

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING**SOFTWARE ENGINEERING*****SE2202 A – Scripting Programming Language Fundamentals*****Course Outline Fall 2026**

COURSE DESCRIPTION: This course is intended to explore the concepts of scripting programming using JavaScript including variable, flow control, expressions, arrays, and objects, to allow students to write functions using objects, properties and methods needed to deliver simple interactive web-based programs. The course also includes coverage of basic HTML and CSS and discusses topics such as the best-practice JavaScript programming patterns.

Upon completion of the course, students will be able to:

- Know variable naming rules, JavaScript data types, and flow control.
- Identify expressions and operators and define functions and methods.
- Demonstrate objects and arrays usage and define constructors and inheritance.
- Describe the Document Object Model (DOM).
- Know managing web page styles using JavaScript and CSS.
- Demonstrate handling web page events.

ACADEMIC CALENDAR:

https://www.westerncalendar.uwo.ca/Courses.cfm?CourseAcadCalendarID=MAIN_028631_1&SelectedCalendar=Live&ArchiveID=

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PRE OR COREQUISITES:

Prerequisite(s): Engineering Science 1036A/B.

ANTIREQUISITES:

Computer Science 1046A/B.

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: N/A

RECOMMENDED SOFTWARE:

- [Visual Studio Code](#)
- [Node.js](#)

RECOMMENDED RESOURCES/REFERENCES: Course notes and supplementary material will be available at the Course Web site.

GENERAL LEARNING OBJECTIVES (CEAB GRADUATE ATTRIBUTES)

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

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 tutorials will be available on the course OWL site.

UNITS: SI

COURSE TOPICS AND SPECIFIC LEARNING OUTCOMES:

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 & Context for JavaScript By the end of this section the students should be able to: a. Recognize how web applications work b. Recognize how HTML and JavaScript are used to create web applications c. Outline the major milestones in JavaScript's history d. Recognize the differences between scripting languages and other types of languages e. Recognize the ECMAScript standard and its relation to JavaScript f. Identify different frameworks that use JavaScript to create desktop apps and mobile apps in addition to web apps	KB3, KB4
2. HTML & CSS By the end of this section the students should be able to: a. Identify the main elements of HTML & CSS b. Construct static websites using HTML & CSS c. Investigate problems in static websites and fix them d. Identify and use new elements that were not covered in the material by looking at the documentation	KB4, ET2

3. JavaScript in the browser By the end of this section the students should be able to: a. Recognize and use basic programming constructs of JavaScript including basic variable declarations, expressions, lexical structure and control flow structures b. Recognize and use developer tools available in the browser c. Recognize and use the <script> tag	KB4, ET2
4. Introduction to Node.js By the end of this section the students should be able to: a. Recognize and work with Node.js commands and tools b. Use Node.js with IDE (e.g. VS Code or WebStorm ... etc.) c. Compare Node.js and the browser as different environments to run JavaScript code	
5. JavaScript Functions By the end of this section the students should be able to: a. Identify and create function declarations b. Recognize and use functions as values c. Recognize and use closures d. Recognize and use nested functions	KB4, ET2
6. JavaScript Objects and Object Prototypes By the end of this section the students should be able to: a. Recognize the core operations of the Document Object Model (DOM) b. Work with JavaScript native objects, (e.g. Array, String, Date ...) c. Create objects and object prototypes d. Work with JSON objects	KB4, ET2
7. Object-Oriented Principles in JavaScript By the end of this section the students should be able to: a. Create and instantiate JavaScript classes b. Distinguish between Prototypal inheritance vs. Class based inheritance c. Implement encapsulation and information hiding in JS d. Recognize and use the “this” keyword in JS	KB3, KB4, ET2

8. JavaScript Events a. Recognize and use nested functions b. Recognize and work with events and event handling c. Define Custom events	KB4, ET2
1. Asynchronous programming By the end of this section the students should be able to: a. Recognize the difference between Synchronous Vs. Asynchronous programming b. Recognize and work with Callbacks and Promises	KB3, KB4, ET2

EVALUATION:

Name	% Worth	Assigned	Due Date	CEAB GAS ASSESSED
Participation	5%			
Tutorials (Total = 6)	10%			KB3, KB4, ET2
Individual Project Assignments (Total = 2)	15%			KB3, KB4, ET2
Mid-Term Examination	30%			KB3, KB4, ET2
Final Examination	40%			KB3, KB4, ET2

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

COURSE POLICIES:

GENERATIVE AI: VS Code IntelliSense and other standard editor features are permitted for assignments. Generative AI coding assistants, including GitHub Copilot, ChatGPT, Claude and similar tools may not be used to develop or assist in developing solutions for assignments unless explicitly stated otherwise (and in this case use must be disclosed). As the midterm and final are closed-book, generative AI (along with any other references) is also not permitted for these assessments.

