CS
Department

Advanced Databases Course Outline

Second Semester of 2019 Academic Year

Course Information:	
Course Code	6803435-3
Pre-Requisite	Fundamentals of Database Systems, 6803412-3
Post-Requisite	Research Project, 6803519-4
Course Level	Level Eight
Time	Monday, from 10:45 A.M. to 01:00 P.M.
Teacher Name	Mariah Sami Ahmed Khayat
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Course Description:
The enhanced entity-relationship (EER) model. Relational database design by ER- and EER-to-relational mapping. Concepts for object databases. Object database standards, languages, and design. Object-relational databases. XML databases. Database transaction and query processing. Distributed databases. Database security. Database tuning and recovery.

Course Reference Book:
Database Systems: Models, Languages, Design And Application Programming, 7th Edition, Pearson International Edition.

Course Evaluation:	
Midterm	25%
Homework-1	5%
Homework-2	5%
Quiz	5%
Project	20%
Final Exam	40%
Sum	100%

Kingdom of Saudi Arabia
المملكة العربية السعودية
Ministry of Education
وزارة التعليم
Umm AlQura University
جامعة أم القرى
Adham University College
الكلية الجامعية بأضم
Computer Science Department
قسم الحاسب الآلي

Course Syllabus:

Week	Syllabus
1	
2	
3	Advanced relational algebra and SQL: Set vs. bag semantics, NULL values, Distinct operator, Semi join, left join, right join, SQL constraints and triggers, Data mining and OLAP operators: Group By, Roll Up, Cube, Pivot
4	The Enhanced Entity-Relationship (EER) model and EER to relational mapping
5	Object and Object-Relational Databases: Concepts, Models, Languages and Standards
6	XML for semi-structured data: XML language and its tree representation, XML schema language, XPath/XQuery languages, Translation of an XML schema into a relational schema
7	Database File Indexing Techniques, B-Trees, and B+-Trees
8	Query Processing and Query Optimization Techniques
9	**Midterm**
10	Database Tuning and Physical Design Issues
11	Advanced Database Transaction Processing
12	Database Recovery Protocols
13	Distributed Databases (DDB): Horizontal/vertical fragmentation, Basic distributed query processing, Semi-join query processing
14	
15	Database Security + Project Discussion
16	**Final Exam**
17	

Remember, *"Success is 1% inspiration and 99% perspiration"* ☺

If you have any questions, feel free to ask me through my email
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