CS 3550 Distributed Database Programming  
Summer 2014 Syllabus

General Information

Instructor: Richard Fry, PhD, Associate Professor, Department of Computer Science
Please do not address me by “Fry”. It’s “Dr. Fry”, “Professor Fry”, or “Rich”.
E-mail: rich@richfry.com (Preferred) or rfr@weber.edu (Forwarded)
Please DO NOT send messages via the Canvas system (I may not see them)
Instant Chat: rich@richfry.com on Google Hangouts

Class Meetings:  Tuesdays and Thursdays 7:30 PM – 9:20 PM  (Davis Campus Room 314)
Virtual Office Hours:  By appointment request via Adobe Connect

Recommended Textbooks:

Beginning Microsoft SQL Server 2012 Programming*
By: Robert Vieira  Publisher: Wrox
AVAILABLE IN ELECTRONIC FORMAT FREE VIA SAFARI LIBRARY
*Exam Questions primarily come from this book and my class demonstrations

Beginning SQL Server 2012 For Developers
By: Robin Dewson  Publisher: Apress
Publication Date: 2012 ISBN: 978-1-4302-3750-1
AVAILABLE IN ELECTRONIC FORMAT FREE VIA SAFARI LIBRARY

Course Description

This course provides students with the technical skills required to design and implement a medium sized distributed database solution using SQL Server 2012. It is assumed students have the equivalent CS 2550 pre-requisite prior to enrolling in this course. Upon successful completion of this course, the student shall be able to:

- Design, build and implement a Relational Database solution in SQL Server 2012;
- Write advanced queries (using Transact-SQL) to summarize data;
- Enforce data integrity and constraints;
- Plan and create indexes;
- Implement user views;
- Manage transactions and locks;
- Use Transact-SQL to write stored procedures, user defined functions, cursors, and triggers;
- Integrate a distributed data solution using XML and/or Microsoft's common language runtime

This course supports the achievement of the following ABET Accreditation program objectives:

- An ability to apply knowledge of math, science, and engineering.
- An ability to design and implement programs as well as to analyze and interpret code and data.
- An ability to design a system, component, or process to meet desired needs.
- An ability to identify, formulate, and solve computing problems.
- An ability to communicate effectively.
• An ability to use techniques, skills, and modern computing tools necessary for computing practice.

Course Delivery

Class will consist of a mix of lecture, demonstrations, student discussions, labs and homework related to the responsibilities and activities of the Database architect and programmer (not administrator). Questions and comments during class time are encouraged (and participation is encouraged). Database concepts will be illustrated in class using reading assignments and discussions. It is expected that students will have read the covered chapters prior to the class on the topic. The instructor will ask questions of the students to ensure that learning is taking place.

Accommodations

Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities (SSD) in room 181 of the Student Services Center. SSD can also arrange to provide course materials (including the syllabus) in alternative formats, if necessary. For more information about the SSD, contact them at 801-626-6413, ssd@weber.edu, or http://departments.weber.edu/ssd/.

Cell Phones

For obvious reasons, cell phones should be set to silent or vibrate during class. If you must take a phone call, please excuse yourself from the classroom.

Surfing the Net (and other inappropriate behavior) during class

Please don't waste my time or yours by surfing the internet, playing video games, instant messaging, working on assignments from other classes, etc., while class is in session. It distracts me and other students. If I see you doing something else during a lecture, I will ask you to leave the classroom. If I were your boss, I'd fire you.

Cheating and Our Departmental Policy if you are caught...

Although cheating has many forms, I generally consider cheating to be any attempt to claim someone else's work as your own. Any assistance provided and/or received on problem solving or programming assignments without being publically posted on our course website (so I know about it) is considered cheating...because I always assume you are doing your own original work. Also, any possession of materials from previous semesters is considered “cheating”. You are encouraged to assist other students whenever possible or cite internet website resources that provide help, but this help must be transparent, and posted via the discussion forum so everyone gets the same information. If you have any questions about this policy, please ask me.

