INFM 718N - Web-Enabled Databases
Summer II 2012 - Tentative Syllabus

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Office Hours: By appointment

Class meeting time and place:
Asynchronous online class with optional face-to-face clinics and online help sessions.

Catalog Description:
Basic methods and tools for developing dynamic, database-driven websites. Acquiring, installing and running web servers, database servers, and connectability applications. Developing web interfaces, and application-layer components. Prerequisite: INFM 603, INST 630, LBSC 690, or equivalent.

Extended Description:
Contemporary web applications go beyond plain HTML pages, providing interfaces to dynamic databases, and adding several other key functionalities to websites. These functionalities enrich the user experience, and facilitate porting of many information tasks to web environment. INFM 718N Web-Enabled Databases will introduce tools and methods for developing database driven websites. The course will introduce initial steps of building a dynamic website, such as installing and maintaining a web server and a database server, as well as developing web interfaces and client- and server-side applications that provide added functionality to the website.

1 This syllabus is subject to change. Please check the course ELMS space frequently for updates.
Goals:
After completing this course the student will be able to:
- Understand the basic approach and key development elements to building dynamic websites.
- Acquire, install and maintain a web server.
- Acquire, install and maintain a database server.
- Acquire, install and maintain applications that provide connectability between different layers of the site architecture.
- Build basic web interfaces for communicating with underlying databases.
- Program basic application components that will add functionality to websites.

Elements of the Course:

Modules: The course will be delivered as a sequence of modules on Blackboard (ELMS), each of which will cover one or a few key skills in PHP scripting and database development and management on the MySQL database server. Each module will combine one or more learning components, such as videos, slideshows, example scripts, exercises and assignment. (Not all modules will involve all of these components.) Each module will have a due date by which it should be completed with all of its components, including assignments, if any. Student may choose to complete the modules with a faster pace, but have to complete each module by its due date in order to stay on track, and be on time with assignment submissions. See the Course Plan further below for the list of modules and completion due dates.

Examples and Exercises: Most modules will include examples and exercises. Students are expected to observe and analyze the examples, and then try applying what they have learned on a number of ungraded exercises. You are encouraged to seek the instructor’s help if and when you encounter problems working on the exercises.

Clinics and Online Help Sessions: Students will have the opportunity to work with the instructor face-to-face or online if they need and want to. Face-to-face clinics and online sessions will be scheduled based on the need and the availability of the student and the instructor. We will use Team Viewer (available at http://www.teamviewer.com) for online help sessions.
Assignments: Students will work on a number of assignments throughout the semester. These will generally focus on improving and extending the examples. Students are expected to work on these assignments individually, and not receive any help from classmates or other individuals. If any of the assignment due dates is a holiday for you, please inform the instructor in advance, so an alternate due date can be set for you.

Individual Project: Students will work on a semester-long individual project where they will build a small-scale, non-trivial web-enabled application running on PHP and MySQL. Students will choose their topic and develop the underlying database structure in consultation with the instructor. The project application will be developed after the topic and the database is fully approved by the instructor. The application will perform basic functions that would be expected from a web-enabled database application, such as listing, adding, editing, and deleting data. Students are expected to work on this project individually, and not receive any help from classmates or other individuals.

Grading:

Assignments: 40%

Individual Project: 60%

There will be no mid-term exam or final exam for this course. Your grade will be based on your performance on the assignments and the individual project.

Text, Video and Online Resources:

Over the years, I have observed that students come to this course with different levels of existing knowledge and experience on scripting and databases. Furthermore, each student has a different learning style and benefit from different types of resources; while written materials works for some students, other students find audio-visual materials more helpful. I have even seen students who do most of their learning via reading online forums on PHP and MySQL. Consequently, there are no “required” textbooks or other resources that I ask all students acquire and use. Instead, I give you an annotated list of text, video and online resources that will be conducive to your learning depending on your existing level of knowledge of web-enabled databases and your learning style. Feel free to contact me if you would like to discuss any of the items listed below.
Books:

  (A very balanced book that should appeal to both absolute new-comers, as well as students at an “intermediate” level. This is the book I will use most as a basis for my examples. If you are very new to scripting and databases, this may be a good choice as far as books go. An electronic version of this text is also available; you will need to search for an online outlet to acquire it.

  (A pretty fun book which provides a gentle introduction to PHP and MySQL. Should work nicely for the visual learner, but may be a little “too cute” for more experienced students who are willing move more directly through topics.)

