CMPT 354 - D200 Database Systems I

Instructor(s): Ouldooz Baghban Karimi

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Calendar Objective/Description:
Other related issues such as database administration, data dictionary and security.

Instructor's Objectives:
Staring with discussions on data-intensive applications and relevance of relational databases, this course will cover basic theoretical foundation and an introduction to practical tools, and the language for relational databases usage, design, implementation, management, and optimization.

Prerequisites:
CMPT 225, and (MACM 101 or (ENSC 251 and ENSC 252)).

Topics:
- Introduction: Relational Database Definition, History, Applications, and Trends
- Relational Data Model, and Relational Algebra (and Calculus)
- Introduction to SQL: Create, Modify, and Query Relational Databases
- Database Design: Steps and Procedures
- Entity Relationship Model: E/R Diagram Design and Translation to Relational Databases
- Design Theory: Functional Dependencies, Normalization (1NF, 2NF, 3NF, BCNF)
- Constraints and Triggers
- Views and Indexes
- Query Processing and Optimization
- Transaction Processing: Anomalies, ACID properties, Concurrency Control
- Database Applications: SLI, CLI
- Discussions: RDBs and Data-Intensive Systems, OLAP, OLTP, NoSQL, NewSQL, Consistency, DWHs and Lakes

Grading:
Assignments (30%) Quizzes (10%) Midterm (20%) Final (40%)

Recommended Books:

Reference Books:
9780131873254, Second Edition
Academic Honesty Statement:

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