INLS 760-001
Web Databases
Spring 2015

Section: Wednesdays, 5:15 – 8:00pm, Manning 14

Instructor: Dr. Robert Capra
      Office: Manning 210
      Office Hours: Tuesdays, 2:00 – 3:00pm, and by appointment
      Email: `r<lastname> at unc dot edu`

Prerequisite(s):   INLS 572 or equivalent, INLS 523 and programming experience

Recommended Text: *Learning PHP, MySQL, JavaScript, & CSS, Second Edition*
Nixon, R.
ISBN: 978-1449319267

Recommended Text: *PHP and MySQL Web Development, Fourth Edition*
Welling, L. and Thomson, L.
ISBN: 978-0672329166

Course Webpage: http://www.ils.unc.edu/courses/2015_spring/inls760_001/

                NOTE: We will also use a Sakai site for this course.

Grade Weighting:

Participation	5%
In-Class Exercises/Quizzes	15%
Programming Projects	40%
Midterm exam	20%
Final exam	20%

1. Course Description and Prerequisites

From the SILS course description:

> INLS 760 (259): Web Databases
> Prerequisites: INLS 572 or equivalent, INLS 623 and programming experience.
> Explores concepts and practice surrounding the implementation and delivery of
> Web-enabled databases. Students will gain experience with and evaluate PC and
> Unix Web database platforms. (3)

2. Course Objectives

- Solidify understanding of web protocols and standards: HTTP, HTML, CSS, CGI.
- Gain practical experience implementing Web databases using a "LAMP" (Linux, Apache, MySQL, and PHP) environment
- Learn techniques for dealing with security, user authentication, web transactions, session management, and keyword search.
- Work with Javascript and DOM client-side technologies in a web database context.
- Introduce the Model-View-Controller architecture and understand how it supports development.
- Learn about emerging Web database technologies and trends.
- Develop the ability to critically asses and review program code for Web databases.

3. Computing Requirements

In-class computer requirement: You are expected to have a laptop computer that meets CCI requirements and to bring this computer to each class. In many class periods we will do examples and in-class exercises that will count as part of your course grade.

Development environment: In this course, we will use a "LAMP" (Linux, Apache, MySQL, and PHP) environment for the projects and assignments. All students registered for the course will be given accounts on SILS servers to provide LAMP resources for use with class assignments.

In addition to this, you are encouraged to install and configure a LAMP/WAMP/MAMP environment on your own computer. Having a local L/W/MAMP environment will make development and debugging much easier. However, many assignments will require you to have "live" code that is running on the SILS servers, so you may find that you develop and debug on your local computer and then load and test your code on the SILS server when you are ready to turn it in.

There are several options for installing a local L/W/MAMP environment that do not require you to change your current operating system. One option is to install the Zend Server Free Edition on your Windows or Mac computer. The Zend Server will install and run a complete W/MAMP stack on your computer and has some nice features to help make development and debugging easier than on the SILS server. The Nixon textbook has guidance on installing the Zend Server in Chapter 2 (the Zend Server "Community Edition" that it refers to is no longer available, but seems to have evolved into the "Free Edition"). Another option is to run a LAMP server (e.g. Ubuntu Linux) in a "virtual machine" (e.g. Virtual Box). The instructor will discuss options for running a L/W/MAMP environment on your own computer during the initial class sessions.

4. Graded Work

Your grade will be based on participation, in-class exercises/quizzes, programming project assignments, a midterm test, and a final exam, weighted as shown in the table on the first page.

Participation

Students are expected to regularly attend and participate in class. Throughout the semester, students will be called on in class to answer questions, to present work from assignments, and to participate in in-class exercises. Your participation grade will be based on these factors plus regular class attendance, courteous behavior in class, being prepared for class, and being fully and actively engaged during class.

In-Class Exercises

During many of the class periods, one or more in-class exercises will be assigned. Sometimes you will work on these exercises individually, sometimes in pairs, and sometimes the entire class may collaborate on them. Most of these assignments will require you to submit a solution or program via Sakai to get credit for the exercise. Exercises will typically be focused on a particular topic and many will be designed to be completed and submitted by the end of the class period. However, for some exercises you may be allowed to finish and submit the exercise a day or so later.

Programming Project Assignments

Project assignments are designed to give you in-depth, "hands-on" experience with the concepts and technologies that are covered in this course. These assignments will require you to use new technologies to implement features important to Web databases. The assignments will often involve a mixture of programming and database work. As is the case with many programming-oriented assignments, the programming projects are likely to require a significant amount of implementation and debugging time and students are advised to start working on them early.

NOTE: For some assignments and exercises, we will do "code reviews" after the assignments have been submitted. You may be asked if you would like to share the code you wrote and have it used in one of these code reviews. This is not a requirement, but I encourage students to allow their code to be reviewed in this way. There are several benefits. First, reviewing other students' code is a good way to learn new programming techniques and to gain skill in understanding the code of others (like reading someone else's essay in a writing class). Second, some assignments may build on prior ones, so you may benefit from looking at a working implementation of an earlier assignment. And finally, you are likely to learn new programming techniques and tricks by having your code reviewed and critiqued by your peers!

Exams

There will be one mid-term and one final exam.

5. Grading Policies

The following scales will be used as a GUIDELINE ONLY. The final grade scale may differ.

