

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING***SE 3316A: Web Technology*****Course Outline Fall 2026**

COURSE DESCRIPTION: This course covers the technologies, protocols and architectures of the Internet. A major focus of this course is the technology and the drive towards interactive web applications. To achieve this, we will start with a brief introduction of the HTTP protocol as well as the syntax of associated languages (HTML, XML and CSS) and client-side/server-side scripting languages (JavaScript, PHP). We will take an in-depth look at the Representational State Transfer (ReST) paradigm and core components such as Asynchronous JavaScript And XML (AJAX), databases, and frameworks such as Angular that are used to build modern web applications that integrate services from multiple vendors. With this background, we will look at the concept of semantic web as well as the technologies that are being used in it. In each segment, we will also discuss the business implications of each of the protocols and their effect on application design. Throughout the course, we will also look at some of the legal, ethical and social issues surrounding these technologies.

ACADEMIC CALENDAR:

https://www.westerncalendar.uwo.ca/Courses.cfm?CourseAcadCalendarID=MAIN_022289_1

Technologies, protocols and architectures of the Internet. From HTML, XML, JavaScript to paradigms such as ReST and AJAX and software frameworks for developing modern web applications and integrating services from 3rd parties. We will also look at semantic web, business implications of these protocols as well as legal, ethical and social issues surrounding these technologies. Extra Information: 3 lecture hours, 2 laboratory hours.

PRE OR COREQUISITES: Prerequisites: SE 2202A/B, SE 2205A/B or Computer Science 2210A/B; ECE 4436A/B, or Computer Science 3357A/B

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course, and it will be deleted from your record.

ANTIREQUISITES: None

CEAB ACADEMIC UNITS: Engineering Science 75%, Engineering Design 25%

INSTRUCTOR INFORMATION:

Name:

Office/Office Hours:

Phone:

Email:

CONTACT HOURS:

Timetable information is available at <https://draftmyschedule.uwo.ca/>.

LECTURE:	
LAB:	
TUTORIAL:	

RECOMMENDED/REQUIRED TEXT: None

RECOMMENDED SOFTWARE: Visual Studio Code, Node.js, Github Desktop

RECOMMENDED RESOURCES/REFERENCES: None

GENERAL LEARNING OBJECTIVES (CEAB GRADUATE ATTRIBUTES)

Knowledge Base	I	Engineering Tools	A	Impact on Society	D
Problem Analysis	D	Individual & Teamwork		Ethics and Equity	
Investigation		Communication		Economics and Project Mgmt.	
Design	D	Professionalism		Life-Long Learning	D

Notation: x represents the content level code as defined by the CEAB. blank = not applicable; I = introduced (introductory); D = developed (intermediate) and A = applied (advanced).

Rating: I – The instructor will introduce the topic at the level required. It is not necessary for the student to have seen the material before. D – There may be a reminder or review, but the student is expected to have seen and been tested on the material before taking the course. A – It is expected that the student can apply the knowledge without prompting (e. g. no review).

COURSE MATERIALS: Weekly content and guides for the laboratories will be available on the course OWL site.

UNITS: SI

COURSE TOPICS AND SPECIFIC LEARNING OUTCOMES: This course covers the technologies, protocols and architectures of the Internet. Throughout the course, we will also look at some of the legal, ethical and social issues surrounding these technologies.

The following table summarizes the course learning outcomes along with CEAB GAls where the GAls in bold indicate ones to be measured and reported annually.

COURSE TOPICS AND SPECIFIC LEARNING OUTCOMES	(CAEB) Graduate Attribute
1. Introduction to network basics and world-wide web: HTML, CSS, client-side scripting with JavaScript, URL notation and Unicode [2 weeks] At the end of this section, students will be able to: a. Identify the use of these technologies in a given web application b. Create simple HTML pages with client-side JavaScript c. Be able to describe the process of creating and deploying a static HTML web page	KB4, ET1, LL1, LL2
2. Web technologies: HTTP protocol, server-side scripting with JavaScript, REST-full web services, XML processing, AJAX, creating and consuming web services [4 weeks] At the end of this section, students will be able to: a. Define all the components of the HTTP protocol b. Create simple server-side scripts with JavaScript c. Create a REST-full web service	KB4, PA, D, ET1, LL1, LL2
3. Web applications: Use of server-side applications such as databases in web applications, software frameworks for creating web applications, integrating services from other vendors on to web applications. [4 weeks] At the end of this section, students will be able to: a. Create a REST-full web service that uses server-side applications b. Use Angular framework for creating a web application. c. Integrate services such as social media and authentication from other vendors on to a web application	KB4, PA, D, ET1, LL1, LL2

4. Semantic Web: Resource Description Framework (RDF), RDF Schema, Web Ontology Languages (OWL) [1 week] At the end of this section, students will be able to: - Identify the role of RDF, RDF schema and OWL in semantic web - Justify the use of these technologies in a given application scenario	KB4
5. Legal, ethical and social issues: Privacy, content control/regulation, children and the internet, intellectual property, unsolicited commercial email, on line communities, internet activism, disabilities and the web, taxation [1 week] At the end of this section, students will be able to: - Identify legal, ethical and social issues on developing and consuming web-based applications - Describe specific legal, ethical and social issues in a given application scenario and identify measures to mitigate these issues	KB4, IESE1

EVALUATION:

Name	% Worth	Assigned	Due Date	CEAB GAs ASSESSED
Weekly Quizzes	10%			
Laboratory	40%			ET1
Midterm Test	10%			KB4
Final Examination	40%			KB4, IESE1

Note that the dates listed below are **tentative** and may be adjusted if needed. Marks will be assigned based on method of analysis and presentation, correctness of solution, clarity and neatness.

