		•	•		•		•	•	•				
CPU scheduling	•	•	•	•		•		•	•		•	•		•		•						
Memory & Virtual Memory	•	•	•		•					•	•		•		•		•	•	•			•
File & Disk management	•	•		•	•		•		•	•				•					•	•		•
Student Activity		•		•	•	•		•	•	•		•	•	•			•	•	•			

Learning Method/ILO Matrix

Course Content	a1	A3	A5	A6	A7	a10	a11	a13	A18	b1	b2	b3	b4	B6	B7	b11	c1	C4	C6	d1	D2	
Lectures	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Practical			•	•				•	•					•	•	•	•	•				•

Assessment Methods/ILO Matrix

Course Content	a1	A3	A5	A6	A7	a10	a11	a13	A18	b1	b2	b3	b4	B6	B7	b11	c1	C4	C6	d1	D2	
Assignment			•	•				•	•					•	•	•	•	•				•
Midterm		•		•	•		•		•	•	•	•	•									
Oral Exam		•		•		•	•	•	•					•	•	•	•	•				
Lab Exam				•			•				•					•	•	•	•	•		
Final Exam	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				

Course Coordinator: Sherihan Mohammed Abuelenin

Head of Department: Prof. Samir Elmougy

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