ITMD 462/562 Syllabus
Web Site Application Development
Fall 2015

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Course Catalog Description: Programming the Common Gateway Interface (CGI) for Web pages is introduced with emphasis on creation of interfaces to handle HTML form data. CGI programming is taught in multiple languages. Security of Web sites is covered with an emphasis on controlled access sites. Setup, administration and customization of content management systems including blog and portal sites is introduced. Students design and create a Web site including basic CGI programs with Web interfaces and process data flows from online forms with basic database structures. **Prerequisites:** [(ITMD 461)] **Credit:** (2-2-3) (C)

Course Outcome: Students completing this course will be able to demonstrate a strong knowledge in the design and development of dynamic web pages and web applications using the PHP language and associated frameworks. These dynamic web pages and web applications will connect securely to databases, handle user-entered data, and provide a user interface using HTML and CSS.

Course Objectives: At the conclusion of this course, each successful student will able to:

- Explain the client and server architecture of the Internet and related web technologies.
- Use a basic text editor and other software tools to create dynamic web pages using the PHP language, HTML, CSS, and associated media.
- Deploy web pages to a Linux-based web server using SFTP.
- Configure and setup a local development environment based on a LAMP stack.
- Explain the role of forms in web applications.
- Implement and describe basic security for form processing and database use.
- Explain how to create authenticated user sessions in a web application.
- Use PHP to store data in files on the server file system and in a database system.
- Detail the use of PHP language features including variables, arrays, functions, classes and objects, control structures, namespaces, and basic syntax.
- Outline the role of dynamic web pages and web applications in the modern web
- Describe various PHP frameworks and open source applications and their use cases.
- Outline the types of resources server applications can connect to and their advantages and disadvantages.
- Explain why automated code testing is beneficial to the development process.
- Outline how Object Oriented programming patterns are used to create reusable functionality.

Lecture Days, Time & Place: Wednesdays 6:25pm to 9:05pm, Stuart Building, Room 111, 10 W. 31st Street on IIT's Main Campus, or online via IIT Online.

Course Overview: This course is an introduction to web development with a focus on back-end/server-side web development. We will be building dynamic web pages and sites using primarily the PHP language. In the course we will also investigate communicating with databases and serving our pages using an Apache web server. We will also try to look at various PHP based frameworks and CMS applications.

Course Schedule: *This schedule is tentative and will change based on course progress. Updates to the schedule, readings, and assignments will be posted to Blackboard on a weekly basis and announced in class.*

Session	Date	Tentative Topic
1	August 26	Syllabus Review / Review Basic Web Technologies Introduction to server side web development
2	September 2	Introduction to PHP / Setting up for local development
3	September 9	PHP Language / Expressions and Control Flow
4	September 16	PHP Functions, Objects, Namespace
5	September 23	PHP Forms Processing / print out / file handling / date & time
6	September 30	PHP Sessions, Authentication, Cookies / Start talking about Databases

7	October 7	PHP Database Basics – PDO & sqlite
8	October 14	PHP Database Continued - MySQL
9	October 21	**NO LIVE CLASS: There will be a makeup video** – Maybe Testing
10	October 28	PHP CMS Systems
11	November 4	PHP Frameworks
12	November 11	PHP Frameworks
13	November 18	PHP Frameworks
14	November 25	**NO CLASS: Thanksgiving Break**
15	December 2	Intentionally left open for advanced topics or Project Workshop
Finals	Week of Dec 7	Final Examination as per the IIT Final Exam schedule

Textbook: The is no physical textbook for this course. Reading material will be assigned from online resources. The primary online text will be the official PHP manual located at http://php.net/docs.php. Other resources will be listed in blackboard as the course progresses.

Technology Requirements: All of the work for this class can be done on virtually any computer operating system, Windows, Mac or Linux. You need to have access to a computer for this class, you will probably need to install software. There is no paid software you will need in this class. There are commercial products you may use but free or open source alternatives will be discussed and suggested.

You should be familiar with how to use your computer, install software, and edit and save files into different folder structures. You will need to understand the folder/path structure your files are saved in and be able to transfer files using an SFTP program. We will discuss other applications you may use for this class.