COURSE POLICIES:

All work submitted must be of professional quality in the requested format. Material that is handed in dirty, illegible, disorganized, or in an unapproved format will be returned to the student for resubmission and the late submission penalty will take effect. An additional penalty of 10% may be deducted for poor grammar, incoherence, or lack of flow in the written reports.

Use of AI: You may use AI tools at your discretion. You are responsible for understanding logic and flow of all code submissions and your grade may depend on it. You are also required to keep a record of all your prompts and AI engines within the GitHub repository for each lab so that the changes can be tracked. Lab submissions will be checked for code similarity, and any significant similarity will be treated as plagiarism. You will be held responsible for any code similarity arising out of using AI tools.

To obtain a passing grade in the course, a mark of 50% or more must be achieved on the final examination and 50% on the laboratory. A final examination < 50% or a laboratory mark < 50% will result in a final course grade of 48% or less. These conditions will be strictly enforced. Please contact the instructor before December if you think you are in danger of failing due to an insufficient lab mark.

Quizzes: Weekly quizzes (in-class) on Thursdays.

This course has 10 quizzes, each with 3-5 questions and the best 8 out of 10 quizzes will contribute toward 10% of the course grade. A missed quiz will be marked as a zero and academic consideration will not be granted for missed quizzes. In-class participation is required for all the quizzes.

Laboratories: All labs are due by 5pm on the Friday it is due. Labs must also be demonstrated by the end of your lab section to receive the lab mark. You may submit within 48 hours without penalty. Late submissions for labs 1-3 are accepted until November 20 with a 50% penalty. For lab 4, if you are not able to submit it by the submission cutoff date, you may request permission for late submission with a 50% penalty by Nov. 27th in writing. This request must be approved by the department as well as the Undergraduate Services office and you will be given an opportunity to submit lab 4 by Jan 4, 2027.

Lab	Assigned	Due Date	Demonstrate by	Mark out of 100%
Lab 1 – HTML+CSS				
Lab 2 – JavaScript				
Lab 3 – REST API				
Lab 4 – Full Stack				

Labs will run every week. Attendance of lab sessions is mandatory for receiving help and for demonstration of each lab assignment. All laboratory exercises are to be completed individually. A minimum average of 60% across all laboratory exercises is required to pass the course.

FINAL EXAMINATION: The final exam will take place during the regular examination period. The final exam will be 90 minutes long, closed book. Only simple, nonprogrammable calculators are allowed. To obtain a passing grade in the course, a mark of 50% or more must be achieved on the final examination. A final examination mark < 50% will result in a final course grade of 48% or less. If the above conditions are not met, your final grade cannot be greater than 48%. Students who have failed this course (i.e., final average < 50%) must repeat all components of the course.

LATE SUBMISSION POLICY:

Advise the instructor if you are having problems completing the assignment on time prior to the due date of the assignment and be prepared to submit an Academic Consideration Request and provide documentation if requested by the instructor at:

<https://www.eng.uwo.ca/undergraduate/academic-consideration-for-absences.html>

If you are granted an extension, establish a due date with the instructor. The approval of the Chair of your Department is not required if assignments are completed prior to the last day of classes. Extensions beyond the end of classes must have the consent of the instructor, the department Chair and the Associate Dean, Undergraduate Studies.

Documentation is mandatory.

This course employs flexible deadlines for assignments. The assignment deadlines can be found above in the course outline. For each assignment, students are expected to submit the assignment by the deadline listed. Should illness or extenuating circumstances arise, students are permitted to submit their assignment up to 48 hours past the deadline without academic penalty. Should students submit their assessment beyond 48 hours past the deadline, a late penalty of 50% will be subtracted from the assessed grade. **As flexible deadlines are used in this course, requests for academic consideration will not be granted.** If you have a long-term academic consideration or accommodation for disability that allows greater flexibility than provided here, please reach out to your instructor at least one week prior to the posted deadline.

ATTENDANCE: Attendance is not mandatory for lectures. Attendance is mandatory for all the quizzes. Attendance is mandatory for labs on days of demonstrations.

FACULTY OF ENGINEERING POLICIES:

Students must familiarize themselves with the policies of the Faculty of Engineering

<https://www.eng.uwo.ca/electrical//pdf/2025-UG-Policy-and-Procedures.pdf>