



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Computer Information Systems Department

CIS221 Fundamentals Of Database Systems

First Semester 2020-2021

Course Catalog

3 Credit Hours. This course teaches the fundamentals of databases. These include basic concepts and terminology (database, database administrator, database management systems, end- users, etc.), characteristics of the database approach, the three level-schema architecture and data independence, the Entity Relationship Model (notations and concepts), Relational Model (concepts, constraints and operations), Relational Algebra, ER to relational mappings, SQL, examples of DBMSs, functional dependencies and normal forms, storage structures.

Text Book

Title	Fundamentals of Database Systems
Author(s)	R. Elmasri and S. Navathe,
Edition	6th Edition
Short Name	Textbook
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Reference	Modern Database Systems	Jeffrey A. Hoffer, Mary Prescott, Fred McFadden	7th Edition	

Instructor

Name	Mr. Hesham Abandeh
Office Location	A2 L3 Engineering Building
Office Hours	Sun : 13:00 - 14:00 Mon : 09:30 - 11:30 Tue : 13:00 - 14:00 Wed : 09:30 - 11:30
Email	heshama@just.edu.jo

Class Schedule & Room
<p>Section 1: Lecture Time: Sun, Tue : 08:30 - 10:00 Room: منصة الكترونية</p> <p>Section 2: Lecture Time: Sun, Tue : 10:00 - 11:30 Room: منصة الكترونية</p> <p>Section 3: Lecture Time: Sun, Tue : 11:30 - 13:00 Room: منصة الكترونية</p> <p>Section 4: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: منصة الكترونية</p>

Teaching Assistant
(Section 4), (Section 3), (Section 2), (Section 1), Mrs. Ahlam Khatatbeh(), Miss Lina Abu-Wardih(), Mrs. Noor Alhussein()

Prerequisites		
Line Number	Course Name	Prerequisite Type
1732112	CS211 Data Structures	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Databases and Database Users	CH1 From Textbook
Weeks 2, 3	Database System Concepts and Architecture	CH2 From Textbook
Weeks 4, 5	Conceptual Data Modelling Using Entities and Relationship	CH7 + lecture notes From Textbook
Weeks 6, 7	The Basic (Flat) Relational Data Model	CH3 From Textbook
Week 8	Mapping a Conceptual Design into a Logical Design	CH9 From Textbook
Weeks 9, 10	The Relational Algebra	CH6 From Textbook
Weeks 11, 12	SQL - The Relational Database Standard	CH4 From Textbook
Week 13	SQL: Advanced Queries	CH5 From Textbook
Weeks 14, 15	Database Design Theory: Introduction to Normalization Using Functional Dependencies	CH14 From Textbook

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Define the fundamental database concepts. [1SO1]	2%	
Describe data models, schemas, instances, three schema architecture and DBMS component modules. [1SO1]	3%	
Describe the Entity-Relationship (ER) modeling tools. [1SO1, 1SO2]	20%	
Define the relational data model, its constraints, and the relational database schemas. [1SO1, 1SO2]	10%	
Convert a conceptual data model such as ER diagram into a relational logical schema using various mapping algorithms. [1SO1, 1SO2]	15%	
Design queries in different forms including: relational algebra and SQL statements to answer database queries. [1SO1, 1SO2]	35%	
Apply normalization techniques to transform database into forms that are most suitable to the applications at hand. [1SO1, 1SO2]	15%	

Relationship to Program Student Outcomes (Out of 100%)																
A	B	C	D	E	F	G	H	I	J	K	SO1	SO2	SO3	SO4	SO5	SO6
											52.50	47.50				

Evaluation	
Assessment Tool	Weight
Mid exam	30%
Final Exam	50%
Quizzes	10%
Lab	10%

Policy	
Course Objectives	<p>The main objectives of the course are: - Learn the fundamental database concepts and systems methodologies to design database systems. (10%) - Understand data modeling using ER Model and EER Model and the mappings to relational model (25%) - Understand relational database model and database creation using the specified DBMS in DB lab (25%) - Understand Relational Algebra and Structured Query Language (25%) - Understand functional dependencies and database normalization (15%). Teaching & Learning Methods - Class lectures, lecture notes, homework assignments, and projects are designed to achieve the course objectives. - You should read the assigned chapters before class, complete assignments on time, participate in class discussions among other things to understand the material. You should ask questions, whether in class or during office hours. - You are responsible for all material covered in class. - If you have any concerns, please communicate them to the instructor in class, in office or by email.</p>

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Essential Notes	Exams : - May include: Definitions, True/False, Multiple-Choice, Analysis and Descriptive formats. - Instructions on the first page of the exam are quite important. - Not abiding by the rules is a reason for dismissal from the exam.
Additional Notes	Makeups: - Makeup exam should not be given unless there is a valid excuse. Drop Date: - Last day to drop the course is before the 12th week of the current semester Cheating: - Standard JUST policy will be applied. Attendance: - Excellent attendance is expected - According to the JUST policy, a student will receive the grade of ZERO (35%) if he misses more than 20% of the classes - Attendance will be taken by calling the names or passing a sign-up sheet - If you miss a class, it is your responsibility to find out about any announcements or assignments you may have missed Workload: - Average work-load student should expect to spend is 6 hours/week. Graded Exams: - Graded exam papers will be returned within a week. Participation: - Participation in the class will positively affect your performance. - Disruption and side talks will possibly result in dismissal from class

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