Course Specification
(Bachelor)

Course Title:	Operating System
Course Code:	167CIS-3
Program:	**Information Systems**
Department:	COMPUTER Deprtment
College:	Applied college
Institution:	Najran University19 AUG 2023
Version:	1
Last Revision Date	2024/10/1:

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (Third level)					
4. Course General Description:					
This course provides the student with an introduction to the operating system, system structures, operating system services, types of operating systems, and Linux commands. In addition, it explains the following concepts: Process scheduling, processor scheduling, threading, deadlocking, and memory management: fragmentation, virtual memory, and file system.					
5. Pre-requirements for this course (if any):					
no					
6. Co-requisites for this course (if any):					
No					
7. Course Main Objective(s):					
✓ **Identify the services provided by the operating syste** √ **Illustrate the structural design of an operating system.** √ **Identifies and describes the major and common components of an operating system.** √ **To understand the structure and organization of the Process, Memory, and File system.** √ **Acquire basic knowledge of Distributed Operating System , Windows, dos and Linux operating system .**					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4	%95
2	E-learning		
3	Hybrid • Traditional classroom		%5

No	Mode of Instruction	Contact Hours	Percentage
	• E-learning		
4	Distance learning		%0

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Outline of secondary storage and Virtual memory concepts	K3=P	Lecture Individual and group discussions	-Exams -Assignments
1.2	understand the structure and organization of the Process			
...				
2.0	**Skills**			
2.1	Differentiate between different operating systems.	S3=I	Lecture Small Group Work Lab Demonstration	Exam Lab Reports
2.2	Implementation of various algorithms in CPU and hard disk scheduling to solve problems.			
...				
3.0	**Values, autonomy, and responsibility**			

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
3.1	Respects others in various work environments and takes responsibility for decision-making	V1		
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction to Operating System , System Structures** **Lab**: Operating systems available and introduction to MS-DOS	2 2
2.	**operating system services,** types of operating systems Lab: Exercised on MS-DOS Environmen: check for a single file- check for group of files-list files with the same extensions -changing directories .	4 2
3. 3	**Process management**: Process Scheduling – Processor Scheduler-Threading, Deadlocks – Inter-Process Communication – Race Condition **Lab**: Exercised on MS -DOS Environment: create, copy, rename directory, create copy rename file, display a file contents, Working on subdirectories.	4 4
4. 4	**Memory Management**: Paging -segmentation-virtual memory Lab: Scheduling Programs , Linux commands	4 4
5. 5	**File System:** File Concept: File Attributes, File Operations, File Types, Access Methods: Sequential Access, Direct Access, Directory and Disk Structure: Single-level Directory, Two-Level Directory, Tree-Structured Directories, Protection: Types of Access, Access Control. **Lab**: Linux commands	4 4
6. 6	**Secondary Storage Structure**: Magnetic Disks, Magnetic Tapes, Network-Attached Storage, Storage-Area Network. **Lab**: Lab: Linux commands	4 2
7. 7	**I/O Systems:** Introduction, I/O Hardware, Pooling , DMA. **Lab:** Services in windows, Device Manager, , Task Manager.	4 2
8. 8	**Distributed Systems:** Introduction, Types of Networks based Operating System: Network Operating System, Distributed Operating System. Lab: Data Backup: System State Data, User Data. **Add new Hardware in the Windows 10, Install device driver Software, Installation of Application Software, Install windows component**	4 4
9. 9	**System Security:** Security Problem, Program Threats, User Authentication. Lab: Device protection in Windows**,** Windows Security: Firewall, Antivirus	4 2
10.		

	Total	**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm Exam	8	20%
2.	Course Project, Assignments, Quizzes, . . .	During Semester	10%
3.	Practical Exam	16	20%
4	Final Exam	17	50%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Abraham Silberschatz, Peter B. Galvin , Greg Gagne, Operating System Concepts 9th Edition, John Wiley & Sons, December 7, 2012, ISBN-10: 978-1-118-06333-0.
Supportive References	"Modern Operating Systems", Andrew S. Tanenbaum., Third Edition , Prentice Hall.
Electronic Materials	
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	A classroom equipped with a projector , (image and sound) and a smart board
Technology equipment (projector, smart board, software)	Business automation lab equipped with computers and connected to the Internet
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	students	Questionnaire
Effectiveness of Students assessment	Faculty members / quality committee / peer reviewer	Direct observation
Quality of learning resources	Faculty members and leaders/students	typical tests and answers / assessments and assignments / questionnaires
The extent to which CLOs have been achieved	Planning and curricula committee /faculty members	**Measuring learning outcomes**
Other	students	Questionnaire

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	