Course Syllabus

CS 6360 Database Design; Spring 2017;  
Class URL: http://www.utdallas.edu/~rbk/teach/2017s/db.html

Professor Contact Information
Balaji Raghavachari; (972) 883-2136; rbk@utdallas.edu; ECSS 4.225;
Office hours: Tue/Thu 9:00-9:45 AM, 2:20-3:00 PM, and days when class meets (before and after class).

Course Pre-requisites, Co-requisites, and/or Other Restrictions
CS 5343 or equivalent (Data structures and algorithms): Lists, stacks, queues, trees, search trees, hashing, 

Course Description
Topics: Introductory concepts: Data models, ER diagrams. Relational Model, Query Languages: Relational 
Data Organization, Index Structures. Query Optimization. Transaction Processing: Concurrency control, 

Student Learning Objectives/Outcomes
Study methods, principles and concepts that are relevant to the design of database systems. Analyze issues 
related to database systems from several perspectives (designer, programmer, user, administrator).

Required Textbooks and Materials

Grading Policy
Score minimum requirement in every category to earn a grade (homeworks, projects, exams):
90% for A; 85% for A-; 80% for B+; 75% for B; 70% for B-; 65% for C+; 60% for C

Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Chapter</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 14</td>
<td>1,2,5</td>
<td>Introduction, History of DB, DB Concepts, Relational model</td>
</tr>
<tr>
<td>2</td>
<td>Jan 27</td>
<td>5,6,7</td>
<td>Relational model, Relational Algebra, SQL</td>
</tr>
<tr>
<td>3</td>
<td>Jan 28</td>
<td>7,8</td>
<td>Relational model, SQL, Relational Calculus, Embedded SQL</td>
</tr>
<tr>
<td>4</td>
<td>Feb 11</td>
<td>3,4,9</td>
<td>Data modeling, ER model, EER model, UML</td>
</tr>
<tr>
<td>5</td>
<td>Feb 24</td>
<td>14</td>
<td>Database design process, Functional dependencies</td>
</tr>
<tr>
<td>6</td>
<td>Feb 25</td>
<td>15</td>
<td>Normal forms, Normalization algorithms</td>
</tr>
<tr>
<td>7</td>
<td>Mar 11</td>
<td>10,11</td>
<td>Practical aspects of DB, SQL programming, Demo DB application</td>
</tr>
<tr>
<td>8</td>
<td>Mar 24</td>
<td>16,17,18,19</td>
<td>Files, Data storage, Indexing, Optimization</td>
</tr>
<tr>
<td>9</td>
<td>Mar 25</td>
<td>20,21,22</td>
<td>Transaction processing, Serializability, Recovery</td>
</tr>
<tr>
<td>10</td>
<td>Apr 8</td>
<td>30</td>
<td>Security, Case studies, New directions</td>
</tr>
</tbody>
</table>

Course & Instructor Policies
- Most classes will have problem solving sessions. Homework assignments, and projects will be 
  assigned regularly. Exams will be announced later.
- Regular class attendance and participation is expected and is the responsibility of each individual.
  There is a strong correlation between regular class attendance and good performance.

See also UTD's policies at http://go.utdallas.edu/syllabus-policies