

Western University
Faculty of Engineering
Department of Civil and Environmental Engineering

CEE 9538 – Introduction to Wood Design (With 4438B)

COURSE OUTLINE 2025-2026

DESCRIPTION

This course introduces structural wood design using the CSA O86 standard. The topics cover common load conditions, such as tension, compression, bending, and shear for sawn lumber, glulam, and cross-laminated timber (CLT). The course also discusses load paths and structural systems, such as floor systems, stud walls, diaphragms, and shear walls. Additionally, the design of bolted and nailed connections is introduced.

ENROLLMENT RESTRICTIONS

Enrollment in this course is restricted to undergraduate and graduate students in Civil and Environmental Engineering programs.

INSTRUCTOR CONTACT INFORMATION

[REDACTED]
[REDACTED]
[REDACTED]

Teaching Assistant: [REDACTED]
[REDACTED]

PREREQUISITES

Structural Mechanics and Structural Analysis

COURSE FORMAT

In-person

TENTATIVE TOPICS AND SCHEDULE

Week #	Description	Learning Activities
1	Introduction	Lecture
2-3	Sawn Lumber	Lecture, Reading Assignment
4	Structural Panels, Structural Systems	Lecture, Reading Assignment
5-6	Glulam	Lecture, Reading Assignment
7	** Midterm Exam	Exam
8-9	Lateral-Load-Resisting Systems	Lecture, Reading Assignment
10-11	Cross Laminated Timber (CLT)	Lecture, Reading Assignment
12	Connections	Lecture, Reading Assignment

*Reading Week (No Class: February 14, 2026 to February 22, 2026)

** Midterm exam [REDACTED]

SPECIFIC LEARNING OUTCOMES

Degree Level Expectation	Weight	Assessment Tools	Outcomes
Depth and breadth of knowledge	30%	<ul style="list-style-type: none">• Assignments• Exams	<ul style="list-style-type: none">• Understanding of design concepts and theories• Awareness of important current problems• Understanding of analytical and/or empirical methodologies to solve related problems
Application of knowledge	50%	<ul style="list-style-type: none">• Assignments• Exams	<ul style="list-style-type: none">• Ability to apply knowledge in a rational way to analyze a particular problem• Ability to use coherent approach to design a particular engineering system using existing design tools
Communication skills	20%	<ul style="list-style-type: none">• Presentations	<ul style="list-style-type: none">• Ability to communicate (oral and/or written) ideas, issues, results and conclusions clearly and effectively

ASSESSMENTS

Assessment Type	Weight
Assignments*	30%
Midterm Exam	30%
Final Exam	40%

* Graduate students will work on weekly reading assignments in addition to homework assignments. For graduate students, these reading assignments and their in-class presentations account for 15% of the total 30% assignment weight.

Examination:

Formula sheets (two A4 sheets) and the wood design manual are allowed to be used.

Assignments:

- Online submission on OWL Brightspace is needed. The written work should be submitted in one PDF.
- Late submission will be penalized 10% per day late. Homework submitted after the solutions have been provided will not be accepted. Extensions are to be discussed with the course instructor, not the teaching assistants.
- Marks (up to 20%) may be deducted for poor presentation and writing – your submission must be neat and well-organized.
- For the assignments, individual submission is required unless stated otherwise.
- All required course submissions will be assessed on technical/academic merit and the quality of communication skills exhibited.
- The instructor (and the course TA) will aim to provide grades and feedback on homework within 2 weeks of submission.

Activities in which collaboration is permitted:

- Reading Assignments

Activities in which students must work alone (collaboration is not permitted):

- Homework Assignments
- Midterm and Final Exams

TEXTBOOK AND OTHER LEARNING MATERIALS

Prepared class notes will be available on OWL.

Required Reference:

- Wood Design Manual 2020 – Canadian Wood Council CWC 2020 and Canadian Standards Association, Mississauga, ON, Canada.
Note: Regular Price: \$275. Promo codes for discounted purchases will be posted individually to each student on OWL. Students are welcome to purchase second-hand. Earlier editions are not sufficient.

Optional Reference:

- Introduction to Wood Design 2018 – Canadian Wood Council CWC 2018 and Canadian Standards Association, Mississauga, ON, Canada
Price: \$65 (Students are welcome to purchase second-hand. Earlier editions are not sufficient.)

STATEMENT ON THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE (AI)

The use of AI in the preparation of the project and assignments must be acknowledged in the submission. Please refer to the published [Provisional Guidance for the Use of Generative AI in Graduate Studies](#) at Western University.

CHEATING, PLAGIARISM/ACADEMIC OFFENCES

Academic integrity is an essential component of learning activities. Students must have a clear understanding of the course activities in which they are expected to work alone (and what working alone implies) and the activities in which they can collaborate or seek help; see information above and ask instructor for clarification if needed. Any unauthorized forms of help-seeking or collaboration will be considered an academic offense.

University policy states that cheating is an academic offence. If you are caught cheating, there will be no second warning. Students must write their essays and assignments in their own words. Whenever students take an idea or a passage of text from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_offences.pdf

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in 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>).

CONDUCT

Students are expected to follow proper etiquette to maintain an appropriate and respectful academic environment. Any student who, in the opinion of the instructor, is not appropriately participating in course activities and/or is not following the rules and responsibilities associated with the course activities, will be reported to the Associate Dean (Graduate) (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Associate Dean (Graduate), the student could be debarred from completing the assessment activities in the course as appropriate.

HEALTH/WELLNESS SERVICES

As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several health and wellness related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. Information regarding health- and wellness-related services available to students may be found at <https://www.uwo.ca/health/>.

Students seeking help regarding mental health concerns are advised to speak to someone they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), or other relevant administrators in their unit. Faculty of Engineering has a Student Wellness Counsellor. Information on how to schedule an appointment with the counsellor is available at: <https://www.eng.uwo.ca/undergraduate/academic-support-and-accommodations/Student-Wellness-Counselling.html>.

Students who are in emotional/mental distress should refer to Mental Health Support at <https://www.uwo.ca/health/psych/index.html> for a complete list of options about how to obtain help.

STATEMENT ON GENDER-BASED AND SEXUAL VIOLENCE

Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website: <https://www.uwo.ca/health/gbsv/support/get-help.html>. To connect with a case manager or set up an appointment, please contact support@uwo.ca.

SICKNESS

Students should immediately consult with the Instructor (for a particular course) or Associate Chair (Graduate) (for a range of courses) if they have problems that could affect their performance. The student should seek advice from the Instructor or Associate Chair (Graduate) regarding how best to deal with the problem. Failure to notify the Instructor or the Associate Chair (Graduate) immediately (or as soon as possible thereafter) will have a negative effect on any appeal. Obtaining appropriate documentation (e.g., a note from the doctor) is valuable when asking for accommodation due to illness.

Students who are not able to meet certain academic responsibilities due to medical, compassionate or other legitimate reason(s), could request for academic consideration. The Graduate Academic Accommodation Policy and Procedure details are available at: <https://www.eng.uwo.ca/graduate/current-students/academic-support-and-accommodations/index.html>

ACCESSIBLE EDUCATION (AE)

Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program. Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are strongly encouraged to register with Accessible Education (AE), a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both AE and their graduate programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic accommodations to program requirements are arranged. These accommodations may include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction.