

CSC 425 - DATA BASE MANAGEMENT SYSTEMS

CREDIT HOURS: 3

PREREQUISITES: CSC 241; CSC 321 or 331; three additional advanced hours of computer science excluding CSC 340, 350, and 385.

GRADE REMINDER: Must have a grade of C or better in each prerequisite course.

CATALOG DESCRIPTION

Study of database management systems. Design and implementation of applications using database management systems.

PURPOSE OF COURSE

The purpose of this course is to provide a broad knowledge of the fundamental concepts of database processing. This knowledge should enable the student to know enough of the current technology to evaluate the applications of database management systems (DBMS) in given situations, to participate in the design of databases, to understand how application programs interface with processing, recovery, and security. Students should acquire a knowledge of relational database models and the usage of relational languages.

NOTE: Graduate students taking CSC 425 for graduate credit will be expected to complete additional requirements, including but not limited to special projects, class presentations, relevant research, and supplemental evaluation (i.e., additional questions, quizzes, tests). Graduate students are expected to perform at a higher level than undergraduates. Students should contact the course instructor early in the semester (i.e., before the end of the add/drop period) to determine the specific additional requirements.

EDUCATIONAL OBJECTIVES

Upon successful completion of the course, students should be able to:

1. Demonstrate a broad knowledge of the fundamental concepts of database technology.
2. Evaluate the applications of database management systems, and to participate in the design of databases.
3. Describe the main issues of database administration and control.
4. Identify current trends of database management systems.
5. Design and implement a functional limited-aspect database management system.

CONTENT

Hours

Databases, Files Overview	4
The Relational model	13
Architecture, DDL, DML	
Normalization	3

Database design	12
Conceptual, Logical, Physical, Security Project	
Database administration and control	4
Current topics	6
Distributed databases	
Client-server databases	
Data warehouses	
Object-oriented databases	
Exams (plus final)	3
	TOTAL 45

REFERENCES

- Connolly, T. and Begg, C., Database Systems: A Practical Approach to Design, Implementation, and Management, 4th Ed., Addison-Wesley, 2005.
- Date, C. J., An Introduction to Database Systems, 8th Ed., Addison-Wesley, 2004.
- Elmasri, R. and Navayhe, S. B., Fundamentals of Database Systems, 4th Ed., Addison-Wesley, 2004.
- Kifer, Bernstein, and Lewis, Database Systems: An Application-Oriented Approach, 2nd Ed., Addison-Wesley, 2005.
- Kroenke, D. M., Database Processing: Fundamentals, Design, and Implementation, 9th Ed., Prentice Hall, 2004.
- Ricardo, C.M., Databases Illuminated, Jones and Bartlett, 2004.
- Rob, P. and Coronel, C., Database Systems: Design, Implementation, and Management, 4th Ed., Course Technology, 2002.