INFO 5707  Data Modeling for Information Professionals

Instructor

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Course Description

This course is designed to meet the needs of the information industry for data modeling and database design. It focuses on the application of data modeling technologies to information science practice and research. The class project will provide hands-on experience in designing and implementing database systems for information service oriented organizations.

Course Objectives

Upon completion of this course, students should be able to:
  • Understand the basic concepts of database and data modeling
  • Master database conceptual design using the Entity-Relationship modeling approach
  • Create conceptual design diagrams
  • Master a Database Management System (Microsoft SQL or MySQL) for developing a real-world database system
  • Understand the syntax of Structured Query Language (SQL)
  • Write SQL statements to perform tasks such as database table definition, new data input, and information retrieval,
  • Understand trends in database-related technologies and the application of database technologies to various management activities in information organizations

To achieve the learning objectives, students are expected to study 9 - 12 hours per week on this course.
Office Hours and Online Interaction

This course will have a website in Canvas Instructure (https://unt.instructure.com). Canvas is the course central space for discussion, questions, and sharing resources. Your participation in the discussion board is essential for the class success. Videos for labs and hands-on exercises will be posted on Canvas. It present supported information to the class lessons and demonstrates the use of SQL. Students are welcomed to make an appointment at any time to discuss course-related questions. Habib’s office hours are posted below. Please send him an email even if you plan to visit him during the office hours so that he can schedule individual meetings for all visiting students. You can also schedule an online meeting or phone calls using GoToMeeting.

<table>
<thead>
<tr>
<th>Date &amp; Time:</th>
<th>Wednesday: 09:00 AM – 12:00 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Discovery Park, Room E292J</td>
</tr>
<tr>
<td>Phone:</td>
<td>940-565-3497</td>
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</tbody>
</table>

Textbook


This book is an online book that provides an integrated lab environment within Canvas. This semester the book will be delivered to all students for free through Canvas.

Online Reference

The class provides hands-on tutorial through the book in Canvas. Instructure will also post video tutorials on MySQL, which should satisfy most of the needs for this course. I also recommend you to use other online resources like:

- **Lynda.com** Free access to Lynda courses for UNT students
- **www.youtube.com**
- **W3 Schools Online Tutorial**
- **MySQL.com Reference Manual**
- **Code School**

Software/Hardware Requirements

In this class, we will use the following free online applications to draw the tables relationship:

- **www.lucidchart.com**
- **Draw.io**

Mainly we will use SQL within My Educator Book online. But for the final project students will need to use MySQL an open source free Database Management System. You can use any of the following options:
MySQL Workbench available on Windows and Mac

- Use an online MySQL platform
  - Phpmyadmin provides a graphical interface and powerful coding interface at the same time. You can download it or use a free online services like:
    - http://demo.phpmyadmin.net/master-config/
    - https://www.db4free.net/phpMyAdmin/
  - SQL Fiddle Very good online SQL. In the right side build you DB. On the left side run queries.
  - www.tutorialspoint.com
  - http://www.w3schools.com/sql/trysql.asp?filename=trysql_delete

International Students Holding F-1 Visa

This is only for students in the hybrid section (002). Hybrid section means most of the class work and lab are done on Canvas online, but we will still have multiple Face-to-Face classes. The meetings will be announced on Blackboard. International students who hold F-1 Visa must meet with the instructor during the class meetings or in Discovery Park Room E292J during the office hours.

Assessment

A student’s grade is composed of following:

<table>
<thead>
<tr>
<th>Class</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Class Quizzes:</td>
<td>15%</td>
</tr>
<tr>
<td>Assignments:</td>
<td>35%</td>
</tr>
<tr>
<td>Term Exam:</td>
<td>20%</td>
</tr>
<tr>
<td>Term Project:</td>
<td>30%</td>
</tr>
</tbody>
</table>

The UNT scale for grading is as follows:

- A = 90-100
- B = 80-89
- C = 70-79
- D = 60-69
- F = 59 and below

Class Participation and Quizzes (15%)

This course central space is Canvas (https://unt.instructure.com). You are expected to participate in an online course in two main ways. First, do the weekly quiz before the deadline. Second, join in the discussion forum. Your post can be an answer to the weekly question or respond to other students’ questions or comments. The grade for class participation will consider both quantity and quality of online discussion involvement.
Assignments (35%)  
You will complete FIVE assignments designed to help you to understand the topics of Conceptual Modeling and SQL. You should prepare professional-quality assignments and use the required software packages to produce your work. Hand-written submissions are not acceptable.

Turn in your assignments by submitting them in Canvas assignment link by the date specified in the syllabus below and the course assignment link in case it was updated or extended. If an emergency arises which prevents you from submitting your assignments, you should contact the instructor or the TA as soon as possible before the due date. Late work without the permission of the instructor will receive a grade with a 10% penalty per day after the due date.

Term Exam (20%)  
You will take one term exam near the end of the semester. The exam will cover all of the course content up to the date when the quiz is given. The questions in the exam will include SQL statements and multiple-choice questions that are randomly selected from the course contents. The Exam will be available in the Canvas class website. The instructions on how to take the exam will be announced one week prior to the exam.

If an emergency arises which prevents you from taking the exam at the specified date & time, you should contact the instructor or the TA as soon as possible before the due date.

