

University of Arkansas - Fort Smith
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General Syllabus

CS 2013 Database Systems I

Credit Hours: 3

Lecture Hours: 3

Laboratory Hours: 0

Prerequisite: CS 1014 Foundations of Programming I

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Introduction to database management systems, implementation, and theory.

B. Additional Information

Information derived from data is important to the management, productivity and differentiation of an organization. Data must be efficiently collected, organized, retrieved and managed to make it meaningful to the organization.

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Explain information management concepts.
2. Explain core database design issues, problems and solutions including normalization, dependencies and relational design principles.
3. Utilize SQL to extract data from a relational database management system.
4. Identify and describe major functions and components of relational database management systems.
5. Explain the major components of a database management system.
6. Interpret knowledge of transactions within database management systems.

B. University Learning Outcomes (ULO)

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students will identify a problem related to database systems, break it down into its component parts, and develop an algorithm for solving the problem.

Quantitative Reasoning: Students will develop algorithms for solving problems involving formulas and numbers

III. Major Course Topics

- A. Information management concepts and fundamentals
- B. Relational database management systems
- C. Query languages
- D. Data organization architecture
- E. Entity Relationship (E-R) modeling
- F. Normalization
- G. Indexing
- H. Transactions
- I. Data security