

University of Arkansas - Fort Smith
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General Syllabus

CS 2043 Database Systems II

Credit Hours: 3

Lecture Hours: 3

Laboratory Hours: 0

Prerequisites: CS 1024 Foundations of Programming II and CS 2013 Database Systems I

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Provides comprehensive review of database management architecture, design and implementation issues.

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. It is the role of the IT professional to develop, deploy, manage and integrate data and information systems to support the organization. This course includes the collection, organization, modeling, transformation, presentation, safety and security of the data and information.

II. Student Learning Outcomes

A. Subject Matter

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

1. Compare and contrast advanced implementations of database management systems and database management system architecture.
2. Create and design comprehensive data-driven applications using database management systems.
3. Explain the key concepts of transactions, performance, and optimization.
4. Optimize system performance through the utilization of memory, caching, indexing and performance-enhancing utilities.

B. University Learning Outcomes (ULO)

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students will identify a problem, break it down into its component parts, and develop an algorithm for solving the problem using SQL queries and programming languages.

III. Major Course Topics

- A. Database architecture
- B. Buffer pools
- C. Indexing
- D. Optimization
- E. Transactions
- F. Concurrency
- G. Recovery
- H. Performance
- I. System utilities