	Subject	CMS 316 Database Management Systems -3 KU (6	
		ECTS) credits	
	Department	Computer Science	
	Program	Undergraduate	
Idontification	Term	Fall 2023	
Identification	Instructor	Mohammad Ali AL-Qudah	
	E-mail:	Mohammad.ali@khazar.org	
	Phone:	(+994 51) 30-530-89	
	Classroom/hours	41 Mehseti str. (Neftchilar campus)	
	Office hours		
Dronoquisitos	CMS 215 Data Str	ucturas	
I anguaga	CIVIS 213 Data Structures		
	Compulsor		
Compulsory/Elective	Compulsory		
	Core textbooks:		
	FUNDAMENTALS	S OF Database Systems SIXTH EDITION Ramez Elmasri	
Required textbooks			
and course materials			
	Class lasturas la	active notes homework assignments and projects are	
	designed to achieve	the source objectives. You should read the assigned	
	aborters before al	ve the course objectives You should lead the assigned	
	chapters before cla	ass, complete assignments on time, and participate in class	
Course outline	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 i	n class If you have any concerns, please communicate	
	them to the instruc	tor in class, in the office, or by email.	
	The main objectives of the course are: - Learn the fundamental database concepts and		
	systems methodologies to design database systems. (10%) - Understand data model		
	using ER Model and EER Model and the mappings to relational model - Understand		
	relational database model and database creation using the specified DBMS in DB lab -		
	Understand Relational Algebra and Structured Ouery Language - Understand functional		
	dependencies and database normalization Teaching & Learning Methods - Class		
Course objectives	lectures lecture notes homework assignments and projects are designed to achieve the		
Course objectives	course objectives	You should read the assigned chapters before class complete	
	course objectives	rou should read the assigned enapters before class, complete	
	assignments on time, participate in class discussions among other timings to understand the material. You should ask questions, whether in class or during office house.		
	the material. You should ask questions, whether in class or during office hours You		
	are responsible for a	all material covered in class If you have any concerns, please	

Learning outcomes	 Upon completion of this course, the students must be able to: Define the fundamental database concepts. Describe data models, schemas, instances, three schema architectures, s, and DBMS component modules. Describe the Entity-Relationship (ER) modeling tools. Define the relational data model, its constraints, and the relational database schemas. Convert a conceptual data model such as an ER diagram into a relational 				
	 logical schema using various mapping algorithms. Design queries in different forms including relational algebra and SQL 				
	statements to answer dat	abase queries.	_		
	 Apply normalization techniques to transform the database into forms that are most suitable to the applications at hand 				
	Lecture	TT	x		
Teaching methods	Group discussion		x		
reaching methous			<u>х</u>		
	Lab Methods	Date/deadlines	A Parcantaga (%)		
	Midtorm Exom	Date/deadines	30%		
	Assignment and		50 % 10 %		
Evolution	Assignment and		10%		
Evaluation	Project		20%		
	Final Exam		40%		
	Tinai Exam Totol		40 % 100 %		
D.12	Droject description		100 %		
Policy	reject description	a you can understand them	batter and work on them		
	accordingly Completing	projects is a great way to	show your knowledge and		
	strengthen your skills. Y	ou can choose a project acco	rding to your interests and		
	expertise. You can bring v	our own ideas also some idea.	Students should present their		
	topic by the end of Decem	ber.	ľ		
	1. E-commerce Platform				
	You must've seen multiple online retail platforms. Some great examples of such				
	platforms are Amazon and	Flipkart. In this DBMS project	, you'll have to develop a		
	similar e-commerce platform, where a customer can register and buy a product.				
	2. Inventory Management				
	Every organization has an inventory to manage, which takes up a lot of resources.				
	Usually, an organization would assign the duty of inventory management to two or				
	more people who it keep an eye on it and ensure that all the supplies are available. If any item is missing, the manager will order the same. This system works affectively if				
	the organization is tiny, but that's not always the case				
	3. Railway System				
	The railway network of our country is one of the most complex public establishments				
	You can design a database solution for this network and make the management of the				
	same more natural. Your system should have the following pieces of information:				
	 Station names Tracks that connect those stations (to keep things simple, you can assume that 				

ks 1, 2	Databases and Database Users	CH1 From Textbook	
Week	Topics	Textbook/Assignments	
	Ethics Students should not arrive in late to class. All cell p stowed away before entering class. Use of any electron classroom and violators will be punished accordingly	hones must be turned off and ic devices is not allowed in the	
	Professional behavior guidelines The students shall behave in the way to create favorable academic and profess environment during the class hours. Unauthorized discussions and unethical beh are strictly prohibited.		
	Cheating/plagiarism Cheating or other plagiarism during the Quizzes, Mid will lead to paper cancellation. In this case, the student without any considerations.	l-term and Final Examinations will automatically get zero (0),	
	Withdrawal (pass/fail) This course strictly follows grading policy of the Scho Science. Thus, a student is normally expected to achi pass. In case of failure, he/she will be required to repea or year.	ool of Engineering and Applied eve a mark of at least 60% to t the course the following term	
	 many instructors, one instructor can only work in one or organizational structure of a college is quite complicate manage. Preparation for class The lecture material will focus on the major points intra assigned chapters and having some familiarity with the assist your understanding of the lecture. 	department. As you can see the d and requires a lot of effort to oduced in the text. Reading the n before class will greatly	
	 Train IDs with names Schedules of the trains 4. College Data Management Colleges have multiple departments, and every dep These departments have a head (HOD) and various inst 	artment offers many courses. tructors. Even though there are	
	only one track runs between two stations)		

Weeks 1, 2	Databases and Database Users	CH1 From Textbook
Weeks 2, 3	Database System Concepts and Architecture	CH2 From Textbook
	Conceptual Data Modelling Using Entities and Relationship	CH7 + lecture notes From
Weeks 4, 5		Textbook
	The Basic (Flat) Relational Data Model	CH3 From Textbook
Weeks 6, 7		
	Mapping a Conceptual Design into a Logical Design	CH9 From Textbook
Week 8		

	The Relational Algebra	CH6 From Textbook
Weeks 9, 10		
	SQL - The Relational Database Standard	CH4 From Textbook
Weeks 11, 12		
	SOL: Advanced Queries	CH5 From Taythook
Week 13	SQL. Advanced Queries	CH5 FIOII Textbook
Week 14,15	Database Design Theory: Introduction to Normalization Using FunctionalDependencies	CH14 From Textbook
	Final Exam	

syllabus is a guide for the course and any modifications to it will be announced in advance.