[Rensselaer Polytechnic Institute](http://undergrad.rpi.edu/setup.do)

**Course Syllabus**

**Course Title: Web Systems I**

**Course number: ITWS 2110 / CSCI 2960**

**Credit hours: 4 Credits**

**Semester/ year: Fall 2018**

**Meeting days: Tuesdays and Fridays from 12:00 PM to 1:50 PM**

**Room location: Lally Hall Room 102**

**Instructor**: **Thilanka Munasinghe**

**Office location: Amos Eaton, Room 133**

**Telephone number: (857) 998-8767**

**Office hours: Tue/Fri from 10:30AM to 11:30AM or by appointment**

**E-mail address: munast@rpi.edu**

**Skype, G+ : thilanka23, thilankawillbe@gmail.com**

**Teaching Assistant: Satej Sawant ( Section -01) & Prem Datre (section -02)**

**TA office location: ITWS Lab – Lally 205**

**TA office hours: Wed: 9:45am – 11:45am, Fri: 2:45pm - 4:45pm**

**TA e-mail:** [**sawans@rpi.edu**](mailto:sawans@rpi.edu) **(Satej Sawant) ,** [**datrep@rpi.edu**](mailto:datrep@rpi.edu) **(Prem Datre sec -02)**

**Course Description:**

This course involves a study of the methods used to extract and deliver dynamic information on the World Wide Web. The course uses a hands-on approach in which students actively develop Web-based software systems. Additional topics include installation, configuration, and management of Web servers. Students are required to have access to a PC on which they can install software such as a Web server and various programming environments.

**Student Learning Outcomes:**

1. Students will be able to explain and configure the fundamental structure of a Web application including the server environment, protocols used, and other underlying systems.
2. Students will be able to evaluate and justify choices in design patterns and technologies used in Web application development.
3. Students will be able to apply the principles of progressive enhancement in front-end Web development using HTML, CSS and JavaScript.
4. Students will be able to create, interpret and apply planning artifacts commonly used in modern Web application development, including the use of project specifications, wireframes, and site maps in the Web development process.
5. Students will be able to develop and troubleshoot secure Web application back-ends using an Apache, PHP and MySQL technology stack.
6. Students will understand and be able to implement the basic principles of Web services from the perspective of both the client and service provider.
7. Students will understand basic design and development practices.
8. Students will become familiar with the specification, project design, development and deployment phases of a project by identifying requirements, defining, implementing and deploying solutions.
9. By the end of this course, each student group will have defined the specifications for, developed, tested and deployed a working application. They will also have completed, reviewed and presented their solution to the class and guest audience.

**Required Textbook:**

There is no specific textbook for this course.

**Discussion Board:**

Current event articles related to the weekly topics may be put up on the discussion board in LMS to invite opinion/discussion. These topics will be accessible via the Internet and will be posted on the course LMS site weekly. Participation in the groups is expected and will count towards your class participation grade.

**Grading:**

Participation 10%

Labs/Homework 40%

Quizzes 20%

Group Project(s) 30%

Numerical averages will be calculated and letter grades will be assigned using the following criteria

90.0 - 100.0 = A-, A

80.0 - 89.9 = B-, B, B+

70.0 - 79.9 = C-, C, C+

60.0 – 69.9 = D, D+

<60.0 = F

**Attendance and Grading Policy**

The course will be presented in a series of lectures and labs both inclass and as homework. Attendance is expected and will be taken. Ultimately you are responsible for meeting the requirements of this course and to help your team accomplish their goals. Active participation is expected in every class, and your participation grade will be heavily weighted based on your attendance. If you have a valid reason for missing class, **notify** me prior to class.

**Academic Integrity**

**Integrity is an extremely important part of any professional’s character and behavior. This course expects the highest level of personal and academic integrity. You are encouraged to discuss homework and cases in groups, but each student should write the individual case and homework assignments separately. Any ideas and/or quotations from any source, including the Internet, should be properly referenced in homework and the Web Systems I Project. The Project is to be accomplished in collaboration with other team members. For any assignment associated with the Project, one individual from the team should submit one copy for the entire team on LMS. Any breach of the academic integrity code listed in the Rensselaer Handbook will be considered grounds for failure in the course.**

**LMS**

The course syllabus, assignments, grades, bulletin board, and other course materials will be available on LMS.

**Course Calendar**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Class Date** | **Key Topics** | **Comments** | **Complementary Readings** | **Assignments – due prior to class** |
| **Fri. Aug. 31** | * **Course Introduction** * **Review syllabus** * **Discuss Groups and Term Project** |  |  | * **Read and understand Syllabus** * **Experience Survey** |
| **Tue. Sep. 4** | * **Technology Review** | * **Networking** * **Web Architecture** * **Servers/Software/data** |  |  |
|  |  |  |  |  |
| **Fri. Sept. 7** | * **LAMP Stack – Start to setup environments** |  |  | * **Download required course software** |
| **Tue. Sept. 11** | * **Lab 1** |  |  |  |
| **Fri. Sept. 14** | * **Markup languages** * **HTML** * **XHTML** * **XML** |  |  |  |
| **Tue. Sept. 18** | **\* Stylesheets, CSS, DOM**  **Homework 1** |  |  | **Project Proposals Due** |
| **Fri. Sept. 21** | * **Lab 2** |  |  |  |
| **Tue. Sept. 25** | * **JavaScript** |  |  |  |
| **Fri. Sept. 28** | * **Jquery/AJAX (assignment read)** * **Lab 3** |  |  |  |
| **Tue. Oct. 2** | * **Review** * **Guest Lecture : GIT – Software versioning – setup** |  |  |  |
| **Fri. Oct. 5** | * **JSON/AJAX** * **Lab 4 – create JSON file and create output from Lab2** |  |  |  |
| **Tue. Oct. 9** | * **(Academic Monday)** |  |  |  |
| **Fri. Oct. 12** | * **Quiz 1** |  |  |  |
| **Tue Oct. 16** | * **Web Forms/10 HTML 5** * **Homework 2 - Hexed** * **PHP** |  |  |  |
| **Fri. Oct. 19** | * **Lab 5: Front End Opt** |  |  | **Term Project plans due**  **Read “ front-end workflow”**  **Read “ front-end Performance”** |
| **Tue. Oct. 23** | * **more PHP** |  |  | **Homework 2 due** |
| **Fri. Oct. 26** | * **Lab 6** |  |  | **Lab 5 due** |
| **Tue. Oct. 30** | * **Lab 7: PHP** |  |  | **Lab 6 due** |
| **Frid. Nov. 2** | * **MySQL** * **Lab 8: MySQL** |  |  | **Lab 7 due** |
| **Tue. Nov. 6** | * **php&MySQL** |  |  |  |
| **Fri. Nov. 9** | * **Lab 9 : PHP & SQL** |  |  | **Lab 8 due** |
| **Tue. Nov. 13** | * **Authentication** |  |  |  |
| **Fri. Nov. 16** | * **File handling** * **Web Security** |  |  |  |
| **Tue. Nov. 20** | * **Lab 10** |  |  | **Lab 9 due** |
| **Fri. Nov. 23** | * **Thanksgiving No Classes** |  |  |  |
| **Tue. Nov. 27** | * **Web Services** * **Web Tech** |  |  | **Lab 10 due** |
| **Fri. Nov. 30** | * **Term Project Presentations** |  |  |  |
| **Tue. Dec. 4** | * **Term Project Presentations** |  |  |  |
| **Fri. Dec. 7** | * **Quiz 2** |  |  |  |
| **Dec Finals** | * **No Final Exam** |  |  | **No Final Exam** |