WARNING: CS Department policy dictates that any verifiable evidence of student academic cheating, as defined and determined by the instructor above, will result in: 1) an automatic failing grade for the class and 2) a report to the Dean of Students that will include a detailed description of the student's dishonest conduct.

Class Notifications / Cancellations

For all official announcements regarding this class, or any cancellations of classes, I will notify you via your weber e-mail account. I strongly suggest that you forward your WSU mail to your regular mailbox, so you do not miss these important announcements.
Grading, Evaluation Policies and Procedures

Your grade is based entirely on individual assessment. A brief overview of assignments is given below. All Percentages are subject to change. 80% of your grade comes from "Hands-on Activities", so even if you do poorly on the exams, you will most likely pass the class, as long as assignments are turned in on a timely manner.

<table>
<thead>
<tr>
<th>Assessment by Due Date</th>
<th>Description</th>
<th>Points / % Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>Database Design &amp; Normalization Projects</td>
<td>25 / 5%</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>Physical Implementation, Indexes, and Constraints</td>
<td>25 / 5%</td>
</tr>
<tr>
<td>Assignment 3</td>
<td>Putting it together – Class Project</td>
<td>40 / 8%</td>
</tr>
<tr>
<td>Assignment 4</td>
<td>T-SQL Advanced Queries</td>
<td>40 / 8%</td>
</tr>
<tr>
<td>Mid Term Exam</td>
<td>Covers topics above</td>
<td>50 / 10%</td>
</tr>
<tr>
<td>Final Project Milestone 1</td>
<td>First Deliverable of the Final Project</td>
<td>25 / 5%</td>
</tr>
<tr>
<td>Assignment 5</td>
<td>Stored Procedures and Transactions</td>
<td>40 / 8%</td>
</tr>
<tr>
<td>Assignment 6</td>
<td>User Defined Functions and Cursors</td>
<td>40 / 8%</td>
</tr>
<tr>
<td>Assignment 7</td>
<td>Triggers</td>
<td>40 / 8%</td>
</tr>
<tr>
<td>Final Project Milestone 2</td>
<td>Second Deliverable of the Final Project</td>
<td>25 / 5%</td>
</tr>
<tr>
<td>Assignment 8</td>
<td>Distributed Queries and XML</td>
<td>25 / 5%</td>
</tr>
<tr>
<td>Assignment 9</td>
<td>Reporting Services</td>
<td>25 / 5%</td>
</tr>
<tr>
<td>Final Project Demo</td>
<td>Final deliverable / Demonstration (Recorded)</td>
<td>50 / 10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Covers topics since first exam</td>
<td>50 / 10%</td>
</tr>
</tbody>
</table>

Assignments = 60%, Exams = 20%, Project = 20%

TOTAL 500 Points Possible - It's easy to figure your grade at ANY TIME during the course, just divide your current points by possible points (to date).

Grading Scale


A Student with less than 360 points will not pass the course

Complaining About Grades

I recognize and encourage a student’s sacred right to complain about their grade. There are, however, a few rules under which such complaining should take place, and those students who don't follow the rules will be less successful in their complaints than those students who do follow the rules. First, the only complaint that matters is that something got marked wrong when it was actually right. When you come to complain, be prepared to present, in explicit detail, what it is you did and why you think it is right. Second, complaints about a particular test or assignment are only valid until the next test or assignment is due; after that point the book is permanently closed on all previous test or assignment grades.
Assignment Due Dates

All assignment due dates are clearly posted several weeks in advance, and you are always allocated AT LEAST one FULL WEEKEND to work on your assignments. In order to schedule MY grading time and provide you with timely feedback on your assignments, the posted due dates will be the absolute latest you can turn in an assignment for full potential credit (11:59 PM MST on the SECOND Friday after it’s assigned (also known as “FRYday”, so you can remember my policy easier). I will not accept late work for full credit under any circumstance (even emergencies). Late assignments are my pet peeve and are penalized severely (see below). If you are a procrastinator, then I suggest you give yourself a deadline of a week earlier than the actual due date. I find procrastinators who wait until the last couple of days often encounter an emergency situation the last minute or do not have enough time to adequately finish the work. Conversely, if you start off on the right foot by working a week ahead, you’ll have substantially less stress and more flexibility.

