CSC/CPE 468 Database Management Systems Implementation

1. CSC/CPE 468 Database Management Systems Implementation

2. credit units: 4  contact hours: 6

3. Course Coordinator: Alexander Dekhtyar

   a. References: Oracle8i System Documentation (available on-line)

5. a. Course Description:  Data structures and algorithms used in the implementation of database systems. Implementation of data and transaction managers: access methods interfaces, concurrency control and recovery, query processors and optimizers. Introduction to implementation of distributed database systems. 3 lectures, 1 laboratory. Crosslisted as CPE/CSC 468.

   b. Prerequisite: CSC/CPE 365.

   c. Required/Elective/Selective Elective for CPE, CSC, EE, SE

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6. a. Course Goals/Outcomes
   The student will be able to:
   - Learn the DBMS architecture and how it fits into the overall computer systems architecture
   - Learn cost-based performance analysis and optimization
   - Learn algorithms and data structures used in query processors and transaction managers
   - Learn how SQL is implemented.

   b. How Student Outcomes addressed
   (“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

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7. Major Topics Covered: (number of lecture hours each)
• DBMS Systems Architecture (2 hours)
• Storage Management and Access Method Interface (5 hours)
• Query processing and optimization algorithms (7 hours)
• Transaction scheduler, concurrency control (4 hours)
Log-based recovery managers (5 hours)