T-104
2022

Course Specification
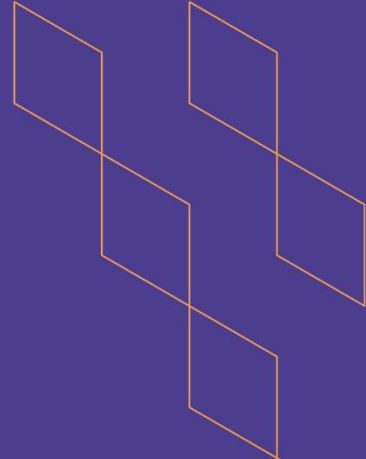
Course Title:	**Database 1**
Course Code:	**ITXXXX**
Program:	**Information Technology**
Department:	**Information Technology**
College:	**Computer Science and Information Technology**
Institution:	**Albaha University**
Version:	*Course Specification Version Number*
Last Revision Date:	*Pick Revision Date.*

Table of Contents:

A. General information about the course:

Course Identification	
1. Credit hours:	3 Hours

2. Course type

a.	University ☐	College ☐	Department ☒	Track ☐	Others ☐
b.	Required ☒	Elective ☐			

3. Level/year at which this course is offered: 5th Level / 2nd Year

4. Course general Description

Lecture:
The fundamentals of database systems and architectures, including data models, database design, and database implementation, will be covered in this course. Its focus is on relational databases and ER model topics, such as relational data model, SQL, normalization, and database design process.

Lab:
The lab is designed to provide students with hands-on Oracle DBMS experiments. Additionally, students will learn how to use SQL to create databases, add, delete, and/or update rows and/or tables, as well as how to write both straightforward 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 objective for this course is to teach students how to:
- **Describe basics of databases and approaches to store data.**
- **Describe the relationship model and the ER notation as well as the data modeling concepts.**
- **Use SQL as DDL to manipulate a database.**
- **Use SQL as DML to manipulate a database.**
- **Create databases utilizing ER concepts and relational algebra.**
- **Communicate concepts and techniques in oral presentation.**
- **Participate in groups collaboratively.**

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	44	100%
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning		

No	Mode of Instruction	Contact Hours	Percentage
4.	Distance learning		

2. 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	44

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 basics of databases and approaches to store data.	K1	Lectures	Midterm Exam
1.2	Describe the relationship model and the ER notation as well as the data modeling concepts.	K1	Lectures	Midterm Exam Final Exam
2.0	Skills			
2.1	Use SQL as DDL to manipulate a database.	S1	Lectures Assignments Lab	Homework Midterm Exam Lab Work Project Final Exam
2.2	Use SQL as DML to manipulate a database.	S1	Lectures Assignments Lab	Homework Lab Work Project Final Exam
2.3	Create databases utilizing ER concepts and relational algebra.	S2	Lectures Assignments	Homework Project Final Exam
2.4	Communicate concepts and techniques in oral presentation.	S6	Project	Presentation
3.0	Values, autonomy, and responsibility			
3.1	Participate in groups collaboratively.	V1	Team-based learning	Presentation

C. Course Content

No	List of Topics	Contact Hours
	Lectures	
1.	Introduction to Database Systems	2
2.	Database System Concepts and Architecture	1
3.	Introduction to SQL	4

4.	Introduction to the Relational Model	2
5.	Relational Query Languages (The Relational Algebra)	2
6.	SQL Modification of the Database	1
7.	SQL Aggregate Functions, Nested Subqueries, Join Expressions, Views	4
8.	Database Design Using the E-R Model	4
9.	Normal Forms	2
	Total	22

	Labs	
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
	Total	22

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	Every two Weeks	10%
2.	Lab Work	Every two Weeks	10%
3.	Midterm Exam	Week 6	20%
4.	Project	Week 10	20%
5.	Final Exam	Week 12	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	1. Database System Concepts Publisher: McGraw-Hill Author: Abraham Silberschatz, Henry Korth, S. Sudarshan Edition Number: 7 2. Database Systems: The Complete Book Publisher: Pearson Prentice Hall Author: Hector Garcia-Molina, Jeffrey D. Ullman, Jennifer Widom Edition Number: 2 ISBN: 0131873253 3. Database Management Systems Publisher: McGraw-Hill Author: Raghu-Ramakrishnan, Johannes Gehrke Edition Number: 3 ISBN: 0072465638 4. "Database Management Systems," (3rd Ed.) by Raghu Ramakrishan and Johannes Gehrke
Supportive References	• Information Systems Curriculum 2010 – http://www.acm.org/education/curricula/IS%202010%20ACM%20final.pdf • Computer Science Curriculum 2013 – http://cs2013.org • ACM (Association for Computer Machinery) Curricula Recommendations - http://www.acm.org/education/curricula-recommendations
Electronic Materials	• Access to the Saudi Digital Library (SDL). • Using the learning management system of the university – Rafid System (https://lms.bu.edu.sa/). • ACM (Association for Computer Machinery) web site - http://www.acm.org/
Other Learning Materials	None

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	A classroom or lecture hall with whiteboard for 25 students.
Technology equipment (projector, smart board, software)	• A digital image projection system with connection to desktop computer or laptop computer. • High-speed Internet connection. • An instructor computer station.
Other equipment (depending on the nature of the specialty)	A laboratory with: • Microsoft Access • Oracle Database Express Edition (11g Release 2)

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students Peer Reviewer Program Leader	Indirect: Survey Direct: Peer Review Direct: Class Visits
Effectiveness of students assessment	Exams Evaluation Committee Students	Direct: Exam Review Indirect: Survey
Quality of learning resources	Faculty Students	Indirect: Survey Indirect: Survey
The extent to which CLOs have been achieved	Faculty	Direct: Exams
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	