ICS 311T: Database Management Systems Theory Seminar

A. Course Description

Credits: 4

Prerequisites: MATH 215 Discrete Mathematics (may be taken concurrently).

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week:

MnTC Goals: None

Covers concepts and methods in the definition, creation and management of databases. Emphasis is placed on usage of appropriate methods and tools to design and implement databases to meet identified business needs. Topics include conceptual, logical and physical database design theories and techniques, such as use of Entity Relationship diagrams, query tools and SQL, evaluation of database management systems; responsibilities of data and database administrators; database integrity, security and privacy; and current and emerging trends. Database management systems such as MySQL are used in the course. Overlap: ICS 311 Database Management Systems.


C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Create SQL databases and populate and maintain/use data in the database (using INSERT, UPDATE, DELETE, and SELECT commands).
2. Gather requirements and create conceptual, logical, and physical Entity Relationship Diagrams based on requirements.
3. Create data warehouses for mining and information retrieval.
4. Design for transaction management, concurrency control, and recovery.
5. Create indexes and estimate mass storage sizes.
7. Relate database query language constructs to relational algebra and relational calculus operators.
8. Take advantage of query optimization alternatives.

E. Learning Outcomes (MN Transfer Curriculum)

This contains no goal areas.

G. Special Information

Overlap: ICS 311 Database Management Systems. Note: Students are responsible to both be aware of and abide by prerequisites for ICS courses for which they enroll, and will be administratively dropped from a course if they have not met prerequisites.