



**COURSE DESCRIPTIONS**

<b>Faculty</b>	Science and Information Technology				
<b>Department</b>	Software Engineering			<b>NQF level</b>	6
<b>Course Title</b>	Databases	<b>Code</b>	503341	<b>Prerequisite</b>	501330
<b>Credit Hours</b>	3	<b>Theory</b>	2	<b>Practical</b>	2
<b>Course Leader</b>	Prof. Belal Zaqaibeh	<b>Email</b>	zaqaibeh@jadara.edu.jo		
<b>Lecturers</b>	Prof. Fawaz Al-Zaghoul Dr. Ayman Jaradat Dr. Enas Kanan	<b>Emails</b>	f.alzaghoul@jadara.edu.jo ay.jaradat@jadara.edu.jo e.kanan@jadara.edu.jo		
<b>Lecture time</b>	8:30 -10:00 10:00 – 11:30 11:30 – 13:00 14:30 – 16:00	<b>Classroom</b>	Labs		
<b>Semester</b>	Second 2023/2024	<b>Production</b>	2008	<b>Updated</b>	2024
<b>Type of Teaching</b>	<input checked="" type="checkbox"/> Face to Face <input type="checkbox"/> Blended <input type="checkbox"/> Online				

<b>Short Description</b>
<p>In this course, the students will be introduced to traditional files structure problems, database systems concepts, database systems evolution, database types, entity, attributes, relationship, and relationship degree, architecture, modeling methods using ERD, relational algebra, normalization and relational database constraints. SQL data definition and manipulation languages are also covered.</p>
<b>Course Objectives</b>
<ul style="list-style-type: none"> <li>▪ To let students, acquire knowledge and understand the advantages of a database systems approach, database architecture of ANSI/SPARC, the database models, Database design, data integrity and constrains types, relational algebra operators, and SQL.</li> <li>▪ Promote students’ skills to gather and analyze data for designing database schema and using and applying SQL language effectively to create and manipulate database.</li> </ul>

<b>Learning Outcomes</b>
<b>A. Knowledge - Theoretical Understanding</b>
a1. Describe database concepts, architecture, environment, models and characteristics. (K1)
<b>B. Knowledge - Practical Application</b>
a2. Design database tables using relational algebra, ERD, and normalization based on user requirements. (K4)
a3. Implement DDL, DML using SQL effectively. (K4)
<b>C. Skills - Generic Problem Solving and Analytical Skills</b>
b1. Analyze user requirements to design the database model. (S1)
<b>D. Skills - Communication, ICT, and Numeracy</b>

<b>E. Competence: Autonomy, Responsibility, and Context</b>			
c1. Work effectively taking both individual and collective responsibility to carry database tasks (C1)			
<b>Teaching and Learning Methods (TMs)</b>			
TM1. <input checked="" type="checkbox"/> Face to Face	TM2. <input type="checkbox"/> Online (synchronous)	TM3. <input type="checkbox"/> Online (asynchronous)	
TM4. <input type="checkbox"/> Brain Storming	TM5. <input type="checkbox"/> Using Video	TM6. <input checked="" type="checkbox"/> Discussions	
<b>Assessment Methods (AMs)</b>			
AM1. <input checked="" type="checkbox"/> Formative	AM2. <input checked="" type="checkbox"/> Quiz	AM3. <input checked="" type="checkbox"/> Assignment	AM4. <input type="checkbox"/> Homework
AM5. <input checked="" type="checkbox"/> Lab Test	AM6. <input type="checkbox"/> Project	AM7. <input type="checkbox"/> Presentation	AM8. <input type="checkbox"/> Experiment
AM9. <input checked="" type="checkbox"/> Midterm	AM10. <input checked="" type="checkbox"/> Final Exam		

<b>Course Contents</b>					
<b>Week</b>	<b>Hours</b>	<b>CILOs</b>	<b>Topics</b>	<b>Teaching &amp; Learning Methods</b>	<b>Assessment Methods</b>
1	3	a1	File based systems vs Database Management Systems and historical roots of DBS.	TM1, TM6	AM1, AM3
2	3	a1, a2, a3	Database systems concepts, architecture, Users and Database Administration and Tuning.	TM1	AM3, AM5, AM9, and AM10
3	3	a3, b1	Data Modeling.	TM1, TM6	AM3, AM5, AM9, and AM10
4	3	a2, a3, b1	Entity Relationship Model.	TM1	AM3, AM5, AM9, and AM10
5, 6	3	b1, c1	Basic SQL SQL DDL and DML commands.	TM1 (Lab)	AM3, AM5, AM9, and AM10
7	2	a1, a2, a3	Midterm Exam (20% + 10%)		AM9
8	3	a3, b1, c1	Enhanced Entity Relationship.	TM1, TM6	AM2, AM3
9	3	a3, b1, c1	The Relational Data Model.	TM1	AM2, AM3
10	3	a3, b1, c1	The Relational Data Model Constraints.	TM1	AM2, AM3, AM10
11	3	a3, b1	SQL: more in DML and Constraints.	TM1 (Lab)	AM2, AM3, AM10
12	3	a3, b1	Normalization	TM1, TM6	AM2, AM3, AM10

13	3	a1, a2, c1	Object-oriented Database	TM1	AM2, AM10
14	3	a1, a2, c1	Distributed database	TM1	AM10
15	2	a1, a2, a3, b1	End of Term Exam		AM10

Infrastructure	
<b>Textbook</b>	Fundamentals of database systems, Elmasri Navathe, Addison Wesley
<b>References</b>	Database systems. C.S. Date, Addison Wesley
<b>Required reading</b>	
<b>Electronic materials</b>	<ul style="list-style-type: none"> <li>• EBSCO Database, lib</li> <li>• Labs and Power Point slides on (elearning.jadara.edu.jo).</li> </ul>
<b>Other</b>	

Course Assessment Plan							
Assessment Method		Grade	CILOs				
			a1	a2	a3	b1	c1
<b>First (Midterm)</b>		30	15		10	5	
<b>Second (if applicable)</b>		0					
<b>Final Exam</b>		50	10	10	10	10	10
<b>Coursework</b>		20					
<b>Coursework assessment methods</b>	Assignments						
	Case study						
	Discussion and interaction						
	Group work activities						
	Lab tests and assignments						
	Presentations						
	Quizzes						
<b>Total</b>		<b>100</b>					

Plagiarism
<p>Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code).</p> <p>Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.</p>