TLEN5839: Secure Web Programming

Course Description
In Secure Web Programming you will learn to program secure and resilient multi tier web apps. No previous programming knowledge is required or assumed. The class will use PHP and MySQL to develop an application that can resist attacks and meet industry standards.

Techniques covered will include protecting against SQL Injection and Cross Site Scripting, coding standards, data encryption and data storage.

When you leave this class you will be a qualified to develop secure applications that can be deployed in a productions environment.

The security topics covered are: PHP Programming, MySQL/SQL Syntax, Multi tiered architecture, encryption, SQLi and XSS prevention, compliance, debugging and user authentication.

Goals
This course will apply Information Security concepts to software development. This will be accomplished through a combination of lecture and hands on examples.

A group project will be the culmination of the course.

Prerequisites
None.

Instructor
Joe McManus joe.mcmanus@colorado.edu

SA
TBD

Course Pages
https://learn.colorado.edu/d2l/home

Office Hours and Recitation
Monday 3-4.

Books
Grading
Homework: 70%
Project: 20%
Midterm: 10%

Grading Scale
93—100% A
90—92% A-
87—89% B+
82—86% B
80—81% B-
78—79% C+
70—77% C
0—59% F

Schedule
Tuesday & Thursday 3:30-4:45pm, 1B12

Syllabus

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Overview / Intro to PHP</td>
</tr>
<tr>
<td>1</td>
<td>Intro to PHP</td>
</tr>
<tr>
<td>2</td>
<td>Intro to MySQL</td>
</tr>
<tr>
<td>2</td>
<td>SQL Syntax</td>
</tr>
<tr>
<td>2</td>
<td>Intro to Multi Tiered Applications / TCP Ports</td>
</tr>
<tr>
<td>3</td>
<td>MySQL Security / Encryption</td>
</tr>
<tr>
<td>3</td>
<td>Encrypting Transport</td>
</tr>
<tr>
<td>3</td>
<td>Mid Term</td>
</tr>
<tr>
<td>4</td>
<td>User Authentication</td>
</tr>
<tr>
<td>4</td>
<td>Preventing SQLi and XSS</td>
</tr>
<tr>
<td>5</td>
<td>Logging and Debugging</td>
</tr>
<tr>
<td>5</td>
<td>HIPAA/SOX/PCI/Fips 140-2</td>
</tr>
<tr>
<td>5</td>
<td>Project Assignment</td>
</tr>
<tr>
<td>5</td>
<td>Project Presentation</td>
</tr>
</tbody>
</table>

IMPORTANT STATEMENTS

Disability
If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Center for Community N200, and http://www.colorado.edu/disabilityservices. If you have a temporary medical condition or injury, see guidelines at http://www.colorado.edu/disabilityservices/go.cgi?select=temporary.html
Disability Services' letters for students with disabilities indicate legally mandated reasonable accommodations. The syllabus statements and answers to Frequently Asked Questions can be found at http://www.colorado.edu/disabilityservices

**Religious Observances**

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please email me if you plan to miss class due to a religious holiday. See full details at www.colorado.edu/policies/fac_relig.html

**Classroom Behavior**

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at http://www.colorado.edu/policies/classbehavior.html and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

**Discrimination and Harassment**

The University of Colorado at Boulder Discrimination and Harassment Policy and Procedures, the University of Colorado Sexual Harassment Policy and Procedures, and the University of Colorado Conflict of Interest in Cases of Amorous Relationships policy apply to all students, staff, and faculty. Any student, staff, or faculty member who believes s/he has been the subject of sexual harassment or discrimination or harassment based upon race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550.

Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at http://www.colorado.edu/odh

**Honor Code**

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution.

Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at http://www.colorado.edu/policies/honor.html and at http://www.colorado.edu/academics/honorcode/