



Course Specifications

Course Title:	Database Management Systems
Course Code:	502373-3
Program:	Bachelor in Information Technology
Department:	Department of Information Technology
College:	College of Computers and Information Technology
Institution:	Taif University

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A. Course Identification

1. Credit hours:
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 9/3
4. Pre-requisites for this course (if any): Fundamental of Databases, 502372-3
5. Co-requisites for this course (if any):

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	8	100%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	50
2	Laboratory/Studio	30
3	Tutorial	
4	Others (specify)	
	Total	80

B. Course Objectives and Learning Outcomes

1. Course Description

This course will introduce the basic concepts database management systems, including: file structure and indexing techniques, query processing, query concurrency, recovery techniques, transaction protocols and database security fundamentals.

2. Course Main Objective

The aim of the course is to provide the students with knowledge needed to understand the internals of database management systems (DBMSs). Students acquire knowledge about each component of a DBMS including Transaction Management (Concurrency Control and Recovery), Query Processing and Optimization and Database Security & Administration.



3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Describe, in general basic file structure and indexing technique.	K1
1.2	Explain query processing concept in databases and the properties of transactions and concurrency problems.	K1
1.3	Describe query concurrency and recovery techniques.	K1
2	Skills :	
2.1	Analyze basic file structures and indexing techniques	S2
2.2	Analyze different transaction and concurrency control algorithms and techniques.	S1
3	Values:	
3.1	Evaluate database security & administration models.	V1

C. Course Content

No	List of Topics	Contact Hours
1	Disk Storage, Basic File Structures, and Hashing	10
2	Indexing Structures for Files	10
3	Algorithms for Query Processing and Optimization	10
4	Introduction to Transaction Processing Concepts and Theory	15
5	Concurrency Control Techniques	15
6	Database Recovery Techniques	10
7	Database Security	10
Total		80

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		
1.1	Describe, in general, the components of a DBMS and the main functions of each component	Lecture Discussion	Written Exams Assignments
1.2	Describe query optimization and the steps involved in generating efficient query plans	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
2.0	Skills		
2.1	Explain the transaction concept in databases and the properties of transactions	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
2.2	Analyze different concurrency control algorithms and techniques and how they lead to solve concurrency problems	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
2.3	Explain different database recovery techniques	Lecture Discussion Lab work	Written Exams Assignments Practical Exam



Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.4	Analyze and evaluate database security & administration models	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
3.0	Values		
3.1			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments	10	20%
2	Mid Exam	6	20%
3	Labs	11	20%
4	Final Exam	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:

Academic advising and counseling of students is an important component of teaching; student academic advising is a mandatory requirement of College of Computers and Information Technology (CCIT). Appropriate student advising provides support needed for the student during times of difficulty. In addition, it helps the student to build a close relationship with his/her advisor and to provide student motivation and involvement with the institution.

In addition, since faculty are usually the first to recognize that a student is having difficulty, faculty members play a key role in developing solutions for the students or referring them to appropriate services. Faculty members also participate in the formal student-mentoring program.

Additional counseling is provided by course directors, who provide students with academic reinforcement and assistance and refer "at risk" students to the Vice Dean for Academic Affairs and the Vice Dean for female section.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Ramez Elmasri, Shamkant Navathe, "Fundamental of Database Systems," Prentice Hall PTR, New Jersey, USA, Last Edition
Essential References Materials	<ul style="list-style-type: none"> • Fundamentals of Database Management Systems, Gillenson, Last Edition, Wiley. • Database Management Systems, Ramakrishnan and Gehrke, Last Edition, McGraw Hill.



Electronic Materials	Course slides, course handouts, questions and answers bank, and LMS to facilitate communications between instructors and students
Other Learning Materials	-

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> • A Lecture room appropriate for maximum 25 students with a personal computer, a data show and a smart board. • A Lab room appropriate for maximum 15 students with a personal computer, a data show and a smart board.
Technology Resources (AV, data show, Smart Board, software, etc.)	Lab materials and required software
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	Students	Students' surveys and Students course evaluation
Improvement of Teaching	Course Coordinator	deficiencies based on the student Evaluation, faculty input, course file, and program assessment
Verifying Standards of Student Achievement	Curriculum Committee	<ul style="list-style-type: none"> • Review CAF (Course assessment file) • Alumni surveys. • Periodic exchange and remarking of tests or a sample of assignments with staff at another

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	IT Department Council/ Executive program committee
Reference No.	11
Date	23/10/21443



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