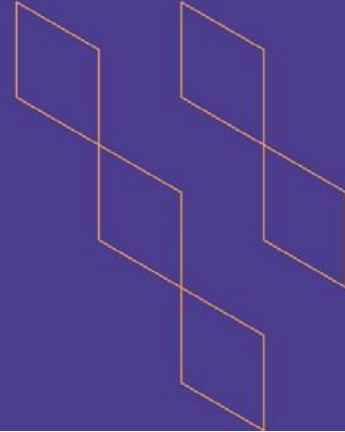




T-104  
2022

## Course Specification



<b>Course Title: Database</b>
<b>Course Code: SE1003</b>
<b>Program: Software Engineering</b>
<b>Department: Software Engineering</b>
<b>College: Computing &amp; Information</b>
<b>Institution: Al-Baha University</b>
<b>Version: V1.0</b>
<b>Last Revision Date: 24/4/2024</b>



## Table of Contents:

Content	Page
A. General Information about the course	3
1. Teaching mode (mark all that apply)	4
2. Contact Hours (based on the academic semester)	
B. Course Learning Outcomes (CLOs), Teaching Strategies and <b>Assessment Methods</b>	5
C. Course Content	6
D. Student Assessment Activities	7
E. Learning Resources and Facilities	9
1. References and Learning Resources	9
2. Required Facilities and Equipment	9
F. Assessment of Course Quality	10
G. Specification Approval Data	11



## A. General information about the course:

### Course Identification

1. Credit hours: 4 Hours

#### 2. Course type

a. University  College  Department  Track  Others

b. Required  Elective

3. Level/year at which this course is offered: Level 5 / 2<sup>nd</sup> 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. Co- requirements for this course (if any): None

#### 7. Course Main Objective(s)

##### **The main purpose for this course is to:**

- Describe the concepts of database.
- Explain the relational model.
- Demonstrate an understanding of SQL
- Demonstrate an understanding of the entity-relationship model.
- Demonstrate an understanding of relational database design.
- Interact in groups collaboratively.
- Communicate concepts and techniques in oral presentations.



### 1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	33	60%
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> <li>• Traditional classroom</li> <li>• E-learning</li> </ul>		
4.	Distance learning		
5.	Other	22	40%

### 2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	33
2.	Laboratory/Studio	22
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	<b>Total</b>	<b>55</b>





## 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 SQL querying (SQL-DML complex queries)	S2	Lectures Assignments	Midterm exam Quiz

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
				Lab work (Rubric) Homework (Rubric) Project (Rubric) 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	4
2.	The database concepts	3
3	Basic SQL: SQL DDL language	6
4	Algebraic and logical query languages (relational algebra)	5



5	SQL - DML language	5
6	Database Design and the Entity-Relationship Model	5
7	Mapping to the Relational Database	5
Tota 		22

No	List of Topics (Lab)	Contact Hours
1	Access DBMS	4
2	The database language SQL DDL(Data Definition Language), Creating and Inserting queries, data types in SQL , constraints, indexes (Installing ORACLE 11Express edition)	4
3	The database language SQL DDL: altering and dropping tables, update and delete queries	3
4	The database language SQL DML(Data Manipulation Language): select query: simple queries, Aggregate functions, Nested subqueries, Join expressions and Views	4
5	Project	7
Tota 		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%
6.	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"> <li>1. <i>Database System Concepts</i> Publisher: McGraw-Hill Author: Abraham Silberschatz, Henry Korth, S. Sudarshan Edition Number: 6 ISBN:0073523321</li> <li>2. <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</li> <li>3. <i>Database Management Systems</i> Publisher: McGraw-Hill Author: Raghu-Ramakrishnan, Johannes Gehrke Edition Number: 3 ISBN: 0072465638</li> <li>4. "Database Management Systems," (3<sup>rd</sup> Ed.) by Raghu Ramakrishnan and Johannes Gehrke "Database System Concepts," (6<sup>th</sup> Ed.) by Avi Silberschatz, Henry Korth, and S. Sudarshan</li> </ol>
Supportive References	<p>Computer Science Curriculum 2013 – <a href="http://cs2013.org">http://cs2013.org</a> ACM (Association for Computer Machinery) Curricula Recommendations - <a href="http://www.acm.org/education/curricula-recommendations">http://www.acm.org/education/curricula-recommendations</a></p>
Electronic Materials	<p>ACM (Association for Computer Machinery) web site - <a href="http://www.acm.org/">http://www.acm.org/</a></p> <ul style="list-style-type: none"> <li>• ACM SIGMOD (Special Interest Group on Management of Data) - <a href="http://www.sigmod.org/">http://www.sigmod.org/</a></li> <li>• IEEE Computer Society web site - <a href="http://www.computer.org/portal/web/guest/home">http://www.computer.org/portal/web/guest/home</a></li> <li>• Open access course material online</li> </ul>
Other Learning Materials	none

### 2. Required Facilities and equipment

Items	Resources
<p><b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)</p>	<ul style="list-style-type: none"> <li>• A classroom or lecture hall with whiteboard.</li> <li>• A laboratory with computers that have installed Windows,</li> </ul>



Items	Resources
<p><b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)</p>	<ul style="list-style-type: none"> <li>A digital image projection system with connection and switches to desktop computer, laptop computer</li> </ul> <hr/> <p>All students shall have</p> <ul style="list-style-type: none"> <li>A laptop or access to a desktop computer with access to a major database management system</li> <li>High speed Internet connection</li> <li>Power outlets for student's laptop plug-in                             <ul style="list-style-type: none"> <li>Microsoft Access</li> </ul> </li> </ul> <p>Oracle Database Express Edition (11g Release 2)</p>
<p><b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)</p>	<p>A laboratory with multiple computers, with a variety of operating systems: Windows</p>
<p>Other equipment (depending on the nature of the speciality)</p>	

## F. Assessment of Course Quality

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





Assessment Areas/Issues	Assessor	Assessment Methods
	Coordinator • Exam Evaluation Committee • Course Coordinator	Program leader and students ). • Assessment results (direct) • Course evaluation by Peer Reviewers(indirect). • Comprehensive Course report (where we can find information about assessment difficulties and action plan, ...) • Exam evaluation by the Exam Evaluation Committee (indirect)
Quality of learning resources	• Students • Faculty • Peer Reviewers • Course Coordinator	• Surveys (indirect) • 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	• Faculty • Program Leader • Course Coordinator	• Student Results (direct) • Comprehensive Course report (where we can find the CLO assessment results)
Other	None	

**Assessor** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval Data

**COUNCIL /COMMITTEE**

**Curriculum Committee**

**REFERENCE NO.**

