

CSCE 520 - Database System Design

Credit Hours: 3 hours

Contact Hours: 3 lecture hours

Instructor: Drs. Farkas and Fenner

Required Textbooks: J. D. Ullman and J. Widom. *A First Course in Database Systems (Third Edition)*. Pearson/Prentice Hall, 2008.

Recommended: R. Sunderraman. *Oracle9i Programming: A Primer*. Addison-Wesley, 2004.

Bulletin Description: Database management systems; database design and implementation; security, integrity, and privacy.

Prerequisites: CSCE 240 or GEOG 563

Required Course in CIS, and SE in CE, CS programs

Learning 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 (Program) Outcomes addressed by course (Detailed mappings of these course outcomes to the Student Outcomes of the programs are in the detailed syllabus and the Assessment plan.)

Student Program Outcomes	SOs supported	SOs Moderately supported
Computer Engineering		
Computer Information Systems	c, i, g, IS-j	e
Computer Science	c, i, g	e

Topics covered and approximate weight:

1. E/R diagrams,
2. the relational database model,
3. relational algebra,
4. SQL,
5. XML and semistructured databases,
6. Datalog,
7. transactions,
8. access control.