The following grade scale will be used AS A GUIDELINE for **undergraduates**:

Grade Range	Definition*
A 90-100%	Mastery of course content at the <u>highest level of attainment</u> that can reasonably be expected of students at a given stage of development. The A grade states clearly that the students have shown such <u>outstanding promise</u> in the aspect of the discipline under study that he/she may be strongly encouraged to continue.
B 80-89.9%	<u>Strong performance</u> demonstrating a high level of attainment for a student at a given stage of development. The B grade states that the student has shown solid promise in the aspect of the discipline under study.
C 70-79.9%	A <u>totally acceptable performance</u> demonstrating an adequate level of attainment for a student at a given stage of development. The C grade states that, while not yet showing unusual promise, the student may continue to study in the discipline with reasonable hope of intellectual development.
D	A <u>marginal performance</u> in the required exercises demonstrating a minimal passing level of attainment. A student has given no evidence of prospective

60-69.9%	growth in the discipline; an accumulation of D grades should be taken to mean that the student would be well advised not to continue in the academic field.
F 0-59.9%	For whatever reason, an <u>unacceptable performance</u>. The F grade indicates that the student's performance in the required exercises has revealed almost no understanding of the course content. A grade of F should warrant an advisor's questioning whether the student may suitably register for further study in the discipline before remedial work is undertaken.

* Definitions are from: http://registrar.unc.edu/academic-services/grades/explanation-of-grading-system/ (underlining is my emphasis)

The following grade scale will be used AS A GUIDELINE for **graduate students**:

Grade Range	Definition*
H: 95-99%	High Pass
P: 80-94.9%	Pass
L: 70-79.9%	Low Pass
F: 0-69.9%	Fail

* Definitions are from: http://registrar.unc.edu/academic-services/grades/explanation-of-grading-system/

Due Dates and Late Work
Each assignment will have a due date and time and will include instructions for submission. A late penalty of 10% per day will be applied unless prior arrangements have been made with the instructor. Assignments submitted more than 5 days after the due date will receive no credit and will not be graded.

Requests for Extensions and Absences
Any request for an extension must be made, preferably by email, at least 24 hours prior to the due date. Written documentation is required for illness. If a serious illness prevents you from taking any of the tests, send your instructor an e-mail message, or a friend with a note, describing your condition before the scheduled test.

Statute of Limitations
Any questions or complaints regarding the grading of an assignment or test must be raised within one week after the score or graded assignment is made available (not when you pick it up).

6. Course Communication

Course Website
The official course website is at:

> http://www.ils.unc.edu/courses/2015_spring/inls760_001/

The website will contain the course syllabus, schedule and other useful information.

Sakai
All enrolled students should have access to the UNC Sakai site for this course:

> http://sakai.unc.edu/

We will use Sakai for many of the administrative aspects of the course.

- **Course Announcements**: I will often use the Sakai messaging feature to post announcements to the class. Sakai typically will automatically send a copy of these announcements to each student's email address of record, but sometimes email can be unreliable. It is the responsibility of every student to check the Sakai site regularly for announcements and messages. The Sakai site is the reliable source for announcements and messages from the instructor. If something the instructor says in class conflicts with information posted by the instructor on Sakai, then the information posted by the instructor on Sakai takes precedence. Verbal instructions are easily mis-interpreted, and they do not leave a documentation trail.
- **Assignments**: In order for you to receive credit for an assignment, it must be submitted to the appropriate Sakai "Assignments" section. In my experience, Sakai is a reliable method to submit assignments. It is the responsibility of each student to make sure they have access to Sakai and can submit assignments when they are due. You should also verify that each assignment you submit has uploaded correctly.
  If for some reason you are unable to submit an assignment to Sakai, as a last resort you may email it to the instructor along with a note about the problem you encountered. Then, **as soon as you are able to, it is your responsibility to submit the exact same assignment to Sakai**. The email serves as a record that you tried to submit the assignment on time, but to receive credit, your assignment must be uploaded to Sakai.
- **Grades**: I will use the Sakai "Gradebook" to record your course grades.

Email
Email can be an effective means for you to contact me regarding quick and simple class-related communication. If you have a detailed question about an assignment or class concept, I encourage you to stop by my office during office hours (or schedule a time to meet with me). Note that I receive a large amount of email and while I try to reply to student emails within 24 hours, there are times that it may take me 2-3 days to reply to email. You may get an answer faster by seeing me in person – in addition to my office hours, I am typically available for a few minutes before and after class.

7. Honor Code

The UNC Honor Code is in effect for all work in this course. The "Instrument of Student Judicial Governance" gives examples of actions that constitute academic dishonesty:

> http://instrument.unc.edu/instrument.text.html#academicdishonesty

Student often ask what is okay to talk about with other students and what is not. I do encourage you to help each other learn the course material – your fellow students can often be a great resource for learning. However, you should not discuss the details of a solution to an assignment with other students, and should never copy or share answers for an assignment with other students unless I have explicitly instructed that it is okay to do so. It is okay to talk about course material with other students, but you should not discuss detailed solutions to pending assignments. **All work you submit should be your own**. One way to help insure this is that if you do discuss course material with other students, do not take any written notes.

8. Special Accommodations

If any student needs special accommodations, please contact the instructor during the first week of classes.