



Proposed Academic Year	2021/ 2022	Last Reviewed Academic Year	2020/2021
Course Code	INTE 220	Course Title	Advanced Databases
Credit hours	3	Level of study	Undergraduate
College / Centre	COBA	Department	MIFS
Co-requisites	None	Pre-requisites	INTE205

1. COURSE OUTLINE

This course builds on the fundamentals of database course. The course focus on delivering the advance topics of databases including distributed databases, database administration, and security and managing transactions and concurrency.

2. AIMS

The course aims to equip the students with the advance knowledge that is needed to understand the databases and their applications and peripherals.

3. LEARNING OUTCOMES, TEACHING, LEARNING, ASSESSMENT METHODS, and Graduate Attributes Mapping

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)	Graduate Attributes Mapping
Upon successful completion of this course, students will be able to: 1. Analyzing business problems to design a database.	<ul style="list-style-type: none"> Lectures Seminars Group Work Computer Laboratory Work 	Exams, Quizzes, Class Presentation, Assignment, Case study Report. Classwork Computer-based class work	Knowledge of a discipline. Commitment to national development and Omani ethical values. Innovative spirit.
2. Formulate SQL queries to create and maintain databases, and manipulate and retrieve data.	<ul style="list-style-type: none"> Lectures Seminars Group Work Computer Laboratory Work 	Exams, Quizzes, Class Presentation, Assignment, Case study Report. Classwork Computer-based class work	Knowledge of a discipline.
3. Critically analyze the different type of databases and their capabilities.	<ul style="list-style-type: none"> Lectures Seminars Group Work Computer Laboratory Work 	Exams, Quizzes, Class Presentation, Assignment, Case study Report. Classwork Computer-based class work	Knowledge of a discipline. Commitment to national development and Omani ethical values.



			Innovative spirit.
4. Classify advance level of data modelling and development through the analysis of business needs.	<ul style="list-style-type: none"> Lectures Seminars Group Work Computer Laboratory Work 	Exams, Quizzes, Class Presentation, Assignment, Case study Report. Classwork Computer-based class work	Knowledge of a discipline. Commitment to national development and Omani ethical values. Innovative spirit.
5.			

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Final	30
Mid	30
Assignment	30
Participation	10
TOTAL	100%

5. ACHIEVING A PASS

Students will achieve 3 credit hours for this course by achieving a minimum overall score of 50%

6. COURSE CONTENT (Indicative)

LECTURE TOPIC	TIME (HOURS)
Review: Introduction to Databases	04
Introduction to SQL	06
SQL functions: Data Definition Language (such as Create, Drop, Alter, Rename, etc.)	06
SQL Functions: Data Manipulation Language (including Select, Insert, Update, Delete etc.)	08
SQL functions: Data Control Language	06
SQL functions: Transaction Control Language	06
Joining and Union in SQL	06
database security threats and countermeasures	06



TOTAL HOURS	48
Plus RECOMMENDED INDEPENDENT STUDY HOURS	
TOTAL COURSE HOURS	48

7. RECOMMENDED READING

Core text/s:

- 1. Coronel, C. and Morris, S., 2016. *Database systems: design, implementation, & management*. Cengage Learning.
- 2. Özsu, M.T. and Valduriez, P., 2011. *Principles of distributed database systems*. Springer Science & Business Media.
- 3. Ambler, S., 2012. *Agile database techniques: Effective strategies for the agile software developer*. John Wiley & Sons.

Stephens, R.K. and Plew, R.R., 2003. *Sams teach yourself SQL in 21 days*. Sams Publishing

Library + online resources:

ASU library
ASU online resources (ProQuest and ebrary)
Sultan Qaboos University Library (by agreement)

Resources Under Creative Common LC:

- 1. <https://www.digitalocean.com/community/tutorials/a-basic-mysql-tutorial>
- 2. <https://www.w3resource.com/mysql-exercises/index2.php>

