COURSE DESCRIPTION

<table>
<thead>
<tr>
<th>Course No. Course Type</th>
<th>CSC 471 Sel. Elect.</th>
<th>Course Title</th>
<th>Principles of Database Systems</th>
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</thead>
<tbody>
<tr>
<td>Sem. Hours</td>
<td>3</td>
<td>Coordinator</td>
<td>Lixin Fu</td>
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</tbody>
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Current Catalog Description:
Contemporary database systems. Emphasis on query processing, design, and implementation of applications in relational (SQL) databases. Introduction to other database models such as XML, object-oriented, and deductive.

Textbook:

References:
None

Course Outcomes:
Upon successful completion of the course, students should be able to:
1. understand ER data model (CO1)
2. learn relational model, SQL, relational algebra (CO2)
3. learn to design databases (CO3)
4. database applications (CO4)
5. complete a real world, comprehensive database project (CO5)
Prerequisites by Topic:
Students must have
- a grade of at least C (2.0) in CSC 330, or
- permission of instructor

Major Topics Covered in the Course:
- Introduction
- Entity-Relationship Model
- Relational Data Model and Relational Algebra
- SQL Query Language
- Relational Database Design Including Functional Dependencies and Normalization
- Application Design and Development
- XML

Estimated Curriculum Category Content (Semester hours):

<table>
<thead>
<tr>
<th>Area</th>
<th>Core</th>
<th>Advanced</th>
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<th>Advanced</th>
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<tbody>
<tr>
<td>Algorithms</td>
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<td>Software design</td>
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<td>Data structures</td>
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<td>Prog. Languages</td>
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<td>Comp Org &amp; Arch</td>
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