## **COSC 484L: Web Engineering and Laboratory (1 credit)**

This course draws upon previous programming and computing experience to develop practical web development and maintenance skills. Specific technologies covered in this course include client-side and server-side scripting. *(Corequisite: COSC 484)*

**Course Learning Outcomes:**

By the end of the course, students will be able to:

A1. Demonstrate ability to design, develop, and deploy functional websites and web applications using industry-standard technologies.

B1. Develop skills in testing, secure, and maintain web applications.

C1. Work autonomously and responsibly in both individual and team-based web development projects.

C2. Demonstrate the ability to present and explain web development projects, technologies used, and design decisions made during the development process.

**Course Learning Materials:**

* Randy Connolly, Ricardo Hoar. Fundamentals of Web Development, 3rd edition, 2022, Pearson
* Roger Pressman, David Lowe. Web Engineering: A Practitioner's Approach, 2009, McGraw-Hill.

**Course Content:**

1. Application stack (LAMP/WAMP/MAMP, MERN)
2. Web app prototyping
3. Web App Development – Frontend: HTML, HTML 5
4. Web App Development – Frontend: CSS and CSS3
5. Web App Development – Frontend: JavaScript
6. Web App Development – Frontend: Templating Engines (Handlebars)
7. Web App Development – Backend: API
8. Web App Development – Backend: MongoDB
9. Web App Development – Backend: Nodejs, ExpressJS
10. Single Page Application: React
11. Testing and Security
12. Deployment
13. Maintenance