



Course Specification

(Bachelor)

Course Title: Database 1

Course Code: CS1007

Program: Computer Science, Computer Information Systems, and Information Technology

Department: Computer Science and Engineering

College: Computer Science and Information Technology

Institution: Albaha University

Version: 1

Last Revision Date: 8-10-2023



A. General information about the course:	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods	5
C. Course Content	6
D. Students Assessment Activities	7
E. Learning Resources and Facilities	7
F. Assessment of Course Quality	9
G. Specification Approval	10

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: (Level 3 / 2nd Year)

4. Course general Description:

Lecture:

This course covers concepts and techniques used in constructing relational databases.

The students learn the rules of modelization and normalization of the databases, the implementation and the use of the SQL DDL language. Then through the relational algebra, they learn to solve the simple and complex queries and then translate them into SQL DML. They also acquire how to convert the Entity Relation Model to a Relational Model.

LAB

The lab is planned to give students practical experiments on Oracle DBMS. Students will also learn how to build database using SQL, how to insert, delete, update rows and/or tables, how to write simple and complex queries (query and sub query, join, group by, exist, all, negation form, etc...).

5. Pre-requirements for this course (if any):

None

6. Pre-requirements for this course (if any):

None

7. Course Main Objective(s):

The main purpose for this course is to:

1. Describe the concepts of database.
2. Explain the relational model.
3. Demonstrate an understanding of SQL
4. Demonstrate an understanding of the entity-relationship model.
5. Demonstrate an understanding of relational database design.
6. Interact in groups collaboratively.
7. Communicate concepts and techniques in oral presentations.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	22	50%
2	E-learning		
3	Hybrid 1. Traditional classroom 2. E-learning		
4	Distance learning	22	50%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	22
2.	Laboratory/Studio	22
3.	Field	
4.	Tutorial	

5.	Others (specify)	
Total		

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

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Describe the concepts of database..	K1	Lectures Assignment	Midterm exam Project (Rubric)
1.2	Explain the querying concept	K2	Lectures Assignment	Midterm exam Homework (Rubric) Final Exam
1.3	Explain the relational model.	K3	Lectures Assignment	Quiz Homework (Rubric) Final Exam
2.0	Skills			
2.1	Understand of SQL language (SQL-DDL+SQL-DML simple queries)	S1	Lectures Assignments	Midterm exam Lab work (Rubric) Homework (Rubric) Project (Rubric) Final Exam Lab reports (Rubric)
2.2	Use Advanced querying (SQL-DML complex queries)	S2	Lectures Assignments	Midterm exam Quiz Lab work (Rubric) Homework (Rubric) Project (Rubric)

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
				Final Exam Lab reports (Rubric)
2.3	Understand of the entity-relationship model design and the mapping to the relational database model.	S3	Lectures Assignments	Lab work (Rubric) Homework (Rubric) Project (Rubric) Lab reports (Rubric) Final Exam
2.4	Communicate concepts and techniques in oral presentation	S3	Lectures Assignments	Project (Rubric)
3.0	Values, autonomy, and responsibility			
3.1	Work both independently and collaboratively	V1	Small Groups	Project (Rubric)

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Database	2
2.	The database concepts	2
3.	Basic SQL: SQL DDL language	2
4.	Algebraic and logical query languages (relational algebra)	4
5.	SQL - DML language	4
6.	Database Design and the Entity-Relationship Model	4
7.	Mapping to the Relational Database	4
Total		22

No	List of Topics (Lab)	Contact Hours
1.	Access DBMS	2
2.	The database language SQL DDL(Data Definition Language),	4

	Creating and Inserting queries, data types in SQL , constraints, indexes (Installing ORACLE 11Express edition)	
3.	The database language SQL DDL: altering and dropping tables, update and delete queries	4
4.	The database language SQL DML(Data Manipulation Language): select query: simple queries, Aggregate functions, Nested subqueries, Join expressions and Views	6
5.	Project	6
Total		22

