**Palestine Polytechnic University**

**College of IT and Computer Engineering**

**Department of Information Technology**

**Web Technologies**

**A Community Based Learning Course**

**“From Exam Factories to Communities of Discovery”**

**Course Instructor and Facilitator**

**Mohammed Jabari**

**Fall 2015**

**COURSE:** Web Technologies, 3 CH, Fall 2015.

**PREREQUISITES:** Object Oriented Programming.

**INSTRUCTOR:** Mohammed Jabari, BSc. Computer Engineering, MSc. Internet and Distributed Systems.

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**Office Hours:** Sun, Tues, and Thur. 10:00 – 12:00

**Community Based Learning (CBL) Course:**

A CBL course is designed to generate a verity of direct and indirect benefits and contribute to the sustainable learning outcomes, which includes civic responsibility, critical thinking and very high level of communication skills. In this course students will work with a local community partner to develop and implement a Web application to meet its needs

**COURSE DESCRIPTION:**

In this course the students will have an understanding of theory and practice of Developing Web Applications by working with and learning from local private IT sector companies by implementing projects aimed at helping local community partners. The students will work on the community partners needs and they will develop a Web Application that meet their needs.

Students will be divided into groups each group will work in a different Web App related to the community partner needs. The process of the Web App development with the local community partner will cover a variety of technologies and the art of combining these tools to achieve the needs and requirements of a real client.

Although Web Technologies is a huge topic, the aim of this course is to get you started with the fundamentals, to help you understand the underlying architecture of the Web, and to appreciate why things are done in certain ways. It is beyond the scope of any course to cover everything under the sun related to Web Technologies, but after this course (and doing the Lab exercises and course project), you will be well equipped to tackle your next Web project challenge, the course capstone will be the project implemented with one of the local community partners

**Text Books**: As for this course there is no perfect (always up-to-date) Text Book but a lot of useful resources and practical books, to enrich the course experience, students are encouraged to draw information and knowledge from a variety of resources.

**RECOMMENDED BOOKS AND RESOURCES:**

* **Practical PHP and MySql, Jono Bacon**
* [**www.w3schools.com**http://www.w3schools.com](http://www.w3schools.com)
* **www.php.net**

**SUPPLEMENTARY MATERIALS:**

* Slides of the course.
* Class notes.
* Online course on elearning.ppu.edu

**TEACHING METHODS:**

1. Lectures
2. Community Based Project
3. In-class discussion
4. Lab Demos and Assignments

**INTENDED LEARNING OUTCOMES (ILOs):**

By the end of the course, student should be able to:

1. Develop a Web App that satisfies the requirements and needs of a real client
2. Translate the needs and requirements of a local community partner into a functional Web App
3. Reflect on the experience he has while working with a community partner
4. Deal with the uncertainty conditions outside the university campus and adapt to new situations
5. Understand and appreciate what Web technologies can bring to the future.
6. Understand the Web architecture.
7. Be familiar with different Web Technologies.
8. Develop Web Applications using PHP.

**COURSE OUTLINE AND CALENDAR:**

**CBL Component:**

|  |  |  |
| --- | --- | --- |
| **Phase** | **Details** | **Week** |
| Introduction | The Course policy will be explained, students groups will be formed and assigned first task | 1 |
| Phase 1: CBL Project Proposal | Each students group will go and find a local community partner or will be assigned one. In this phase each group should present a CBL project proposal | 1 |
| Phase 2: Discussion | Each students group will present a report of the work done, problems faced. A discussion among all groups will take place. | 4 |
| Phase 3: Prototyping and Acceptance | Each group should have developed a prototype of the Web app that meets the requirements of the community partner, community partner representative may be there to comment on the progress | 7 |
| Reflection Session | The session focus on an interactive discussion with students about their work, problems they faced and suggestions | 12 |
| Phase 4: Presentation | Project Submission, Discussion, and Evaluation | 15 |

**Course Topics**

|  |  |
| --- | --- |
| **Week** | **Topic** |
| 1 – 3 | Introduction to Web Technologies   * Overview of Web Client/Server Structure * HTTP Protocol * Static vs. Dynamic Pages * Client-Side vs. Server-Side Web Programming * Overview of Different Technologies * HTML (self-study) * CSS * JavaScript (overview) |
| 4 | Introduction and Overview of Server Side Technologies |
| 4 | Introduction to PHP |
| 5 | PHP language basics: Control Structures, Loops, Arrays and functions |
| 5 | Forms: Get and Post methods |
| 6-7 | Accessing Database using PHP |
|  | **Midterm Exam** |
| 8 | Managing State: Sessions and Cookies |
| 9 | Validating User input: SQL code Injection, XSS attacks |
| 10 | XML and AJAX |
| 11-12 | Introduction to MVC design Pattern, CMS, and some PHP frameworks |
| 12 | SEO: Search Engine Optimization |
| 13 – 14 | Security: Authentication, authorization and SSL |
| **Final Exam** | |

**Work Load:**

Weekly Instructor Load: 9 hours.

Weekly Student Load: 12 hours: 3 Lectures + 2 Lab + 3 HW + 4 Community Based

**ASSESSMENT MEASURES AND GRADING SYSTEM:** Student's performance in this course will be evaluated according to the following **grading system**:

Mid Exam: 20%

Final Exam: 20%

CBL Component: 50%

Lab: 10%

**COURSE POLICIES:**

1. **University Policy:** The student should know all university policies related to his study published by the Registrar’s Office.
2. **Attendance policy:** Regular attendance of all classes and Labs meetings is compulsory. You are expected to attend each class/lab, if you miss a day, it is solely your responsibility to seek out another student or the instructor to find out what you missed.
3. **Late Assignments:** Any assignment turned in late will be subject to a grade reduction or a grade of zero, as follows:

One day late: 10% of marks are deducted

Two days late: 20% of marks are deducted

Three days late: 30% of marks are deducted

Four days late: zero score

1. **Missed exams:** There are NO make-up exams. If you miss a quiz or an exam, your academic supervisor must accept the EXCUSE. Then, your grade will be based on the other remaining quizzes and exams.
2. **Academic Dishonesty Policy:** At PPU, academic dishonesty includes but is not limited to submitting work that is not one's own, cheating on quizzes, mid-term and final examinations, and plagiarism. Academic dishonesty will not be tolerated and will be dealt with in accordance with the policy on academic honesty in the PPU published by the Registrar’s Office.