جامعة المجمعة
Majmaah University

Course Specifications

Institution:	Majmaah University
Academic Department :	Department of Computer Science and Information
Programme :	Computer Science and Information
Course :	**Operating Systems**
Course Coordinator :	
Programme Coordinator :	Assoc. Prof. Youssery Azzam
Course Specification Approved Date :	22/ 12 / 1435 H

This form compatible with NCAAA 2013 Edition

A. Course Identification and General Information

1 - Course title : **Operating Systems**	Course Code: **CIS 412**
2. Credit hours :	3 **credit hours (2 lecture + 2 Laboratory)**
3 - Program(s) in which the course is offered:	**Computer Science and Information Program**
4 – Course Language :	English
5 - Name of faculty member responsible for the course:	
6 - Level/year at which this course is offered :	**7th level – 3**
7 - Pre-requisites for this course (if any) :	• **Computer Organization and Assembly Language CIS 313**
8 - Co-requisites for this course (if any) :	• **None**
9 - Location if not on main campus :	**College of Science at AzZulfi**

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	√	What percentage?	**80 %**
B - Blended (traditional and online)	√	What percentage?	**10 %**
D - e-learning		What percentage?	**……. %**
E - Correspondence		What percentage?	**……. %**
F - Other	√	What percentage?	**10 %**

Comments :

One-tenth of the course is presented mainly inside video lectures of other instructors worldwide. They illustrate the same topics that I introduced in my lectures with a different presentation.

B Objectives

What is the main purpose for this course?

The goal of this course is to introduce Fundamental concepts of operating-systems, principles of modern operating systems, including operating systems structures, system performance and models, systems with multiprogramming, process and thread management, processor scheduling, synchronization, basic concepts of deadlock, memory management, File-System Interface ,Storage Structure ,Data Storage on Disks ,File-Systems : Fat ، Fat32 ، NTFS, Hardware Protection.

Briefly describe any plans for developing and improving the course that are being implemented :

1. Using group discussion through the internet with course attending students.
2. Updating the materials of the course to cover the new topics of the field.

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
1. Introduction	1	4
2. Operating System Structure	1	4
3. Processes	1	4
4. Threads	1	4
5. CPU Scheduling	2	8
6. Process Synchronization	1	4
7. Deadlocks	2	8
8. Memory Management	1	4
9. Virtual Memory	1	4
10. File System Interface and Implementation	1	4
11. I/O Systems and Mass Storage Structure	1	4
12. I/O Systems and Mass Storage Structure	1	4
13. Security and Protection	1	4

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	-	30	-	-	60
Credit	30	-	15	-	-	45

3. Additional private study/learning hours expected for students per week.

5

The private self-study of my student is crucial for this course. It includes:

- reading carefully the topics in the textbook or reference book,
- browsing the websites that concerned with the course,
- solving the exercises that are assigned in each chapter,
- discussing the course topics with the instructor in his office hours,

- watching the video lectures of other instructors who presented related topics worldwide.

The total workload of the student in this course is then: 60 + 5 x 15 = 135 work hours.

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Computer system structures: - I/O sub-systems. - Storage hierarchy. - Discuss/explain the concepts of Hardware protection.	Lectures Lab demonstrations Case studies Individual presentations	Written Exam Homework assignments Lab assignments Class Activities Quizzes
1.2	Process management. - Discuss/explain the different techniques in Process schedule. -Tune and optimize some Operation on processes		
1.3	Deadlock and CPU scheduling - Definition and Detection Algorithm. - Carefully explain the concepts of Single and multiprocessor scheduling		
2.0	**Cognitive Skills**		
2.1	Explain the core issues of cloud computing such as security, privacy, and interoperability.	Lectures Lab demonstrations Case studies Individual presentations Brainstorming	Written Exam Homework assignments Lab assignments Class Activities Quizzes
2.2	Choose the appropriate technologies, algorithms, and approaches for the related issues.		
2.3	Identify problems, and explain, analyze, and evaluate various cloud computing solutions.		
2.4	Attempt to generate new ideas and innovations in cloud computing.		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Work in a group and learn time management	Small group discussion Whole group discussion Brainstorming Presentation	Written Exam Homework assignments Lab assignments Class Activities Quizzes
3.2	Learn how to search for information through library and internet..		
3.3	Present a short report in a written form and orally using appropriate scientific language.		
4.0	**Communication, Information Technology, Numerical**		
4.1	Communicate with teacher, ask questions, solve problems, and use computers.	Small group discussion Whole group	Observations Homework assignments
4.2	Use Information technology and computer skills to gather		

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	information about a selected topic.	discussion Brainstorming Presentation	Lab assignments Class Activities
4.3	Operate questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended.		
5.0	**Psychomotor**		

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	First written mid-term exam	6	15%
2	Second written mid-term exam	12	15%
3	Presentation, class activities, and group discussion	Every week	10%
4	Homework assignments	After each chapter	10%
5	Practical exam	15	10%
6	Final written exam	16	40%
7	total		100%

D. Student Academic Counseling and Support

Office hours: Sun: 8-10, Mon. 8-10, Tus. 1-3.
Office call: Mon. 12-1 and Tus 12-1

Email:
Mobile:

E. Learning Resources

1. List Required Textbooks :

Modern Operating Systems (third edition), Andrew S. Tanenbaum, Prentice Hall Publishers, 2007, ISBN-10: 0-13-600663-9, ISBN-13: 978-0136006633

2. List Essential References Materials :

Operating System Concepts, Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, 8th edition, John Wiley & Sons, 2008.

3. List Recommended Textbooks and Reference Material :

- **None**

4. List Electronic Materials :

Determines as the course is going on.

5. Other learning material :

- **Video and presentation are available with me**

F. Facilities Required

1. Accommodation

- **Classrooms for lectures which are featured to traditional education, e-learning, and equipped with a computer, display device, data show screen, ordinary blackboard, smart board, integrated sound system, proper lighting system, and proper conditioning system.**

2. Computing resources

- Smart Board

3. Other resources

- None

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Analysis of students' results.
- Observation during work.
- Students' evaluations.
- Colleagues' evaluations.
- Evaluation questionnaire filled by the students.
- Interview a sample of students enrolled in the course to take their opinions.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Self-assessment.
- External evaluation.
- Periodic review of course (the Commission of study plans).

3 Processes for Improvement of Teaching :

- Taking into account the recommendations yielded from the internal review of the course.
- Guidelines about course teaching provided by the by study plans commission.
- Department Guidelines about faculty member performance on the basis of direct observation.
- Training and development.
- Workshops to improve the educational process.

4 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :

- Comparison of the course to its counterparts offered in similar departments.
- Periodic revision of course description by faculty member.
- Periodic revision of course description by the study plans and schedules Commission.
- Update learning resources related to the course to ensure that the course is kept up with developments in the field.
- Make use of statistical results of course evaluation made by students to improve and develop the course.
- Giving the opportunity for students to express their opinions about what is taught and receive suggestions and study their effectiveness.

Course Specification Approved
Department Official Meeting No (6) Date 22 / 12 / 1435 *H*

Course's Coordinator		Department Head	
Name :		***Name :***	.....
Signature :	.....	***Signature :***	.....
Date :	22/12 /1435 *H*	***Date :***	…./ … / …… *H*