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	Every two weeks	5%
2.	Lab work	11	5%
3.	Lab reports	Every two weeks	5%
4.	Midterm exam	6	15%
5.	Project	12	20%
5.	Quiz	10	10%
7.	Final Exam	13	40%

*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	<ol style="list-style-type: none"> 1. <i>Database System Concepts</i> Publisher: McGraw-Hill Author: Abraham Silberschatz, Henry Korth, S. Sudarshan Edition Number: 6 ISBN:0073523321 1. <i>Database Systems: The Complete Book</i> Publisher: Pearson Prentice Hall Author: Hector Garcia-Molina, Jeffrey D. Ullman, Jennifer Widom Edition Number: 2 ISBN: 0131873253 3. <i>Database Management Systems</i> Publisher: McGraw-Hill Author: Raghu Ramakrishnan, Johannes Gehrke Edition Number: 3 ISBN: 0072465638 3. "Database Management Systems," (3rd Ed.) by Raghu Ramakrishnan and Johannes Gehrke "Database System Concepts," (6th Ed.) by Avi Silberschatz, Henry Korth, and S. Sudarshan
Supportive References	<p>Computer Science Curriculum 2013 – http://cs2013.org</p> <p>ACM (Association for Computer Machinery) Curricula Recommendations - http://www.acm.org/education/curricula-recommendations</p>
Electronic Materials	<p>ACM (Association for Computer Machinery) web site - http://www.acm.org/</p> <ol style="list-style-type: none"> 1. ACM SIGMOD (Special Interest Group on Management of Data) - http://www.sigmod.org/ 2. IEEE Computer Society web site - http://www.computer.org/portal/web/guest/home <p>Open access course material online</p>
Other Learning Materials	Open access course material online

2. Required Facilities and equipment

Items	Resources
<p>facilities</p> <p>(Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)</p>	<ol style="list-style-type: none"> 1. A classroom or lecture hall with whiteboard. 2. A laboratory with computers that have installed Windows,

Items	Resources
<p>Technology equipment (projector, smart board, software)</p>	<p>1. A digital image projection system with connection and switches to desktop computer, laptop computer</p> <hr/> <p>All students shall have</p> <p>1. A laptop or access to a desktop computer with access to a major database management system</p> <p>2. High speed Internet connection</p> <p>3. Power outlets for student's laptop plug-in</p> <p>1. Microsoft Access</p> <p>Oracle Database Express Edition (11g Release 2)</p>
<p>Other equipment (depending on the nature of the specialty)</p>	<p>A laboratory with multiple computers, with a variety of operating systems:</p> <p>Windows</p>

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	<ul style="list-style-type: none"> • Students • Faculty • Peer Reviewers • Program Leader • Course Coordinator 	<ul style="list-style-type: none"> • Surveys (indirect). • Direct feedback from students. • Course evaluation by Peer Reviewers (indirect). • Class visit by Program Leader (indirect) Comprehensive Course report (where we can find information about teaching difficulties and action plan, ...)
Effectiveness of Students assessment	<ul style="list-style-type: none"> • Faculty • Peer Reviewers 	<ul style="list-style-type: none"> • Surveys (indirect)
Quality of learning resources	<ul style="list-style-type: none"> • Students 	<ul style="list-style-type: none"> • Surveys (indirect)

Assessment Areas/Issues	Assessor	Assessment Methods
	<ul style="list-style-type: none"> •Faculty •Peer Reviewers •Course Coordinator 	<ul style="list-style-type: none"> •Course evaluation by Peer Reviewers (indirect). Comprehensive Course report (where we can find information about difficulties and challenges about learning resources as well as consequences and action plan, ...)
The extent to which CLOs have been achieved	<ul style="list-style-type: none"> •Faculty •Program Leader •Course Coordinator 	<ul style="list-style-type: none"> •Student Results (direct) •Comprehensive Course report (where we can find the CLO assessment results)
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	