You will need to have access to a web server with PHP to run your programs. We will show you software solutions you can install on your computer to provide you with a complete local development environment. Later in the class we will be using a server on the internet but that is not a replacement for your local development environment.

This course is a programming course. I expect that everyone in this course has been exposed to programming at some level, ideally an object-oriented language. I also expect that everyone in this course has at least been exposed to basic database concepts. We will be discussing object-oriented language concepts and database concepts but this is not a full course in either. If either is not a familiar topic you will probably need to do a lot of extra research and reading. You should also understand basic HTML and CSS since it is a prerequisite course.

Readings/Videos: Readings for the class will be assigned from the textbook as well as in the form of online reading. The reading assignments will be posted on Blackboard and discussed in class. Online resources and videos will be linked from or embedded in a Blackboard page. It is essential that you do all readings and/or view the videos before coming to class on the assigned date. These materials are a necessary and integral part of the class and will form the basis for any class discussions on the topic. Specific readings are assigned by topic. I will also provide video and audio screencast recordings of my computer that may be watched in addition to or instead of the IIT Online videos.

Course Notes: Copies of the course lecture notes in the form of a PDF of the PowerPoint presentation accompanying each lecture will be provided for each student on Blackboard. This should be useful if you must miss a class. You should be aware that note taking is encouraged and should help your understanding of the material. Some topics discussed in class may not be in the lecture presentation file so please take notes during class as downloading the professor's PowerPoint presentations are not full substitutes for a lecture's content.

Course Web Site: http://blackboard.iit.edu/

Blackboard: The course will make intensive use of Blackboard (http://blackboard.iit.edu/) for communications, assignment submissions, group project coordination, providing online resources and administering examinations. All remote students will view the course lectures online via Blackboard, and online readings will be found on Blackboard.

Guest Lectures: Guest lecturers may be featured as part of course topics. When a guest speaker is expected you should make an extra effort to be seated and ready prior to class time. A question & answer/ discussion period will be held at the end of each lecturer's presentation.

Attendance: If you are in a live section of the class and will not be able to attend class, please notify me via email **prior to class time**. Live section students who miss a class should always watch the lecture online.

Assignments: The only way to learn the concepts presented in this class are to work with them. There will be two main types of assignments for this class. The first are smaller assignments or labs that are typically due in about a week and larger project based assignments that will span multiple weeks. The number of assignments/labs may very based on course progress. There will also be a larger final project that spans the entire course content and will be due **before finals week**.

Graduate students will have extended requirements for each assignment. These will be detailed in the assignment specification. These may include additional functionality, code style requirements, testing requirements, written documentation, or any other added requirements.

Discussion Board: Throughout the semester I may post questions or topics in the discussion board area in blackboard. Students are expected to post comments in these discussion boards. I will notify class anytime a topic is opened in the discussion board, but you should check weekly anyway. Discussion board entries may be links to online articles addressing topics applicable to the course, or may be personal reflections or opinions on topics applicable to the course. If you link to an outside resource, please also explain the link. All students are expected to read all of the discussion board entries in a particular topic. Completion of appropriate discussion board entries and reading of the discussion board will be included in your class participation grade.

Quizzes:

I may give quizzes at my discretion and may use them for verification that you have completed assigned course readings, attended class, or have read and participated in the discussion boards. Quizzes will potentially be given randomly during class lectures. Any discussions or cheating during a quiz would result in a zero for the grade. Quizzes would be a timed online test via Blackboard for students enrolled in internet sections if I give an in class quiz. These are used as a measure of class attendance and participation and will not be offered online for students in live course sections or allowed to be made up in case of a missed class without a documented reason. As they are discretionary, the number and type of quizzes may vary. I may choose to have an online quiz for both live and online students in addition to the quizzes described above at my discretion.

Examinations: The mid-term and final examination will consist of an examination measuring course outcomes and topics as discussed in class and in the reading assignments. The mid-term exam will be given around the middle of the semester and the final exam will be given during the university's final exam week. Details for the particular exam will be posted in blackboard and discussed in class.

Extra Credit: In general, I do not provide additional extra credit assignments. Occasionally there may be extra credit components of assignments/labs/projects but that is at my discretion and is not guaranteed.