  (Covers topics in a straightforward and simple style, but may expect you to be already familiar with some basic web-enabled database concepts. May appeal more to students with some experience in programming and/or databases.)

  (This book covers more advanced topics compared to the other books listed. The progress through topics is faster than the other books, too. This might be of interest to students who come to the course with existing experience with scripting and databases.)

Video Resources:

- **Lynda.com**
  (A subscription-based video training website which offers a few courses on PHP and MySQL among many other topics. Each course includes a few freely-available units for sampling out, and the rest of the units are available for subscribers. It is possible to purchase DVDs of some of the courses, but at around $25-$40 a month, subscription may be the most cost effective solution for the purposes of our course.)
• **Video2brain.com**
  (Another subscription-based video training website which offers more affordable subscription rates, but a somewhat more limited repertoire on PHP and MySQL. Some units (lessons) are free here, as well.)

• **PHP and MySQL LiveLessons**
  (A video/book package you can purchase via online stores. Might be a little outdated, and perhaps not very cost effective as a video resource.)

• **Youtube.com**
  (Youtube features a huge number of videos on PHP and MySQL. (A simple search for “PHP MySQL” returned about 16,000 hits.) However, find a structured, high-quality course might be tricky, if not totally impossible. Still, this should be a good source for looking individual topics or problems up whenever you need to some extra examples.)

**Websites:**

• **w3schools.com**
  (This site features some quick, to-the-point lessons on PHP and MySQL. These lessons may be a little terse for people who prefer detailed, step-by-step explanations, and should work better for “looking things up”, as a reference guide or checking out some extra examples.)

  (A comprehensive and authoritative reference manual for MySQL.)

  (A comprehensive and authoritative reference manual for PHP.)

**Software:**

We will use a number of freely available open source software for this course. Specifically we will use:

- **Apache web server** (or some other web server, if you already know how to install and administer it.)
- **PHP 5** (This is required. No other scripting module will do.)
- **MySQL database server** (This is required. No other database server will do.)
- MySQL GUI tools 5.0 (This is required. Feel free to use MySQL Workbench, phpMyAdmin or any other GUI tool in parallel, but I will require you to send me your database dumps in MySQL Administrator format, which is part of the MySQL GUI Tools suite.)

The recommended way to acquire these components is to download a "distro" that bundles these software, such as XAMPP. Distro installations are generally simpler, and XAMPP is recommended by the textbook that we will use, as well. XAMPP includes Apache, PHP and MySQL. You will still need to download and install the MySQL GUI Tools separately, since that package is not included in XAMPP. Please install these software at your earliest convenience.

Please refer to “Module 03 - Software Installation and Tests” on the ELMS course space for more information.
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<th>Learning Module Title</th>
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<td>01</td>
<td>Database basics and normalization</td>
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<tr>
<td>1 [7/9-7/15]</td>
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<td>Introduction to web-enabled databases</td>
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<td>MySQL</td>
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<td>1 [7/9-7/15]</td>
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<td>2 [7/16-7/22]</td>
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<td>3 [7/23-7/29]</td>
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<td>PHP + MySQL</td>
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<tr>
<td>3 [7/23-7/29]</td>
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<td>3 [7/23-7/29]</td>
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Policy on Academic Misconduct

Cases of academic misconduct will be referred to the Office of Student Conduct irrespective of scope and circumstances, as required by university rules and regulations. It is crucial to understand that the instructors do not have a choice of following other courses of actions in handling these cases. **There are severe consequences of academic misconduct, some of which are permanent and reflected on the student’s transcript.** For details about procedures governing such referrals and possible consequences for the student please visit [http://www.studentconduct.umd.edu/](http://www.studentconduct.umd.edu/)

University of Maryland Code of Academic Integrity:

"The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit [http://shc.umd.edu/SHC/default.aspx](http://shc.umd.edu/SHC/default.aspx)."

Special needs

Students with disabilities should inform the instructor of their needs at the beginning of the semester. Please also contact the Disability Support Services (301-314-7682 or [http://www.counseling.umd.edu/DSS/](http://www.counseling.umd.edu/DSS/)). DSS will make arrangements with the student and the instructor to determine and implement appropriate academic accommodations. Students encountering psychological problems that hamper their course work are referred to the Counseling Center (301-314-7651 or [http://www.counseling.umd.edu/](http://www.counseling.umd.edu/)) for expert help.