Course Syllabus
University of Wisconsin – Milwaukee (UWM)
School of Information Studies (SOIS)

Course Title
Database Information Retrieval Systems

Semester
Summer 2016

Course and Section Number
INFOST 410 – 201

Meeting Times and Location
Online

Instructor
Kevin Trainor
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Mobile: 847-650-9706

Office Hours
Every Thursday evening, I will be holding Office Hours using the GoToMeeting Platform. Please feel free to drop by to review solutions to recent Coding Assignments, to ask a question, to get help with your assignments, or just to say hello. Please use a headset when joining this session. You may join the GoToMeeting session using this link.

Catalog Description
This course introduces the design and development of different types of information systems, including database types, design issues, application development, and software selection and evaluation. 3 credits.

General Description
This is an introductory course in relational databases, their design, implementation, and maintenance using the MySQL relational database management system. Topics covered include:

- An introduction to relational databases and SQL
- How to use MySQL Workbench and other development tools
- How to retrieve data from a single table
- How to retrieve data from two or more tables
- How to code summary queries
- How to code subqueries
- How to insert, update, and delete data
- How to work with data types
- How to use functions
- How to design a database
- How to create databases, tables, and indexes
- How to create views

- How to back up and restore a database
- How to use transactions and locking

Required Texts

Murach, J. (2015). Murach's MySQL (2nd Edition). Fresno, CA: Mike Murach & Associates, Inc. ISBN 978-1-890774-82-0

Software
The hands-on assignments for this course will require you to install MySQL software on your computer. This includes:

- MySQL Community Server
- MySQL Workbench

You should accomplish this task before the end of Week 1.

The Murach textbook is a great source of information on where to locate the MySQL software that you will need and how to install the software on your computer. Appendix A of the Murach text addresses installing the software on a Windows computer. Appendix B addresses installing the software on an OS X computer. While it is possible to install the software on a Linux computer, doing so will require that you rely on documentation that you must find at the Oracle Web site. So, I recommend using Windows or OS X if possible.

The Murach text was written while using a specific version each MySQL software product:

- MySQL Community Server version 5.6
- MySQL Workbench version 6.2.3

The most current version of each of these software products is now a few releases beyond those used in creating the Murach text. The functionality of the software will be essentially the same whether you choose to install the same version that was used in Murach or whether you choose to install the latest version. If you choose to install the latest version, you may need to follow the slightly different installation instructions that will be available on the Oracle Web site. If you choose to install the earlier version, you will have to hunt around on the Oracle Web site to find the download for a prior product version. Neither of these approaches is foolproof. You just need to choose the approach that you find most appealing and persevere until you have reached the goal.

I intend to use a more recent version of the MySQL software. I have created demo videos showing me installing the software on both Windows and OS X. These videos were created for the Fall 2015 Semester. Nevertheless, they should serve as a good tutorial on installing the MySQL software.

I have created the MySQL Software Issues topic within our Class Discussions forum. This will be a place that you can post messages regarding your challenges and successes with the MySQL Software. I will monitor the forum and provide support. I invite you to do the same.

Course Topics
- An introduction to relational databases and SQL
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- How to code summary queries
- How to code subqueries
- How to insert, update, and delete data
- How to work with data types
- How to use functions
- How to design a database
- How to create databases, tables, and indexes
- How to create views
- How to back up and restore a database
- How to use transactions and locking

Course Objectives
- Identify the advantages of relational database management systems over conventional files and spreadsheets.
- Code SQL queries that extract data from a single table.
- Code SQL queries that extract data from two or more tables.
- Code SQL summary queries.
- Code SQL subqueries.
- Code SQL statements that implement insert, update, and delete functions.
- Identify the standard data types available in relational databases and their typical use.
- Code SQL functions.
- Design a non-trivial relational database.
- Create databases, tables, and indexes using the Data Definition Language (DDL).
- Create views.
- Backup and restore a simple relational database.
- Explain the roles that transactions and locking play in the maintenance of database integrity.

Instructional Methods
- Reading
- Recorded lecture videos
- Recorded tutorial videos
- Online forum discussion
- Coding assignments
- Final project

Course Schedule
The schedule for this course has been published on the Course Information site and is available at http://courseinfo.ligent.net/2016su/_uwm/infost410_201/index.html . When final, a copy of that schedule will be included as an appendix to this syllabus.

The course schedule is always subject to reasonable change by the instructor to account for changes in circumstance and to correct errors. Schedule changes will be posted to the Course Information site and announced to the class via email. This syllabus document will not be updated to reflect schedule changes.

Work Required of Students

Estimated Workload
The total number of hours estimated for the student to complete the work required for this course is 160 hours. The actual amount of time required will vary according to the experience and expertise of the student. Grades will be based on work output produced and submitted rather than by the time expended by the student.

General Issues

1. You will be expected to complete all reading assignments and view all assigned videos before the end of the class week.

2. Coding Assignments should be completed before the established deadline. Substantial assignment credit will be associated with handing in work that reflects a good faith effort on a timely basis. My discussion of Coding Assignments (below) will explain why this timeliness is so important.

3. All work that you submit must be your own. So copying of the work of others (current students, past students, me, or others) is prohibited. Nevertheless, I encourage you to consult with your fellow students or with me prior to handing in your work. Feel free to show the current state of your work to anyone and ask for feedback, suggestions or encouragement. I also encourage you to review the work of others that is not a direct solution to the assignment at hand (examples in textbooks, examples on the Internet, or an example that a group of people might work through on a white board). Collaborate as much as required in order to fully understand the techniques needed to do your assignment.

4. A substantial portion of your grade will be based on class participation. This will include posting to class forums and participating in discussions during the weekly online office hours session.