Term Project (30%)  
Students will work in teams or individually to design and implement a database application using Microsoft SQL, MySQL, or No SQL. You should demonstrate the use of knowledge and skills learned in class.

Academic Integrity  
Please take a look at UNT academic integrity policy. You can find it at the Provost office website: https://policy.unt.edu/policy/06-003. The purpose of this policy is to inform students of their responsibilities. The two categories of most relevance to us are cheating and plagiarism, which you can find the definitions from UNT Student Standards of Academic Integrity. To address problems of academic integrity, Information Science (IS) department has zero tolerance for violations of the IS Academic Misconduct Policy. The following apply:

- The IS Academic Misconduct Policy applies to any work submitted for IS courses or degree requirements, including the Capstone Experience.
- IS will retain students' signed statements acknowledging their understanding of the IS Academic Misconduct Policy. IS instructors will not accept students’ claims that
they were unaware of IS and UNT policies, including definitions of forms of academic misconduct.

- IS instructors will follow UNT regulations for reporting suspected violations to UNT, imposing academic sanctions, and recording sanctions for confirmed violations.
- An academic sanction is a penalty imposed on a student for academic misconduct. Sanctions may range from reduction of a test or assignment grade to revocation of an academic degree.
- IS instructors retain the right to determine specific sanctions for their courses and to set additional policies and procedures that do not conflict with IS or UNT policies.
- Students who have received academic sanctions are not eligible for IS awards, honors, or other benefits.

**Americans with Disabilities Act Compliance Statement**

The Department of Information Sciences, University of North Texas is committed to full academic access for all qualified students, including those with special needs. In keeping with this commitment and in order to facilitate equality of educational access, faculty members in the department will make reasonable accommodations for qualified students with a special need, such as appropriate adjustments to the classroom environment and the teaching, testing, or learning methodologies when doing so does not fundamentally alter the course.

If you have a special need, it is your responsibility to obtain verifying information from the Office of Disability Accommodation (ODA) and to inform me of your need for an accommodation. Requests for accommodation must be given to me no later than the first week of classes for students registered with the ODA as of the beginning of the current semester. If you register with the ODA after the first week of classes, your accommodation requests will be considered after this deadline.

Grades assigned before an accommodation is provided will not be changed. Information about how to obtain academic accommodations can be found in UNT Policy 18.1.14, at www.unt.edu/oda, and by visiting the ODA in Room 321 of the University Union. You also may call the ODA at 940.565.4323.

**See Next Page for study schedule and due dates:**
<table>
<thead>
<tr>
<th>Week #</th>
<th>Dates</th>
<th>Topic</th>
<th>Reading</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jun 4 – Jun 10</td>
<td>Databases for An Information Rich, Connected World</td>
<td>Chapter 1</td>
<td>Quiz 1 (Jun 10 Midnight)</td>
</tr>
<tr>
<td>2</td>
<td>Jun 11 – Jun 17</td>
<td>Structured Query Language (SQL)</td>
<td>Chapter 2</td>
<td>Quiz 2 Assignment 1 (2.1, 2.5) (Jun 17 Midnight)</td>
</tr>
<tr>
<td>3</td>
<td>Jun 18 – Jun 24</td>
<td>The Relationship Database Model</td>
<td>Chapter 3</td>
<td>Quiz 3 Assignment 2 (Jun 24 Midnight)</td>
</tr>
<tr>
<td>4</td>
<td>Jun 25 – Jul 1</td>
<td>Principles of Conceptual Database Design</td>
<td>Chapter 4</td>
<td>Quiz 4 Assignment 3 (Jul 1st Midnight)</td>
</tr>
<tr>
<td>5</td>
<td>Jul 2 – Jul 8</td>
<td>From Conceptual Design to Relational Implementation</td>
<td>Chapter 5</td>
<td>Quiz 5 Assignment 4 (Jul 8 at Midnight)</td>
</tr>
<tr>
<td>6</td>
<td>Jul 9 – Jul 15</td>
<td>Advanced Data Manipulation With SQL</td>
<td>Chapter 6</td>
<td>Quiz 6 Assignment 5 (Jul 15 Midnight)</td>
</tr>
<tr>
<td>7</td>
<td>Jul 16 – Jul 22</td>
<td>Data and Database Administration</td>
<td>Chapter 7</td>
<td>Quiz 7 (Jul 22 Midnight)</td>
</tr>
<tr>
<td>8</td>
<td>Jul 23 – Jul 29</td>
<td>Database Applications</td>
<td>Chapter 8</td>
<td>Quiz 8 (Jul 29 Midnight)</td>
</tr>
<tr>
<td>9</td>
<td>Jul 30 – Aug 5</td>
<td>Review, Final Exam and work on Term Project</td>
<td></td>
<td>Final Exam (Whole Week End on Aug 5th Midnight)</td>
</tr>
<tr>
<td>10</td>
<td>Aug 6 – Aug 12</td>
<td>Submit Term Project</td>
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<td>Term Project Final Report (Aug 12 Midnight)</td>
</tr>
<tr>
<td>11</td>
<td>Aug 13 – Aug 19</td>
<td>Submit Grades</td>
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<td></td>
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