| If Assignment is submitted... | You are awarded (or penalized)...
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Time BEFORE the due date</td>
<td>Awarded Original Earned Credit</td>
</tr>
<tr>
<td>(on or before “FryDay” @ 11:59 PM)</td>
<td></td>
</tr>
<tr>
<td>1 min to 12 hours late (Saturday by Noon)</td>
<td>-10% penalty subtracted from original score</td>
</tr>
<tr>
<td>12-24 hours late (Saturday by 11:59 PM)</td>
<td>-25% penalty subtracted from original score</td>
</tr>
<tr>
<td>24-48 hours late (Sunday by 11:59 PM)</td>
<td>-50% penalty subtracted from original score</td>
</tr>
<tr>
<td>48-72 hours late (Monday by 11:59 PM)</td>
<td>-75% penalty subtracted from original score</td>
</tr>
<tr>
<td>More than 72 hours late (Tuesday or later)</td>
<td>No points awarded – No exceptions</td>
</tr>
</tbody>
</table>

Software/Hardware Requirements

SQL Server 2012 (Express Edition is fine as long as you have Management Studio installed) for your personal computer. The full developer version of SQL Server 2012 is also available through Weber State University's Academic Alliance for free (but is not necessary for this course). If you do not have a personal computer, or cannot install these products (because of speed/memory or the unfortunate event you own a Mac), SQL Server can still be accessed remotely on the CS Department’s Remote Desktop Server (Athena), as long as you have an internet connection.

Links and Resources

- SQL Server 2012 Express Edition* (Service Pack 1 with Management Studio) DO NOT USE SQL SERVER 2014
- Microsoft Visio 2010* (Available Free through the MSDNAA alliance)
- Report Builder for SQL Server 2012

**Also accessible from open lab computers or via Terminal Server at Weber, with active Internet Connection.
### Calendar and Events

**THIS IS A PRELIMINARY SCHEDULE FOR PLANNING PURPOSES ONLY. SUBJECT TO CHANGE!!**

ALWAYS CHECK THE ON-LINE CALENDAR FOR CURRENT INFORMATION, MATERIALS AND DUE DATES.