PARTICIPATION: 5% of the course grade will come from iClicker questions and polls throughout lectures (marked only for completion). Students need to answer at least 85% of in-class questions for a full grade in this component. For individual absences, consideration will not be granted because of this flexibility. For longer illnesses or justified absences, please reach out to the instructor.

TUTORIALS: Throughout the semester, we will conduct a series of tutorials and support sessions designed to reinforce key concepts and assist with project assignments. These sessions are integral to the course, providing hands-on experience with essential tools. Attendance at the first six tutorial sessions is optional, however they are extremely valuable for ensuring you stay on track with your assignments.

INDIVIDUAL PROJECT ASSIGNMENTS: There will be two assignments to be completed individually that build on concepts introduced during the tutorial sessions. Each assignment will be posted two weeks before its due date, and students should expect they will take longer than the tutorial assignments.

MIDTERM TEST: There will be one midterm test, which will be a closed-book exam (no reference materials allowed) and will last for 90 minutes. Calculators are not permitted. If a student misses the midterm, the exam will not be rescheduled. Instead, the weight of the midterm will be added to the final exam, making the final exam worth 70% of the overall grade. If no valid justification is provided for missing the midterm, the student will receive a mark of zero for the test.

FINAL EXAMINATION: The final exam will take place during the regular examination period. The final exam will be 3 hours long, closed book. Calculators are not 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.

This course employs flexible deadlines for assignments. The assignment deadlines can be found posted on OWL. 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 20% per day 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 an 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 mandatory for all lectures and participation will be graded (as noted above). Attendance at tutorials is optional, but highly recommended.

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>

ABSENCE FROM MANDATORY COURSE COMMITMENTS: Students must familiarize themselves with the Policy on **Academic Consideration for Absences:**

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

I. Missed/Late Accommodation Policy

1. Students missing a test/assignment/lab or examination you will report the absence by submitting Academic Consideration Request form through [STUDENT ABSENCE PORTAL](#).
2. Documentation must be provided as soon as possible.
3. Forged notes and certificates will be dealt with severely. To submit a forged document is a scholastic offence.

II. Exam Accommodation

1. If you are unable to write a final examination, report your absence using the Academic Consideration Request Form through [STUDENT ABSENCE PORTAL](#).
2. Be prepared to provide the Undergraduate Services Office with supporting documentation (see next page for information on documentation) the next day, or as soon as possible (in cases where students are hospitalized). **The following circumstances are not considered grounds for missing a final examination or requesting special examinations: common cold, headache, sleeping in, misreading timetable and travel arrangements.**
3. In order to receive permission to write a Special Examination, you must obtain the approval of the Chair of the Department and the Associate Dean and in order to apply you must submit an the Academic Consideration Request Form through [STUDENT ABSENCE PORTAL](#).

PLEASE NOTE: It is the student's responsibility to check the date, time and location of the Special Examination.

III. LATE ASSIGNMENTS

IV. Medical Accommodation

1. Requests for Academic Consideration Request Form through [STUDENT ABSENCE PORTAL](#).
2. Requests for academic consideration must include the following components:
 - a. Self-attestation signed by the student (*This is only accepted for the first/one absence*)
 - b. Medical note. Forged notes and certificates will be dealt with severely. To submit a forged document is a scholastic offence.
 - c. Indication of the course(s) and assessment(s) affected by the request
 - d. Supporting documentation as relevant
3. Requests without supporting documentation are limited to one per term per course.
4. **Students must request academic consideration as soon as possible and no later than 48 hours after the missed assessment.**
5. Once the request and supporting documents have been received and reviewed, appropriate academic consideration, if granted, shall be determined by the instructor in consultation with the academic advisor, in a manner consistent with the course outline.

Academic consideration may include extension of deadlines, waiver of attendance requirements for classes/labs/tutorials, or re-weighting of course requirements. Some forms of academic consideration, such as arranging Special Examinations, assigning a grade of Incomplete, or granting late withdrawals without academic penalty, may only be granted by the Academic Advising office of the Faculty of Registration.

6. **An instructor may deny academic consideration for any assessment that is not required in the calculation of the final grade** (e.g., "8 of 10 quizzes"). Assessment flexibility must be indicated on the course outline.
7. **An instructor may deny academic consideration relating to the timeframe submission of work where there is already flexibility in the submission timeframe** (e.g., 72-hour submission window). This assessment flexibility must be indicated on the course outline.

V. Religious Accommodation

When scheduling unavoidably conflicts with religious holidays, which (a) require an absence from the University or (b) prohibit or require certain activities (i.e., activities that would make it impossible for the student to satisfy the academic requirements scheduled on the day(s) involved), no student will be penalized for absence because of religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and instructor involved, they should consult the appropriate Department Chair and, if necessary, the student's Dean.

It is the responsibility of such students to inform themselves concerning the work done in classes from which they are absent and to take appropriate action.

