CSC 468 – Database Management Systems Implementation

1. CSC 468 – Database Management Systems Implementation

2. credit units 4 contact hours 6

3. Course Coordinator: Alex 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.

   b. Prerequisite: CSC 365.

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

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6. a. Course Learning Objectives
The student will be able to:
   • Explain the DBMS architecture and how it fits into the overall computer systems architecture
   • Perform cost-based performance analysis and optimization
   • Evaluate and implement algorithms and data structures used in query processors and transaction managers
   • Explain how SQL is implemented.

b. Level at which Student Outcomes are addressed
(“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

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7. **Major Topics Covered: (number of lecture hours per)**

- 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)