



Course Specifications

Course Title:	Database Design
Course Code:	CP33
Program:	Diploma in Programming and Computer Sciences
Department:	Technology department
College:	Applied College
Institution:	Taif University

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A. Course Identification

1. Credit hours:	4
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: First Year Third Level	
4. Pre-requisites for this course (if any): None	
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	6	100%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	40
2	Laboratory/Studio	20
3	Tutorial	
4	Others (specify)	
	Total	60

B. Course Objectives and Learning Outcomes

1. Course Description

This course introduces students to basic relational database concepts. The course teaches students relational database terminology, as well as data modeling concepts, building Entity Relationship Diagrams (ERDs), and mapping ERDs. Oracle SQL Developer Data Modeler is utilized to build ERDs. It stresses the database modeling and design process in addition to the application of different mapping techniques used to map entities, attributes, primary and foreign keys using Oracle SQL Developer Data Modeler.

2. Course Main Objective

The course aims to develop organized logical thinking of the student. In addition, students will be able to describe the essential elements of a relational database system and master the basic concepts of the relational data model, entity-relationship model, relational database design, and application of different mapping techniques used to map entities, attributes, primary and foreign keys using Oracle SQL Developer Data Modeler. At the end of this course the student:

- have a high-level understanding of major relational DB components and their function

- be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Define database, relational data base (components, advantages..), data models , database users and models.	K1
1.2	Specify fundamental elements of relational database modeling and business rules.	K1
1.3	Enumerate the different fundamental elements of the conceptual data modeling ERD.	K1
2	Skills :	
2.1	Use the basic concepts of relational data model entity-relationship model	S2
2.3	Apply different mapping techniques used to map entities, attributes, primary and foreign keys using Oracle SQL Developer Data Modeler.	S2
3	Values:	

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Databases : Types of database models and business requirements accompanied with practice solution	6
2	Relational Database description: relational databases advantages , components, Key terms and properties.	6
3	Conceptual Data Modeling: Purpose, components, terminologies, examples , goals and steps to build and ERD.	6
4	How to specify unique identifiers and Primary Keys, Relationships and foreign keys	6
5	Relational Databases modeling : <ul style="list-style-type: none"> • Conceptual, logical and Physical Data Models ,and difference between them. • Understand business rules and their types. 	6
6	Relational Databases modeling : Entities and attributes, Unique Identifiers and Relationships	6
7	Relational Databases modeling : <ul style="list-style-type: none"> • Validating Relationships and tracking data changes over time • How to Convert a logical model to relational model using Oracle SQL Developer Data Modeler 	6
8	Mapping entities and attributes : by using Oracle SQL Developer Data Modeler to apply naming standards by creating : Glossary, name abbreviations, design rules, custom rules and transformations.	6
9	Mapping primary and foreign keys: map exclusive relationships to foreign keys , Map subtypes to tables and identify overlapping and folding keys.	6
10	Review	6
Total		60

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	Specify fundamental elements of relational database modeling	Lectures	Quizzes Exams Homework Evaluation
1.2	Understand the different fundamental elements of the conceptual data modeling ERD.	Lectures	Quizzes Exams Homework Evaluation
2.0	Skills		
2.1	Use the basic concepts of relational data model entity-relationship model	Lectures/Lab	Quizzes Exams Homework Evaluation
2.3	Apply different mapping techniques used to map entities, attributes, primary and foreign keys using Oracle SQL Developer Data Modeler.	Lectures/Lab	Quizzes / Homework Project / Exams
3.0	Values		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	HomeWorks/StudentParticipation-Attendance/quiz	Every Week	10%
2	Project	From week 3 to week 8	10%
3	Mid-Term	6	20%
4	Final Examination	12	60%

*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 :

- Providing a guide for each group of students, and distributing student lists electronically to faculty members.
- There is an academic advising guide that defines the role of the faculty member in the academic advising process.
- The program supervisor is available throughout the year to answer student inquiries.
- Availability of full information about the program and its members and ways to communicate with them.
- Use the Learning Management System (Black Board) to communicate with students

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<p>Title: Study Guide For 1Z0-006: Oracle Certification Prep: Oracle Database Foundations Author: Matthew Morris Publisher: ODBPress, 2015 ISBN: 1941404081, 9781941404089</p>
Essential References Materials	<p>OCA Oracle Database SQL Exam Guide (Exam 1Z0-071) by Steve O'Hearn Released August 2017 Publisher(s): Oracle Press ISBN: 9781259584619</p>
Electronic Materials	<ul style="list-style-type: none"> • Digital library : https://sdl.edu.sa/SDLPortal/Publishers.aspx • Digital Data warehouse http://applications/eLibrary
Other Learning Materials	Oracle Academy course

2. Facilities Required

Item	Resources
<p>Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p>	<ul style="list-style-type: none"> • Classroom with 25 chairs
<p>Technology Resources (AV, data show, Smart Board, software, etc.)</p>	<ul style="list-style-type: none"> • Oracle SQL Developer Data Modeler • Video projector / data show • White board
<p>Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)</p>	Null

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	<ul style="list-style-type: none"> ❖ Students ❖ Program Leader ❖ Coordinator 	❖ Questionnaire - indirect.
Effectiveness of assessment	<ul style="list-style-type: none"> ❖ Faculty members ❖ Coordinator ❖ Program Leader ❖ Curriculum Committees 	❖ Statistical data - indirect.
Extent of course achievement	<ul style="list-style-type: none"> ❖ Faculty members ❖ Coordinator ❖ Program Leader 	❖ Feedback from Faculty members-Direct.
Extent of course learning outcomes	<ul style="list-style-type: none"> ❖ Coordinator ❖ Program Leader 	❖ Student opinion poll questionnaire about faculty members - indirect.

Evaluation Areas/Issues	Evaluators	Evaluation Methods
		❖ Student survey questionnaire. - not directly.
Quality of learning resources	<ul style="list-style-type: none"> ❖ Students ❖ Faculty members ❖ Coordinator 	<ul style="list-style-type: none"> ❖ Self-calendar for the program -Direct. ❖ Performance appraisal committee in the department -Direct. ❖ Review the program report -Direct.

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	
Reference No.	
Date	