

CSCE 520 - Database System Design

- **Credit Hours:** 3 hours
- **Contact Hours:** 3 lecture hours
- **Instructor:** Drs. Csilla Farkas and Stephen Fenner
- **Required Textbooks:** J. D. Ullman and J. Widom. *A First Course in Database Systems* (Third Edition). Pearson/Prentice Hall, 2008.
- **Bulletin Description:** Database management systems; database design and implementation; security, integrity, and privacy.
- **Prerequisites:** CSCE 240 or GEOG 563
- **Required Course** in CIS and **Selected Elective** in CE, CS
- **Course Outcomes:** Students will be able to:
 1. Describe the major components of a database management system and state their functions and purpose.
 2. Develop a data model for a database application using an appropriate modeling tool such as ER diagrams.
 3. Use the concepts of data normalization to develop well-designed database applications.
 4. Implement a database application using an appropriate relational DBMS.
 5. Use SQL to access database information.
 6. Describe major operational issues associated with database applications, including transaction management, security, and integrity.

- **Student Outcomes addressed by course**

Program	Student Outcomes Addressed
Computer Engineering	N/A
Computer Information Systems	1, 2, 6
Computer Science	N/A

- **Topics covered**

1. E/R diagrams
2. The relational database models
3. Relational algebra
4. SQL
5. XML and semi-structured databases
6. Datalog
7. Transactions
8. Access control