DePaul University

Course Syllabus

CSC 299-701

Li-Wey Lu
9-13-2021

General Course Information

Course Number and Title:

CSC 299: Sophomore Lab in Applied Computing

Section Number and Topic:

Web Application Security

Course Description:

In this course, students investigate a particular application of computing. Students learn tools, methodologies, and formalisms used in a particular computing area, and apply them to develop working systems. Courses stress student initiative in investigating the application context, learning new tools (including languages and APIs), studying algorithms and code examples, and working on projects. Topics will vary by the faculty member's interest and perspective. PREREQUISITE(S): CSC 242 or CSC 243

Topic Description:

This is a hands-on course that will introduce students to the world of web application security. Students will learn to assess web applications through assignments and in-class labs. Topics that will be covered are the following:

- Open Web Application Security Project (OWASP)
- Hypertext Transfer Protocol (HTTP)
- Frontend Languages
- Backend Languages
- Databases
- Authentication
- Authorization
- Session Management

Quarter and Year Offered:

Fall 2021 - 2022

Meeting Day and Time:

Tuesday 5:45pm – 9:00pm

Location:

CDM 00819 at Loop Campus

Type of Instruction:

Lecture and Lab

Course Management System:

Desire2Learn (D2L)

Textbooks (Optional):

- The Web Application Hacker's Handbook: Finding and Exploiting Security Flaws
  - ISBN-13: 978-1118026472
  - ISBN-10: 1118026470
- The Tangled Web: A Guide to Securing Modern Web Applications
  - ISBN-13: 978-1593273880
  - ISBN-10: 1593273886

Drop Dates:

Last day to drop AQ2021 classes with no penalty   09/21/2021

Last day to withdraw from AQ2021 classes   10/26/2021

Instructor Information

Instructor Name:

Li-Wey Lu

Office Hours with Location:

Tuesday 5:00pm – 5:45pm / 9:00pm – 9:45pm @ CDM 00819 at Loop Campus

Contact Information:

LLU8@depaul.edu

Return Email Policy:

I will do my best to respond to emails within 24 hours.

Learning Outcomes

At the end of this course, students will:

- Understand how web applications are developed
- Understand how web browsers operate
- Understand web architecture
- Understand the HTTP protocol
- Be able to proxy HTTP traffic
- Be able to analyze HTTP traffic
- Identify and remediate different web vulnerabilities
- Perform manual security assessments on web applications

Grading

Scale:

A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
F	0 – 59

Breakdown:

Homework	30%
Quizzes	30%
Final	40%

Week-by-Week

WEEK	DATE	TOPIC	ASSIGNMENT DUE
1	09/14	Introduction	N/A
2	09/21	Frontend / Backend	Week 1 Homework + Quiz
3	09/28	Authentication / Authorization / Session Management	Week 2 Homework + Quiz
4	10/05	OWASP Top 10 Pt. 1	Week 3 Homework + Quiz
5	10/12	OWASP Top 10 Pt. 2	Week 4 Homework + Quiz
6	10/19	Security Training Platform	Week 5 Homework + Quiz
7	10/26	Application Security Assessments	Week 6 Homework + Quiz
8	11/02	Previous Final Assessment	Week 7 Homework + Quiz
9	11/09	Final Walkthrough	Week 8 Homework + Quiz
10	11/16	Final Work Time	N/A

Assignments

Homework:

Homework will reflect the material covered in class and are due by the next week.

Quizzes:

Quizzes will reflect the material covered in class and are due by the next week.

Final:

Final will be a take home web application security assessment.

Policies

Changes to Syllabus:

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

Online Course Evaluations:

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Please see https://resources.depaul.edu/teaching-commons/teaching/Pages/online-teaching-evaluations.aspx for additional information.

Academic Integrity and Plagiarism:

This course will be subject to the university's academic integrity policy. More information can be found at https://offices.depaul.edu/oaa/faculty-resources/teaching/academic-integrity/Pages/default.aspx.

Academic Policies:

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at:
http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx

Incomplete Grades:

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx

Students with Disabilities:

DePaul University is committed to ensuring equal access to its educational and extracurricular opportunities for students with disabilities. The Center for Students with Disabilities (CSD) offers reasonable academic accommodations and services to support our students. We also serve as a resource to the many university departments that have a responsibility to accommodate students.

Please see https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx for Services and Contact Information.

Attendance:

Students are expected to attend each class and to remain for the duration. Coming 15 minutes late or leaving 15 minutes early constitutes an absence for the student. The overall grade for participation drops one-third after any absence. Three absences for any reason, whether excused or not, may constitute failure for the course.

Attitude:

A professional and academic attitude is expected throughout this course. Measurable examples of non-academic or unprofessional attitude include but are not limited to: talking to others when the instructor is speaking, mocking another's opinion, cell phones ringing, emailing, texting or using the internet whether on a phone or computer. If any issues arise a student may be asked to leave the classroom. The professor will work with the Dean of Students Office to navigate such student issues.

Civil Discourse:

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

Cell Phones / On Call:

If you bring a cell phone to class, it must be off or set to a silent mode. Should you need to answer a call during class, students must leave the room in an undisruptive manner. Out of respect to fellow students and the professor, texting is never allowable in class. If you are required to be on call as part of your job, please advise me at the start of the course.