اعتماد
NCAAA

T4

2020

Course Specifications

Course Title:	Advanced Databases
Course Code:	343CIS-3
Program:	Bachelor's degree in information systems
Department:	Department of Information systems
College:	College of Computer Science and Information systems
Institution:	Najran University

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Table of Contents

A. Course Identification

1. Credit hours: 3 (2,2,1)	

2. Course type

a.	University ☐	College ☐	Department √		Others ☐
b.		Required √		Elective ☐	

3. Level/year at which this course is offered:
Level 9/Year 3

4. Pre-requisites for this course (if any)**:**
342CIS-3 Fundamental of Databases

5. Co-requisites for this course (if any)**:**
None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	50	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	20
2	**Laboratory/Studio**	20
3	**Tutorial**	10
4	**Others** (specify)	
	Total	50

B. Course Objectives and Learning Outcomes

1. Course Description

The course covers the topics including storing data: disks and files which include the memory hierarchy, disk space management, buffer management, file and indexes, page formats and record formats; file organization and indexes which introduce cost modeling, comparison of three file organizations, overview of indexes and properties of indexes. Three-structured indexing, hash-based indexing and database design security; transaction management which introduce to transactions and schedules, concurrent execution of transaction, lock-based concurrency control and crash recovery. Crash recovery includes introduction to ARIES, recovery from a system crash and media recovery. It also covers advanced topics such as : Data Mining , Data Warehousing and XML. Students will be trained on some software tools such as: Oracle, Sybase, DB2, and Informix.

2. Course Main Objective

To introduce the Programming in large-scale relational database environment, design and implement applications. Another aspect has ability to apply database administrator, performance issues, Determine the benefits of indexing, integrity constraints and triggers,

Apply Database Security, backups issues to recovery, Finally Analyze the Categories of database failure.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding:**	
1.1	Identify the client/server architecture of the database and the architecture of the DBMS.	K1, K2, K3
1.2	Explain the concepts of database files and indexing, and integrity constraints.	K1, K2
1.3	Discuss the issues in Concurrency Control Techniques.	K3
1...		
2	**Skills:**	
2.1	Implement database transactions.	S2, S4
2.2	Perform database backup, recovery and Security.	S1, S4
2…		
3	**Values:**	
3.1	Solve effectively in teams and practice communication skills in writing and presenting the course project.	V1, V2
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Database Client-Server Architecture.	5
2	Database Transactions/ Conditional Statements, Iterative Control, Trigger, Procedures, Function, Forms and reports	10
3	Managing Database instance, File Storage Structures, DB creation and indexing	5
4	Concurrency Control Techniques	5
5	Database Recovery Techniques	5
6	Database Security	5
7	Data Mining Concepts	5
8	Overview of Data warehousing and OLAP	3
9	XML: Extensible Markup Language	5
10	REVIEW	2
	Total	50

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1	Identify the client/server architecture of the database and the architecture of the DBMS	Lecture	Tests, Quizzes, Assignments and Labs
1.2	Explain the concepts of database files and indexing, and integrity constraints	Lecture	Tests, Quizzes, Assignments and Labs
1.3	Discuss the issues in Concurrency Control Techniques	Lecture	Tests, Quizzes, and Assignments
2.0	**Skills**		
2.1	Implement database transactions	Labs	Tests, Quizzes, Assignments and Labs
2.2	Apply database backup and recovery	Labs	Tests, Quizzes, Assignments and Labs
2.3	Perform Database Security	Labs	Tests, Quizzes, Assignments and Labs
3.0	**Values**		
3.1	Solve effectively in teams and practice communication skills in writing and presenting the course project.	Group Discussion, Assignment	Oral Presentation Weekly Task Final Report and Documentation Discussion
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Lab activities	Through to course	10%
2	Assignment 1	2	5%
3	Quiz 1	3	5%
4	Midterm Exam	5	20%
5	Assignment 2	6	5%
6	Tutorial	8	3%
7	Final Lab	11	12%
8	Final Test	12	40%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

10 weekly office hours + appointments
4 weekly academic advising hours
Extra weekly 2 office hours prior to exams.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Elmasri, Ramez and Navathe, Shamkant. Fundamentals of Database Systems. Boston: 7th Edition, 2016
Essential References Materials	• Benjamin Rosenzwing, Elena Silvestrova, Oracle PL/SQL by Example, Printice Hall, Latest Edition. • John Adoloh Palinski, Oracle SQL and PL/SQL Handbook. Addison Wesley, Latest Edition.
Electronic Materials	www.oracle.com
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Lecture Room with PC, Auto Projector and a white board. Laboratory.
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show multimedia system, PCs Headset and Microphone system.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Direct
Focus group discussion with small groups of students.	Instructor	Direct
Extent of achievement of course learning outcomes	Instructor	Direct
The quality of learning resources	Program Leaders	Direct

Evaluation Areas/Issues	Evaluators	Evaluation Methods

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Council
Reference No.	14440729-0182-00018
Date	1444/08/01