



Ministry of Higher Education  
and Scientific Research – Iraq  
Al-Mustaqbal University College  
College of Sciences



## MODULE DESCRIPTOR FORM نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	DATABASE		Module Delivery
Module Type	CORE		Theory Lecture Lab Tutorial Practical Seminar
Module Code	UOMU0304041		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	2	Semester of Delivery	
Administering Department	Department of AI	College	College of Sciences
Module Leader	Asst. Lec Ali Haider Sadeq	e-mail	ali.haider@uomus.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	M.Sc.
Module Tutor	Asst. Lec li Haider Sadeq	e-mail	ali.haider@uomus.edu.iq
Peer Reviewer Name		e-mail	
Review Committee Approval		Version Number	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			

<p><b>Module Aims</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Understand Database basic concepts</li> <li>2. Have the knowledge about database management system</li> <li>3. Have the knowledge about relational database</li> <li>4. Enables the students to design a relational database.</li> <li>5. Enables the learners to analyze the database and discover errors (redundancy and anomalies)</li> <li>6. Enables the learners to have the idea about how queries are executed in the database.</li> </ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Enabling the student to know and understand the theoretical principles of database and analyze database.</li> <li>2. Describe real world issues using ER model or Relational Model.</li> <li>3. Learn database languages and have the knowledge about SQL and have ideas how to deal with database management system.</li> <li>4. Understand how transactions are executed.</li> <li>5. Enable the student to know and understand how the query executed in the system.</li> <li>6. Gain and use Logical thinking.</li> <li>7. The ability to communicate and work in a team.</li> </ol>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	
<p><b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم</p>	
<p><b>Strategies</b></p>	<ul style="list-style-type: none"> <li>- Encourage students' participation in the class especially through questions and answers.</li> <li>- Encourage student critical thinking skills.</li> </ul>

<p><b>Student Workload (SWL)</b> الحمل الدراسي للطالب</p>			
<p><b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل</p>	93	<p><b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعياً</p>	6.2
<p><b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل</p>	82	<p><b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعياً</p>	5.4
<p><b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل</p>	175		

<p><b>Module Evaluation</b> تقييم المادة الدراسية</p>					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	<b>Assignments</b>	2	10% (10)	2, 12	LO #3, 4, 6 and 7
	<b>Projects / Lab.</b>	1	10% (10)	Continuous	

	<b>Report</b>	1	10% (10)	13	LO #5, 8 and 10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	7	LO #1-7
	<b>Final Exam</b>	2hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

### Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	<b>Material Covered</b>
<b>Week 1</b>	Introduction, Database definition, the purpose of database, Database Management System Definition and Advantages, File system and DBMS comparison.
<b>Week 2</b>	Database Abstraction, Definitions in Database (Instance and schema)
<b>Week 3</b>	Entity Relationship Model (Entities Relationships and Attributes) Relational Model (Tables, Records, keys), ER and Relational model examples
<b>Week 4</b>	Mapping ER and Relational models, Cardinality, Weak Entity
<b>Week 5</b>	Tables joining (Cross join, Inner join, Outer join)
<b>Week 6</b>	Indexing: Primary index and Index Update
<b>Week 7</b>	Secondary Index, Hash index
<b>Week 8</b>	Database Administrator, Database Design process
<b>Week 9</b>	Database Anomaly (redundancy, insertion, deletion, update)
<b>Week 10</b>	Normalization and Frist Example, Normalization Second Example, <i>Quiz</i>
<b>Week 11</b>	Transaction, Transaction Concurrent Execution
<b>Week 12</b>	Fundamentals of Relational algebra (Query processing)
<b>Week 13</b>	System Architecture
<b>Week 14</b>	Database Security, Access Control, Encryption
<b>Week 15</b>	<b>Preparatory Week</b>
<b>Week 16</b>	<b>Final Exam</b>

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	<b>Material Covered</b>
<b>Week 1</b>	Introduction, Network Definition, IP address, Client Server
<b>Week 2</b>	Virtual Memory Settings, Network Card Setting, Software Installation
<b>Week 3</b>	Introduction to SQL, Data types
<b>Week 4</b>	Create Table, Insert (into all and some columns)
<b>Week 5</b>	Select statement with Where Condition
<b>Week 6</b>	Alter table (Add Column, update data type, delete a column and rename column)
<b>Week 7</b>	Delete a table and rename table, Update field(s), Delete record(s)

<b>Week 8</b>	Table Joining
<b>Week 9</b>	String Functions
<b>Week 10</b>	Math Functions
<b>Week 11</b>	View
<b>Week 12</b>	Introduction to PL/SQL
<b>Week 13</b>	Conditions with examples
<b>Week 14</b>	Loops with Examples
<b>Week 15</b>	Final Exam Group 1
<b>Week 16</b>	Final Exam Group 2

### Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	Lectures created by Yasir. M. Ismaeel 2019.	Yes
<b>Recommended Texts</b>	Database Designs Concepts, 7th Edition, Abraham Silberschatz, Henry F. Korth, S. Sudarshan, 2020.	No
<b>Websites</b>	<a href="https://www.w3schools.com/sql/">https://www.w3schools.com/sql/</a> Lecturers YouTube channel	

### APPENDIX

#### GRADING SCHEME

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 - 49)</b>	<b>FX</b> – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	<b>F</b> – Fail	راسب	(0-44)	Considerable amount of work required

**Note:**

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.