VI. Academic Integrity

In the Faculty of Engineering, we encourage students to create a culture of honesty, trust, fairness, respect, responsibility, and courage, befitting the professional degree you are pursuing.

Please visit [Academic Integrity Western Engineering](#) for more information

VII. Academic Offences

Plagiarism means using another's work without giving credit. The university has rules against plagiarism and other scholastic offences. Western Engineering has a zero-tolerance policy on plagiarism. The minimum penalty is zero on the course work and a repeat offence will earn you zero on the course. A third offence may lead to expulsion from the university.

[Scholastic Discipline for Undergraduate Students & Cheating, Plagiarism and Unauthorized Collaboration: What Students Need to Know](#)

Students must write their reports, essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. University policy states that cheating, including plagiarism, is a scholastic offence. The commission of a scholastic offence is attended by academic penalties, which might include expulsion from the program. If you are caught cheating, there will be no second warning.

All required papers may be subject to submission for textual similarity review to commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted will be included as source documents on the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between the University of Western Ontario and Turnitin.com (<http://www.turnitin.com>). Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, in the relevant section of the Academic Handbook:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

VIII. Faculty of Engineering AI Policy

The use of generative Artificial intelligence (GenAI) tools won't be discouraged in the Faculty of Engineering. As we pride ourselves on building the future we can't hide from the use of GenAI tools to contribute to the understanding of the course materials. However, the use of GenAI tools in any assignment or contribution during the course will have to be disclosed, as a resource.

GenAI tools use won't be permitted in any type of examination or other assessments where the faculty have prohibited their use. If use of GenAI tools is detected by the instructor in these instances, academic offences penalties might be imposed against the student.

IX. Use of English Policy

In accordance with Senate and Faculty Policy, students may be penalized up to 10% of the marks on all assignments, tests, and examinations for improper use of English. Additionally, poorly written work except for the final examination may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and/or late submission.

X. Accessibility

Western is committed to achieving barrier free accessibility for persons with disabilities studying, visiting and working at Western. As part of this commitment, there are a variety of services, groups and committees on campus devoted to promoting accessibility and to ensuring that individuals have equitable access to services and facilities. To help provide the best experience to all members of the campus community, please visit the [Accessibility Western University](#) for information on accessibility-related resources available at Western.

Students with disabilities may arrange for academic accommodation at Western. For a more detailed explanation, please visit [Academic Support & Engagement -Academic Accommodation](#).

XI. Inclusivity, Diversity, and Respect

The Faculty of Engineering at Western University is committed to creating equitable and inclusive learning environments that value diverse perspectives and experiences. We recognize that university courses often marginalize students based on social identity characteristics such as, but not limited to, Indigeneity, race, ethnicity, nationality, ability, gender identity, gender expression, sexuality, age, language, religion, and socioeconomic status. Understanding this, we strive to facilitate equitable experiences and inclusion within the classroom by respecting and integrating multiple ways of knowing, being, and doing. Please visit the [Office of Equity, Diversity and Inclusion](#).

XII. Health and Well-Being

- [Health & Wellness Services – Students](#) - Offers appointment-based medical clinic for all registered part-time and full-time students.
- [Mental Health Support](#) - Provides professional and confidential services, free of charge, to students needing assistance to meet their personal, social and academic goals. Services include consultation, referral, groups and workshops, as well as brief, change-oriented psychotherapy.
- [Crisis Support](#) - For immediate assistance, please visit Thames Hall Room 2170 or call 519-661-3030. The crisis clinic operates between 11:00 am - 4:30 pm. For after-hours crisis support, click [here](#).
- [Gender-Based Violence and Survivor Support](#) - Western [is committed to reducing incidents of gender-based and sexual violence](#) and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced gender-based or sexual violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts, [here](#). To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Important Contacts

[Engineering Undergraduate Services](#)

[Electrical and Computer Engineering](#)

[Office of the Registrar/Student Central](#)

Important Links

- [WESTERN ACADEMIC CALENDAR](#)
- [ACADEMIC RIGHTS AND RESPONSIBILITIES](#)
- [ENGINEERING PROGRESSION REQUIREMENTS AND ACADEMIC REGULATIONS](#)
- [UNIVERSITY STUDENTS' COUNCIL \(USC\) - SERVICES](#)
- [IMPORTANT DATES AND DEADLINES](#)
- [ACADEMIC CONSIDERATION FOR MEDICAL ILLNESS - UNDERGRADUATE STUDENTS](#)
- [ACCOMMODATIONS FOR RELIGIOUS HOLIDAYS](#)
- [SCHEDULING OF ASSIGNMENTS, TESTS, AND EXAMINATIONS](#)
- [STUDENT FORMS](#)
- [OFFICE OF THE REGISTRAR](#)
- [RETENTION OF ELECTRONIC VERSION OF COURSE OUTLINES \(SYLLABI\)](#)
- [ACADEMIC APPEALS](#)
- [STUDENT ABSENCE PORTAL](#)