Academic Honesty:

Plagiarism: All work you submit in this course, both code (EXCEPT the code present in any included code libraries) and written words, **must be your own**. You must fully attribute **all** material directly quoted in papers and you must document all sources used in the preparation of the paper using complete, APA-style bibliographic entries. Including directly quoted material in an assignment without attribution is always plagiarism and will always be treated as such by me. No more than thirty-three percent of material included in any paper may be direct quotes. If you submit plagiarized material you **WILL** receive a grade of **ZERO** for the assignment, an Academic Honesty Violation Report will be filed, and it may result in your expulsion from the course with a failing grade as per the IIT and ITM academic honesty policies. **There is no excuse for not understanding and following this policy** and if you do not understand it please let me know and I will be happy to discuss it with you.

Collaboration: Students may only collaborate on assignments or projects that are explicitly designated as group assignments or projects. Students submitting work that is identical or in some cases even substantively the same will be asked to discuss the assignment with me. If one student admits to having copied the work, or if there is clear evidence who is guilty, the guilty student **WILL** be assigned a grade of **ZERO**. If no one admits to the offense or a reasonable determination of guilt cannot

be made, **EACH** student involved **WILL** be assigned a grade of **ZERO**. In either case, an Academic Honesty Violation Report will be filed, and it may result in your expulsion from the course with a failing grade as per the IIT and ITM academic honesty policies.

Grading: Grading criteria for ITMD 462 and ITMD 562 students will be as follows:

Points will be deducted for various reasons including non-functioning code, poor mark-up, obsolete elements, invalid markup/code or non-validating markup/code, improper use of JavaScript, obvious copy and paste of old website code, quality of work, and not following methods discussed in class.

Assignments will be given with plenty of time to complete the work requested. Generally, assignments will be due the same day of the week as our class and discussed the following class. Assignments will not be accepted late after we discuss them in class. ***If you submit your assignment late you will lose 10% of your assignment grade every 24 hours that your submission is late, starting from 1 minute after the deadline.*** Assignments will not be accepted later than 1 week after the deadline or after they are discussed in class. Extensions are given only in very rare circumstances due to serious illness or family emergencies and will only be considered if notified **48 hours before** the deadline and with documented proof of hardship. There will be **NO EXCEPTIONS** to this policy. Please plan ahead and complete your work on time, or early.

See student handbook for grade percentage to letter grade table for undergraduate vs. graduate students. Graduate level students cannot receive a D letter grade for the class.

Assignments will be graded according to the following guidelines. They will be graded on completeness of the requirements and quality of work. In order to receive an "A" you would need to fulfill all the requirements and show a high quality of work that reflects substantial effort. No student should expect an "A" for just satisfying the basic requirements of the assignments.

Grading standards for undergraduate and professional learning students

A	*Outstanding work reflecting substantial effort*	90-100%
B	*Excellent work reflecting good effort*	80-89.99%
C	*Satisfactory work meeting minimum expectations*	70-79.99%
D	*Substandard work not meeting expectations*	60-69.99%
E	*Unsatisfactory work*	0-59.99%

Grading standards for graduate students

A	*Outstanding work reflecting substantial effort*	90-100%
B	*Adequate work fully meeting that expected of a graduate student*	80-89.99%
C	*Weak but marginally satisfactory work not fully meeting expectations*	65-79.99%
E	*Unsatisfactory work*	0-64.99%

The final grade for the class will be calculated as follows:

Assignments/Labs	**40%**
Final Project	**20%**
Mid-term Exam	**10%**
Final Exam	**20%**
Class Participation including Attendance, Discussion, and Quizzes	**10%**

Other Class Resources: Online readings and other class resources may be found at on Blackboard.

Our Contract: This syllabus is my contract with you as to what I will deliver and what I expect from you. If I change the syllabus, I will issue a revised version of the syllabus; the latest version will always be available on Blackboard. Revisions to readings and assignments will be communicated via Blackboard.

Disabilities: Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and make an appointment to speak with me as soon as possible. My office hours are listed on the first page of the syllabus. The Center for Disability Resources (CDR) is located in 3424 S. State St., room 1C3-2 (on the first floor), telephone 312.567.5744 or disabilities@iit.edu.