

INFM 718N - Web-Enabled Databases

Spring 2008 - Tentative Syllabus¹

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Office Hours:	4:00-5:00 PM Tuesday	Office Hours:	By appointment

Class meeting time and place:

Tuesday evenings 6:00 PM to 9:00 PM at Hornbake 2119 (Wireless Lab)

Catalog Description:

Basic methods and tools for developing dynamic, database-driven web sites. Acquiring, installing and running web servers, database servers, and connectivity applications. Developing web interfaces, and application-layer components. Prerequisite: INFM 603, 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 web sites. These functionalities enrich the user experience, and facilitate porting of many information tasks to web environment. INFM 718N Database-driven Web Applications will introduce tools and methods for developing database driven web sites. The course will introduce initial steps of building a dynamic web site, 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 the functionality of the web site.

Goals:

After completing this course the student will be able to:

- Understand the basic approach and key development elements to building dynamic web sites.
- Acquire, install and maintain a web server.
- Acquire, install and maintain a database server.
- Acquire, install and maintain applications that provide connectivity 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 web sites.

Elements of the Course:

In-Class Exercises: Class sessions will follow the chapters of the textbook. We will dissect, analyze, replicate and extend the examples from the textbook. It is highly advisable to bring your own computer to class. If you do not have a computer that you can bring to class, you can use one from the laptop cart in the Wireless Lab. You are expected to attend all of the class sessions, unless you are sick or you have a serious emergency. Please plan your travels and other aspects of your personal and professional life accordingly. If there is an unavoidable conflict in your schedule, please inform the instructors in advance. Missing more than three sessions with explanation, or more than one session without explanation will affect your grade.

¹ This syllabus is subject to change. Please check http://www.wam.umd.edu/~vdiker/INFM718N_08_02/ frequently for updates.

Take-home Assignments: Students will work on a number of take-home assignments throughout the semester. These will generally focus on improving and extending the class examples. Students are expected to work on these assignments individually, and not receive any hands-on 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.

Group Project: Groups of two or three students will work on a semester-long project, where they will build a non-trivial web-enabled database application running on PHP and MySQL. Each group will pick a topic for their application through discussions in class, with the instructor and other groups. The work on the projects will be completed in four phases. There will be three interim submission of the on-going work throughout the semester, which will be followed by the final submission of the finished project. The final versions of the applications are expected to perform all basic functions that would be expected from a web-enabled database application, such as reading, writing, deleting, and querying data. Further specifications will be given as the semester unfolds.

Individual Project: Each student will build a non-trivial web-enabled application running on PHP and MySQL. The topic and the specifications of the application will be communicated to class. Students are expected to replicate the entire functionality of the communicated application. 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 build their applications individually, although they can receive **non-hands-on** help about what to build, and how to build it. If the project due date is a holiday for you, please inform the instructor in advance, so an alternate due date can be set for you.

Grading:

In-Class Participation and Attendance	10%
Take-home Assignments	30%
Group Project	30%
Individual Project	30%

Required Text:

PHP and MySQL for Dynamic Web Sites, 2nd Edition, Larry Ullman,
Peachpit Press, 2005. ISBN: 0321336577.

Other Relevant Texts:

Beginning PHP 5 and MySQL: From Novice to Professional, Jason Gilmore,
Apress, 2004. ISBN: 1893115518.

Web Database Applications with PHP and MySQL Hugh Williams and David Lane,
O'Reilly - ISBN: 0596000413

Software:

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

- Apache web server (version 1.3.33, available at <http://archive.apache.org/dist/httpd/binaries/>)
- MySQL database server (version 4.1.22, available at <http://www.mysql.org/downloads/mysql/4.1.html>)
- MySQL GUI tools (version 5.0, optional but highly recommended, available at <http://www.mysql.org/downloads/gui-tools/5.0.html>)
- PHP (version 5.2.0, available at <http://www.php.net/downloads.php>)

Please refer to http://www.wam.umd.edu/~vdiker/INFM718N_08_02/software.html for download links, installation instructions, and video demonstrations of how to install, configure and test the software.

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Tentative Course Plan²

	Date	Topics	Activities	Textbook	Work Due
1	January 29	Introduction	Installations and setups	Appendix A	
2	February 05	Programming with PHP	Forming project groups	Chapter 1	
3	February 12	Programming with PHP	Project idea development	Chapters 1, 2	
4	February 19	Dynamic Web Sites SQL and MySQL	Project prototype development	Chapters 3, 4	
5	February 26	SQL and MySQL		Chapter 5	
6	March 04	Using PHP with MySQL		Chapters 5, 7	
7	March 11	Using PHP with MySQL		Chapter 7	
---	March 18	NO CLASS - Spring Break	NO CLASS - Spring Break	---	
8	March 25	Error handling and debugging		Chapter 6	
9	April 01	Web application development		Chapter 8	
10	April 08	Web application development		Chapter 9	
11	April 15	File Uploads		Chapter 11	
12	April 22	Cookies and sessions, Security		Chapter 10	
13	April 29	Advanced topics		Chapter 11	
14	May 06	Sample applications	Group project presentations	Chapters 13, 14	
15	May 13	Course wrap-up	Group project presentations	---	

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