<table>
<thead>
<tr>
<th>TUESDAY</th>
<th>THURSDAY</th>
<th>“FRY”DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>May 06</strong>&lt;br&gt;Course Introduction and Policies&lt;br&gt;SQL Server 2012 Overview&lt;br&gt;Relational Database Concepts (Review)&lt;br&gt;Ref: Vieira Chapters 1-3&lt;br&gt;Dewson Chapters 1-2&lt;br&gt;Assignment 0</td>
<td><strong>May 08</strong>&lt;br&gt;Relational Database Modeling and Design Normalization&lt;br&gt;Review Assignment 0&lt;br&gt;Visio Diagramming Tools&lt;br&gt;SQL Server Setup&lt;br&gt;Ref: Vieira Chapter 8&lt;br&gt;Dewson Chapters 3&amp;6&lt;br&gt;Assignment 1</td>
<td><strong>May 09</strong>&lt;br&gt;<strong>May 13</strong>&lt;br&gt;Open Lab – 1&lt;br&gt;Instructor Available for Assistance with Assignment 1</td>
</tr>
<tr>
<td><strong>May 15</strong>&lt;br&gt;Physical Database Design &amp; Constraints Management Studio&lt;br&gt;Ref: Vieira Chapters 5-6&lt;br&gt;Dewson Chapters 1-2&lt;br&gt;Assignment 2</td>
<td><strong>May 19</strong>&lt;br&gt;<strong>May 20</strong>&lt;br&gt;Review Assignment 1&lt;br&gt;Open Lab – 2&lt;br&gt;Instructor Available for Assistance with Assignment 2</td>
<td><strong>May 16</strong>&lt;br&gt;Assignment 1 due by Midnight</td>
</tr>
<tr>
<td><strong>May 22</strong>&lt;br&gt;Bulk Copy Program&lt;br&gt;Assignment 3&lt;br&gt;Final Project Milestone 1</td>
<td><strong>May 23</strong>&lt;br&gt;<strong>May 27</strong>&lt;br&gt;Review of Assignment 2&lt;br&gt;Open Lab – 3&lt;br&gt;Instructor Available for Assistance with Assignment 3</td>
<td><strong>May 30</strong>&lt;br&gt;Assignment 3 due by Midnight</td>
</tr>
<tr>
<td><strong>Jun 03</strong>&lt;br&gt;Review of Assignment 3&lt;br&gt;Open Lab – 4&lt;br&gt;Instructor Available for Assistance with Assignment 4</td>
<td><strong>Jun 05</strong>&lt;br&gt;EXAM I – Covers material to date&lt;br&gt;<strong>Jun 06</strong>&lt;br&gt;Assignment 4 due by Midnight</td>
<td><strong>Jun 12</strong>&lt;br&gt;Open Lab – 5&lt;br&gt;Instructor Available for Assistance with Assignment 5</td>
</tr>
<tr>
<td><strong>Jun 10</strong>&lt;br&gt;Exam Results&lt;br&gt;Review of Assignment 4&lt;br&gt;Scripts, Batches and Stored Procedures&lt;br&gt;Return, Transactions and Locks&lt;br&gt;Assignment 5&lt;br&gt;Ref: Vieira Chapters 12 &amp; 14&lt;br&gt;Dewson Chapter 12</td>
<td><strong>Jun 13</strong></td>
<td><strong>Jun 13</strong></td>
</tr>
<tr>
<td>Date</td>
<td>Event Details</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------------</td>
<td></td>
</tr>
</tbody>
</table>
| Jun 17 | No Class – Runway Rubys Design Challenge Competition Washington DC  
WORK ON MS1 (due Sunday 6/22) |
| Jun 19 | No Class – Runway Rubys Design Challenge Competition Washington DC  
WORK ON MS1 (due Sunday 6/22) |
| Jun 20 | Assignment 5 due by Midnight  
Final Project MS 1 (Ext: Sunday 6/22) |
| Jun 24 | Review of Assignment 5  
Error Handling, User Defined Functions, Assignment 6  
Ref: Vieira Chapters 13  
Dewson Chapter 12 |
| Jun 26 | Instructor Conducting Mandatory Milestone 1 Feedbacks (First 15 Students)  
Open Lab – 6 |
| Jun 27 | |
| Jul 01 | Milestone 2 Vieira Chapter 15  
Triggers  
Assignment 7  
Ref: Vieira Chapter 15  
Dewson Chapter 15 |
| Jul 03 | Open Lab – 6/7  
Instructor Available for Assistance with Assignments 6 and 7 |
| Jul 04 | Assignment 6 due by Midnight |
| Jul 08 | Review of Assignment 6  
Distributed Queries and XML Assignment 8  
Ref: Vieira Chapter 16 |
| Jul 10 | Instructor Conducting Mandatory Milestone 1 Feedbacks (Last 15 Students)  
Open Lab – 7/8 |
| Jul 11 | Assignment 7 due by Midnight |
| Jul 15 | Review of Assignment 7  
Exam Review  
Reporting Services Assignment 9  
Ref: Vieira Chapter 19 |
| Jul 17 | Open Lab – 8/9  
Instructor Available for Assistance with Assignments 8 and 9 |
| Jul 18 | Assignment 8 due by Midnight |
| Jul 22 | EXAM II – Covers materials since last exam |
| Jul 24 (Holiday) | No Class |
| Jul 25 | MS 2 due by Midnight |
| Jul 29 | Open Lab – 9  
Instructor Conducting Mandatory Milestone 2 Feedbacks (First 15 Students) |
| Jul 31 | Open Lab – 9  
Instructor Conducting Mandatory Milestone 2 Feedbacks (Last 15 Students) |
| Aug 01 | Assignment 9 due by Midnight |
| Aug 05 | No Class – Work on Final Project Demo |
| Aug 07 | No Class – Work on Final Project Demo |
| Aug 08 | Final Project Screen Capture Demo due by Midnight |

Copyright ©2014 Richard Fry – Last Modified 3 May 2014.