SYLLABUS

IDS 521: Advanced Database Management
Call# 14091 (4 credit hours) – Fall 2012
(Prerequisite: IDS 410)

Instructor: Yann Chang
Office/Ph/email Room 2424 UH; (312) 355-1245; jsun@uic.edu
Class Time: 12:15pm – 3:15pm Saturday.
Class Location: Douglas Hall room 210
Office Hours: 2:15pm – 4:15pm Monday and Wednesday or by appointment.

Course Description

Developing web-enabled database applications require the following skills:

a. Database design: a well-designed database can simplify building, maintaining, and updating (modifying) an application.
b. SQL or its alternatives: once we learn the foundations of SQL, it would be relatively simple to manipulate (insert, delete, update, and retrieve) a well-designed database.
c. Programming web pages: web applications are composed of individual web pages, which can dynamically display HTML, collect user input, and interact with databases.

In this course, we will quickly review some materials (data modeling and SQL) from the prerequisite course (IDS 410). Then, we will discuss various aspects of ASP.NET MVC 3 (a web programming framework), which allows developers to create dynamic web pages, whose contents are dynamically generated whenever the pages are requested. Based on the project's problem statement that will be given, students will design and develop a web-enabled database application using SQL Server database and ASP.NET MVC 3. Note: students are encouraged to propose a project and work on that project instead of working on the given project.

Course Objective

To provide students with conceptual and practical skills to develop web-enabled database applications.

Assignment

There will be a semester-long project. To do the project, students form groups of up to four students per group. Each student may opt to do the project alone. Groups must be formed by the end of the second week. With a majority vote, a free rider can be dismissed from a group by the fourth week. The dismissed student can in turn join another group, if this is acceptable to that other group, or do the project alone. In the project report, each group member should specify the contribution he or she made to this project.

Grading

Midterm exam (20%) in Week 6: Data modeling, logical and physical design, data normalization, SQL, triggers, and stored procedures.

Project (total weight is 80%):

a. Conceptual Design (15%): Data model using E-R diagram (due: week 4)
b. Logical Design (10%): Relational schema in 3NF (due: week 5)
c. Physical design (10%): Physical database using SQL Server (due: week 7)
d. Programming web pages using ASP.NET MVC 3:
   - Project presentation I (7.5%): week 12
   - Project presentation II (7.5%): week 15
   - Submitted project (30%): Submit by 11:59PM on December 8, 2012

Letter Grades Determination

A – Total score of 90% or more
B – Total score of 80% and below 90%
C – Total score of 70% and below 80%
D – Total score of 60% and below 70%
F – Total score of less than 60%

Total Score Calculation
Total score = 0.20*(Midterm) + 0.15*(Conceptual Design) + 0.10*(Logical Design) +
0.10*(Physical Design) + 0.075*(Presentation I) +
0.075*(Presentation II) + 0.30*(Submitted Project)

Depending on class performance, the grades might be curved.

Acquired Knowledge
Upon completion of this course, the students are expected to understand the following:

a. Conceptual data modeling using Entity Relationship model.
b. Mapping the conceptual data model into a relational data model during the logical database design.
c. Implementing the relational data model into SQL Server database management system during the physical database design.
d. SQL, triggers, and Stored Procedures.
e. Basic concepts of the Entity Framework, including ways to query the Entity Data model using LINQ to Entities and Entity SQL.
f. Programming web pages using ASP.NET MVC 3.
g. The development process of web-enabled database applications: analysis, design, and implementation.

Reference Textbooks (not required):

Title: Murach's SQL Server 2008 for Developers
Authors: Bryan Syverson and Joel Murach
Publisher: Mike Murach & Associates, Inc.
Year: 2008
ISBN: 978-1-890774-51-6

Title: "Modern Database Management, (8th edition)
Authors: Jeffrey A. Hoffer, Mary B. Prescott, and Fred R. McFadden
Publisher: Addison Wesley
Year: 2007
ISBN: 0-13-221211-0

You can also use a newer but more expensive book with the same title (9th or 10th edition).

