Advanced operating systems 15041471 Course Specification

1. General information about Instructor:

Name	May Zakarneh		Class Time& Office Hours					
Phone	Internal		Day	SUN	MON	TUE	WED	THU
	External		Class Time	12:00-14:00	12:00-14:00	12:00-14:00		
Instructor's E-mail	m.zakarneh@ptuk.edu.ps		Class Room	E213				
			Office Hours					

2.General information about the Course

No	Requirements		
1	Course Title	**Advanced operating systems**	
2	Course code & Number	**15041471**	
3	Credit hours	Theo. (CH): **3**	Practical (CH): **0**
4	Faculty	**College of Applied Sciences**	
5	Department / Division that offers the course:	**Applied Computing**	
6	Course type	Compulsory	Elective
		Uni. ☐ Fac. ☐ Dep. ☐	Uni. ☐ Fac. ☐ Dep. ■
7	Level and Semester	Third Year	
8	Prerequisite(s) – If any	**operating systems**	
9	Co-requisite(s) – if any		
10	Instruction Medium:	English ■	Arabic ☐

3. Course description:

This course will give the student the concepts and techniques of Main Memory and Virtual Memory Management, I/O Systems, Mass-Storage Systems, File System which include File-System Interface, File System Implementation and File System Internals, Networks and Distributed Systems.

4. General Course Objectives

On successful completion of this course the student will be able to achieve the following objectives:

1. On successful completion of this course the student will be able to achieve the following objectives:
2. Provide a detailed description of various ways of organizing memory hardware and discuss various memory-management techniques.
3. Define virtual memory and describe its benefits and apply the FIFO, optimal, and LRU page-replacement algorithms.
4. Explore the structure of an operating system's I/O subsystem and discuss the principles and complexities of I/O hardware.
5. Evaluate I/O scheduling algorithms.
6. Explain the function of file systems and describe the interfaces to file systems.
7. Describe the details of implementing local file systems and directory structures.
8. Explain the advantages of networked and distributed systems.
9. Provide a high-level overview of the networks that interconnect distributed systems.
10. Define the roles and types of distributed systems in use today.

5. Topics covered and Calendar:

A. Theoretical parts (Please state the titles of the subjects you intend to cover each week)

Number	Topics	Number of weeks
1.	Introduction	1
2.	Main Memory	1
3.	Virtual Memory	1
4.	Mass-Storage Systems	
5.	I/O Systems	1
6.	File-System Interface	1
7.	File System Implementation	
8.	File System Internals	1
9.	Networks and Distributed Systems	1

6. Student assessment methods based on ILO,s

No	Assessment method	Week	Mark	Percentage to overall mark
1.	Mid-term Exam	5th	35	40%
2.	Project (Assignment)	4th	20	15%
3.	Final Exam	8th	45	45%

7. References and other resources

A. Recommended Textbook(s) and Resource(s):
1. Operating System Concepts, Silberschatz, galvin and Gagne, Tenth Edtion, May 2018 Wiley.
2. E-Class Site: The course site can be found on the Moodle LMS system . Students are

enrolled automatically.

B. Other references
   1. Guide to Operating Systems, Greg Tomsho, 5th Edition, 2017 Gengage learning.
   2. Operating Systems internals and design principles, Sixth edition, By W. Stallings, 2010.
   3. Modern Operating Systems, Third edition, By : A. Tanenbaum, 2007.
   4. Operating Systems A Systematic View, Sixth edition, By: Davis and, Rajkumar, 2004.
   5. Operating System Concepts, 8th Edition By A. Silberschatz, P. B. Galvin, G. Gagne.

C. Electronic resources, Websites related to the course
   1. Operating System Journal, IEEE Computer.

Name & signature of Head of department/ program leader
Name: …………………………… signature: …………………………Date: ………………

Name & signature of Quality rep. in your faculty
Name: …………………………… signature: …………………………Date: ……………….

Course Tutor's name and signature
 Name: …………………………… signature: …………………………Date: ………………