AIIQ3211: DATABASE CONSTRUCTION & MANAGEMENT

Course Description

Students will learn how to conceptualize, design, develop, implement and administer database systems. The course introduces students to latest development in database technology and its applications. The course covers database design - entity modeling and normalization; RDBMS, OODBMS and SQL; transaction management and concurrency control; database security; distributed database systems; data warehousing, data mining, and multidimensional databases; advanced applications of databases. This course places more emphasis on Database Management.

Course Objectives

This course aims to provide students with an overview of database systems. The course will provide understanding of fundamental database system concepts and an understanding of the theoretical foundations of databases in the business environment and prepare students to undertake higher courses in designing and programming technologies.

Detailed Course content

Week	Discussion topics	Assignments/Reading guide
Week 1	• Introduction to Database management and construction. • Definition of Database management systems.	In addition to lectures, group discussions, presentations and research will be the method of learning.
Week 2	• Introduction to the database approach. • Database management systems.	
Week 3	• Database models and architectures. • Database requirement.	
Week 4	• Types of database system structures. • Normalization.	
Week 5	C.A.T. 1: SIT-IN	
Week 6	• Database design. • System analysis for databases: requirements analysis, requirements specification.	
Week 7	• Database objects. • Database manipulation. • Tables'. Modules.	In addition to lectures, group discussions, presentations and research will be the method of learning.
Week 8	• Database management issues: Database security and integrity.	

Week 9	CAT 2.	CAT 2
Week 10	• Relationships. • SQL • Query languages.	In addition to lectures, group discussions, presentations and research will be the method of learning.
Week 11	• Emerging issues in database management	
Week 12	Exams	End of Semester Exams
Week 13	Exams	End of Semester Exams

Course Texts
1. Connolly and Begg, *Database Systems*, Addison Wesley

2. Date, *An Introduction to Database Systems*, Addison Wesley

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