CSC/CPE 560 Database Systems

1. CSC/CPE 560 Database Systems

2. credit units 4  contact hours 4

3. Course Coordinator: Alexander Dekhtyar

4. Textbook:(and/or other required material) Materials from journals and conferences in the fields of databases and data mining.

5. a. Course Description: Current topics in database systems: advanced query processing, OLAP and data warehousing, semistructured data model, XML and XML-related technologies. 4 seminars.

   b. Prerequisite: CSC/CPE 365 and graduate standing, or consent of instructor.

   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:
   • The student will be exposed to current research topics in the data management area and perform research on some of these topics.

   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)
   • Topics covered depend on the instructor and vary year-to-year to reflect state of the art in the field of databases.

   • A sample list of topics (based on the CSC 560 course taught in Fall 2012):
   • A retrospective of database research in the past 25 years
   • Current research challenges in the field of databases
• ACID transaction model: benefits and disadvantages
• The CAP theorem and its effect on distributed database management systems
• NoSQL database management system architectures:
  • key-value stores
  • document databases
  • column stores