Recommended Trade books (not required):

Title: Pro ASP.NET MVC 3 Framework, 3rd edition
Authors: Adam Freeman and Steven Sanderson
Publisher: APress
Year: 2011
ISBN-13: 978-1-4302-3404-3

Title: Programming Entity Framework, 2nd edition
Author: Julia Lerman
Publisher: O'Reilly
Year: 2010
ISBN-13: 978-0-596-80726-9

Tentative outline

Date	Subject	Reading Assignments
Week 1 Sep 1	Introduction & Project discussion	Project problem statement, Syverson and Murach: Chapter 1.
Week 2 Sep 8	Conceptual design using Entity-Relationship model	Lecture notes, Hoffer, et al.: Chapters 3 and 4.
Week 3 Sep 15	Logical database design, data normalization, physical database design	Lecture notes, Hoffer, et al.: Chapters 5 and 6, Syverson and Murach: Chapter 9.
Week 4 Sep 22	The SQL Essential Skills: Retrieving single and multiple tables Creating database and tables, inserting, updating, and deleting data	Syverson and Murach: Chapters 2-8, 10.
Week 5 Sep 29	Advanced SQL Skills: Views, triggers, stored procedures, scripts.	Syverson and Murach: Chapters 12-15.
Week 6 Oct 6	**Review for Midterm and then Midterm exam**	
Week 7 Oct 13	Introduction to Entity Data Model	Lerman: Chapters 2 - 6
Week 8 Oct 20	Introduction to ASP.NET MVC 3	Freeman and Sanderson: Chapters 1 – 3.
Week 9 Oct 27	Sample ASP.NET MVC Application	Freeman and Sanderson: Chapters 7 – 8.
Week 10 Nov 3	Sample ASP.NET MVC Application (continued)	Freeman and Sanderson: Chapters 8 – 9.
Week 11 Nov 10	**Project Presentation I**	
Week 12 Nov 17	More on ASP.NET MVC 3	Freeman and Sanderson: Chapters 10 – 12.
Week 13 Nov 24	Authorization in ASP.NET MVC 3	Freeman and Sanderson: Chapter 22
Week 14 Dec 1	No class - Thanksgiving weekend	
Week 15 Dec 8	**Project presentation II** and Wrap up	

NOTE: There will be no final exam for this course.

College of Business Administration
University of Illinois at Chicago

January 2003

Honor Code for the College of Business Administration

As an academic community the College of Business Administration at the University of Illinois at Chicago is committed to providing an environment in which teaching, learning, research, and scholarship can flourish and in which all endeavors are guided by academic and professional integrity. All members of the college community – students, faculty, staff, and administrators – share the responsibility of insuring that high standards of integrity are upheld so that such an environment exists.

In pursuit of these high ideas and standards of academic life, as a student I hereby commit myself to respect and uphold the University of Illinois at Chicago (UIC) College of Business Administration Honor Code during my entire matriculation at UIC. I agree to maintain the highest moral and ethical standards in all academic and business endeavors and to conduct myself honorably as a responsible member of the college academic community. This includes the following:

- Not to seek unfair advantage over other students, including, but not limited to giving or receiving unauthorized aid during completion of academic requirements;
- To represent fact and self truthfully at all times;
- To respect the property and personal rights of all members of the academic community.

An abbreviated version of the Honor Code pledge may be printed on course syllabi, exam booklets, and other uses as deemed appropriate. The abbreviated version is as follows:

> This course and its associated coursework are being administered under the policies of the University of Illinois at Chicago (UIC) College of Business Administration Honor Code. All students are expected to respect and uphold this code.

Honor Code Violations and Enforcement

Violations of the Honor Code are just causes for discipline under the University of Illinois at Chicago Student Disciplinary Procedure, and all allegations of Honor Code violations shall be handled pursuant to that Procedure.

(For a complete description of just causes for discipline, disciplinary procedures, and sanctions, see the pamphlet "Student Disciplinary Procedure of the Senate Committee on Student Discipline," available from the Office of the Dean of Students, SSB, Suite 3030, 1200 W. Harrison St., M/C 318.)

Honor Code Council

The Honor Code Council shall be formed consisting of two faculty members elected by faculty vote and six student members (two graduate students and four undergraduate students) appointed by the Assistant Dean for Student Services through recommendation of the Dean's Advisory Council (DAC). Each member will serve a term of one academic year, beginning in August. The Council shall elect a chairperson and a secretary.

The duties of the Honor Code Council shall include:

- Recommend changes in the Honor Code.
- Inform all students, staff, and faculty of the Honor Code and the procedures to be followed for pursuing alleged Honor Code violations.
- Ensure that the Honor Code is prominently displayed within the College of Business Administration and on course syllabi and exam booklets.
- Ensure that the Honor Code and related information are accurately described in the Graduate and Undergraduate catalogs.
- Work with the Office of Student Services to include the Honor Code in its promotion of the University of Illinois at Chicago College of Business Administration to potential students.
- Work with college administration to ensure that the Honor Code statement is signed by all students prior to their enrollment in the college.
- Inform all UIC faculty, staff, and students of the Honor Code of the College of Business Administration, and encourage the adoption of its principles.