Welcome to your 3rd course in Computing Applications Minor!

Course Syllabus

Course Number: CSC 307  
Course Title: Web Application Development for Biologists  
Number of Credits: 3  
Course Level: Undergraduates

Class hours: T, Th 2:00-3:15  
Class location: Zoom and iLearn

Instructor: Professor Ilmi Yoon  
(ilmi@sfsu.edu)

Office hours: Both mentor and instructor TBD on zoom

Prerequisite: CSc 220

Textbook: Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5  
(Learning PHP, MYSQL, Javascript, CSS & HTML5) 5th Edition by Robin Nixon

Course Website ilearn.sfsu.edu

Course Overview Basics of computer and WWW engineering relevant to studies in biological sciences. Covers basics of developing web and database applications. HTML, XML, CGI, Database queries, MySQL database. Introduction to creating web pages, reading and processing user input submitted through web pages; client side and server side programming; connecting a web page to a database.
Course Objectives: The objectives of this course are to:

- Introduce students who have little or no experience with creating and designing web pages with the tools needed to publish web pages.
- Teach formatting concepts in HTML, CSS, and XML.
- Cover the mechanism of CGI and HTTP.
- Teach the server side technologies using PHP.
- Teach additional tools such as AJAX and concepts like Cookie and Session.
- Teach basic concepts of data structures.
- Teach basic algorithms for sorting and searching.
- Teach database fundamentals with MySQL.

Learning Outcomes: Students who have successfully completed this course should be able to:

- develop interactive web pages using effective tools.
- understand and develop both the front end side and back end of web applications.
- use Database server and connect with web application back end.
- understand full stack web programming and develop a simplified version.

Grading:

- 5 Assignments: 40 points each (200 points total)
- 5 Quiz (HW): 15 points (75 points total)
- Midterm: 250 points
- Final: 250 points
- Class Attendance: 10 points each (100 max)
- Mentor Meeting: 10 points each (100 max)

Grading Scale:

- (A: >= 900, A-: >= 880; B+: >= 850, B: >= 820, B-: >= 800, C+: >= 780, C: >= 750, C-: >= 700, etc)
- Extra credit will be given at times – e.g., posting a lecture summary (+5 ec points)
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Misc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (starting from 8/28)</td>
<td>Introduction to Course</td>
<td>Assignment 1 [Displaying EggFarm game]</td>
</tr>
<tr>
<td>2 (starting from 9/4)</td>
<td>HTML, CSS, JavaScript</td>
<td>Hands-on 1 (12:35-1:00) HTML &amp; CSS Quiz - <a href="https://www.w3schools.com/html/default.asp">https://www.w3schools.com/html/default.asp</a></td>
</tr>
<tr>
<td>3 (starting from 9/11)</td>
<td>JavaScript</td>
<td>Assignment 2 [EggFarm Game, Lesson 1]</td>
</tr>
<tr>
<td>4 (starting from 9/18)</td>
<td>JavaScript</td>
<td>Hands-on 2 (12:35-1:00) JavaScript - <a href="https://www.w3schools.com/js/default.asp">https://www.w3schools.com/js/default.asp</a></td>
</tr>
<tr>
<td>5 (starting from 9/25)</td>
<td>HTTP Protocol</td>
<td>Assignment 3 [EggFarm Game, Lesson 2]</td>
</tr>
<tr>
<td>6 (starting from 10/2)</td>
<td>HTML Form</td>
<td>Hands-on 3 (12:35-1:00) HTML Form and JavaScript - <a href="https://www.w3schools.com/html/html_forms.asp">https://www.w3schools.com/html/html_forms.asp</a></td>
</tr>
<tr>
<td>7 (starting from 10/9)</td>
<td>PHP</td>
<td>Assignment 3 [EggFarm Game, Lesson 3]</td>
</tr>
<tr>
<td>8 (starting from 10/16)</td>
<td>PHP (Session)</td>
<td>Hands-on 4 (12:35-1:00) PHP - <a href="https://www.w3schools.com/php/default.asp">https://www.w3schools.com/php/default.asp</a></td>
</tr>
<tr>
<td>9 (starting from 10/23)</td>
<td>AJAX</td>
<td>Assignment 4 [EggFarm Game, Lesson 4]</td>
</tr>
<tr>
<td>10 (starting from 10/30)</td>
<td>Midterm (Review on Tuesday)</td>
<td>&lt;Prepare team term project&gt;</td>
</tr>
<tr>
<td>Week</td>
<td>Start Date</td>
<td>Topic</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>11/6</td>
<td>Understanding Web Server</td>
</tr>
<tr>
<td>12</td>
<td>11/13</td>
<td>Data Base Design</td>
</tr>
<tr>
<td>13</td>
<td>11/20</td>
<td>THANKS GIVING BREAK</td>
</tr>
<tr>
<td>14</td>
<td>11/27</td>
<td>SQL</td>
</tr>
<tr>
<td>15</td>
<td>12/4</td>
<td>Understanding other technologies (Node.JS, JQuery, Angular JS, Rest API)</td>
</tr>
<tr>
<td>16</td>
<td>12/11</td>
<td>Final Review (12/11) &amp; Final Exam on class (12/13)</td>
</tr>
</tbody>
</table>

**Program Assignments:**

You will use HTML, CSS, JavaScript and PHP for program development. **PROGRAMS THAT ARE NOT WORKING CORRECTLY WILL RECEIVE MINIMAL PARTIAL CREDIT.** Pretty print (indentation, etc.) and comment programs appropriately. Grades will be based on correctness, readability, the appropriate applications of object oriented techniques, efficiency, etc. Missing 3 programming assignments result in failing in the class regardless your midterm and final exam grades. Acquiring less than 50% of programming assignments will also result in failing in the class.

**Course Policies:**

**Attendance:** Attendance at online class and mentor sessions is mandatory. Note the 30% of points given to in-class participation and mentor sessions. While it might seem possible to get 70% of points (a passing score) without attending class, it is not actually possible due to team
work and quizzes that will occur during class time. **Technology needs:** If you need additional technology or internet access to attend online classes and complete assignments, please request assistance during Week 1 of the semester.

**Cheating and plagiarism:** Any form of cheating or plagiarism will incur very serious consequences. Carefully review the department’s policy on this matter: [http://www.cs.sfsu.edu/plagarism.html](http://www.cs.sfsu.edu/plagarism.html)

**Students with disabilities:** Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by email (dprc@sfsu.edu).

SF State fosters a campus free of sexual violence including sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. If you disclose a personal experience as an SF State student, the course instructor is required to notify the Title IX Coordinator by completing the report form available at [http://titleix.sfsu.edu](http://titleix.sfsu.edu), emailing vpsaem@sfsu.edu or calling 338-2032. To disclose any such violence confidentially, contact:

**The SAFE Place** - (415) 338-2208; [http://www.sfsu.edu/~safe_plc/](http://www.sfsu.edu/~safe_plc/)

**Counseling and Psychological Services Center** - (415) 338-2208 [http://psyservs.sfsu.edu/](http://psyservs.sfsu.edu/)

For more information on your rights and available resources: [http://titleix.sfsu.edu](http://titleix.sfsu.edu)

*Dates of quizzes and projects are an estimate*