Assignment Descriptions
As indicated in the schedule, there are one or more required assignments for each week of class. It is important that you check the schedule each week and complete the assignments on time in order to receive credit for your work. The following are general descriptions of each type of assignment:

1. Coding Assignments: Our textbook has a companion set of exercises named *My Guitar Shop*. For the most part, one set of these exercises has been assigned for each

chapter. While starter files have been provided for these exercises, the solutions have not been provided. Generally, this set of exercises is organized in a manner that is parallel to the exercises that are published at the end of each chapter in the textbook. If you should get stuck, you might look to the textbook exercises and their solutions for inspiration.

Coding Assignments will be due at the end of the class week. Solutions to Coding Assignments will be published on our D2L page immediately after the due date. Also, I will be available to review these solutions with any interested students during the next office hours session. **The published solutions and my discussion of those solutions during office hours will serve as your primary feedback on Coding Assignment**s.

As secondary feedback, your Coding Assignment submissions will be graded and commented upon. Feedback will be published to the D2L assignment submission activity. Due to the size of the class, you can expect to get grading and comment feedback several weeks after the due date for the assignment.

To encourage you to work on and submit your Coding Assignments on time, I have worked out a grading system that rewards good faith effort, timely submission, and attention to detail. In order to demonstrate good faith effort, you must turn in work that shows that you tried to do the exercise. In order for your submission to be timely, it must be submitted before the assignment deadline. In order to demonstrate attention to detail, you must submit the proper number of files in the proper file format using the proper file naming conventions. **Submissions that meet all of the requirements will earn a minimum score of 85. Submissions that do not meet all of the requirements will earn a maximum score of 84.**

2. Final Project: The final project will require you to design and implement a MySQL database solution to a business problem. You will be given documentation on a crude information system solution that is implemented with spreadsheets. You will be responsible for extracting the business requirements from the existing solution, designing a database, populating a sample database, and writing the SQL statements required to produce the same functionality using this more robust set of tools. More detailed instructions for this project will be published separately.

Grading

Basis for Determining Grade
The various components of student work will contribute to the final grade based upon the following percentages:

- Class participation: 10%

- Coding assignments: 45%

- Final Project: 45%

Letter grades will be determined as follows:

- A : 93 - 100%
- A- : 90 - 92%
- B+: 87 - 89%
- B : 83 - 86%
- B- : 80 - 82%
- C+: 77 - 79%
- C : 73 - 76%
- C- : 70 - 72%
- D+: 67 - 69%
- D : 63 - 66%
- D- : 60 - 62%
- F :   0 - 59%

UWM AND SOIS ACADEMIC POLICIES

The following links contain university policies affecting all SOIS students. Many of the links below may be accessed through a PDF-document maintained by the Secretary of the University: http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf. Undergraduates may also find the ***Panther Planner and Undergraduate Student Handbook*** useful (http://www4.uwm.edu/osl/students/).

Students With Disabilities
If you will need accommodations in order to meet any of the requirements of a course, please contact the instructor as soon as possible. Students with disabilities are responsible to communicate directly with the instructor to ensure special accommodation in a timely manner. There is comprehensive coverage of issues related to disabilities at the Student Accessibility Center (http://www4.uwm.edu/sac/), important components of which are expressed here: http://www.uwm.edu/Dept/DSAD/SAC/SACltr.pdf.

Religious Observances
Students' sincerely held religious beliefs must be reasonably accommodated with respect to all examinations and other academic requirements, according to the following policy: http://www4.uwm.edu/secu/docs/other/S1.5.htm. Please notify your instructor within the first three weeks of the Fall or Spring Term (first week of shorter-term or Summer courses) of any specific days or dates on which you request relief from an examination or academic requirement for religious observances.

Students Called to Active Military Duty
UWM has several policies that accommodate students who must temporarily lay aside their educational pursuits when called to active duty in the military (see http://www4.uwm.edu/academics/military.cfm), including provisions for refunds, readmission, grading, and other situations.

Incompletes
A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantial cause beyond the student's control, has been unable to take or complete the final examination or some limited amount of other term work. An incomplete is not given unless the student proves to the instructor that s/he was prevented from completing course requirements for just cause as indicated above (http://www4.uwm.edu/secu/docs/other/S31.pdf).

Discriminatory Conduct (such as sexual harassment)
UWM and SOIS are committed to building and maintaining a campus environment that recognizes the inherent worth and dignity of every person, fosters tolerance, sensitivity, understanding, and mutual respect, and encourages the members of its community to strive to reach their full potential. The UWM policy statement (http://www4.uwm.edu/secu/docs/other/S47.pdf) summarizes and defines situations that constitute discriminatory conduct. If you have questions, please contact an appropriate SOIS administrator.

Academic Misconduct
Cheating on exams and plagiarism are violations of the academic honor code and carry severe sanctions, ranging from a failing grade for a course or assignment to expulsion from the University. See the following document (http://www4.uwm.edu/osl/dean/conduct.cfm) or contact the SOIS Investigating Officer (currently the Associate Dean) for more information.

Complaints
Students may direct complaints to the SOIS Dean or Associate Dean. If the complaint allegedly violates a specific university policy, it may be directed to the appropriate university office responsible for enforcing the policy   (http://www4.uwm.edu/secu/docs/other/S49.7.htm).

Grade Appeal Procedures
A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow SOIS appeal procedures for undergraduates as seen here:
(http://www4.uwm.edu/sois/programs/graduate/mlis/policies/appeals.cfm) In the case of a graduate student, the Graduate School,
(http://www4.uwm.edu/sois/programs/undergraduate/ug_appeals.cfm).

Last Revised
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