IT-370 Database Systems

Instructor: **Asif Sohail**   Semester: **Fall 2020**

Goals and Objectives

- To understand the basic concepts of Database
- To discuss the advantages of database system over conventional file system
- To develop an understanding of database architecture and its components
- To make a logical and analytical Comparison of Different Data Models
- To provide a strong understanding of relational data model
- To develop Entity Relationship Model
- To develop Good Skills in SQL (Structured Query Language)
- To provide a strong understanding of database design
- To provide strong dimensions, strengths and future prospects of Database Systems
- To Familiarize with the recent and the future trends

Text Books

- Carlos Coronel, Steve Morris, "Database Systems" Design, Implementation, Management, 13th Edition"
- Introduction to PL\SQL by Oracle Press

Reference Material

A. Jeffrey Hoffer, "Modern Database Management " Design, Implementation, Management, 11th Edition"
B. Thomas Connolly, "Database Systems: A Practical Approach to Design, Implementation and Management (6th Ed.)"
C. Elmasri, "Fundamentals of Database Systems: (7th Ed.)"
D. C. J. DATES "Database Management Systems"8th Ed."

Sessional

Instrument	Marks
Quizzes	12
Assignments	05
Home works	03
Project + Presentation	05

Weekly Lecture Plan

W#	Topics	W#	Topics
1	Intro. to DBS, Database Architecture	9	Functional Dependency, Armstrong Axioms, Normalization-I
2	Intro. to SQL, Relational Algebra, SELECT Statement, Data Modeling	10	Normalization-II, Data Manipulation (DML)
3	Database Life Cycle (DBLC) Logical Data Models, Relational Keys, SQL Special Operators, Character Functions	11	Database Design, Database Objects (Views, Sequence, Index, Synonyms)
4	Integrity Constraints & Rules, SQL Functions	12	Transaction Processing, Controlling User Rights & Access (DCL)
5	ER Model, SQL Aggregate Functions	13	Concurrency Control
6	Enhanced ER Model, SQL Joins	14	Distributed Databases, Procedural SQL
7	Transforming ERD into Relations, Subqueries	15	Stored Procedures, Triggers, Big data, NoSQL
8	Creating Database Tables, Revision	16	Data Quality and Integration, Revision