



CIVE 4302 –Reinforced and Prestressed Concrete



Instructor: Ted Sherwood Ph.D. P.Eng.

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(use "CIVE 4302" in subject header)

Office: ME 3366

Office Hours: tbd

TAs: Contact info will be posted on Brightspace.

Lectures: Mon/Wed 4:05am-5:25am [REDACTED]
No lectures during the week of Oct 26
Last lecture Friday, Dec 11

PA/Lab: Alternate Fridays 8:35 – 11:25pm [REDACTED]
(Sept 25, Oct 9, Oct 23, Nov 13, Nov 27)

Topics Covered: (*Topics may be added, modified or removed as the term progresses*)

1.	Review	-review of reinforced concrete concepts from CIVE 3206: material properties, flexure, shear, axial loads
2.	Shear and Torsion	-CSA A23.3 general method of shear design -behaviour and design of concrete subjected to torsion
3.	Two-Way Slabs	-analysis: equilibrium and yield line methods -design: direct design method and equivalent frame method -shear in two-way slabs
4.	Slender Columns	-short and slender columns, stability, pin-ended columns -columns in frames –behaviour and design (sway and non-sway)
5.	Prestressed Concrete	-concepts, materials, pre- and post-tensioning technologies -flexure and shear design, allowable stresses -deflections

Attendance is mandatory as the method of teaching is exclusively chalk-and-talk. There is no textbook (the handbook is not a textbook) and lecture notes are not available. Assignments and handouts to supplement lectures are only available in class on the day they are handed out. Supplemental course content may be posted on Brightspace. Check email regularly. Missed lecture material must be obtained from a classmate (do this immediately after missing a class).

*During lectures: all electronics (e.g. phones, tablets, laptops) are to be turned off. Open laptops are not permitted. **Lectures may not be recorded. Absolutely no photos may be taken.***

Required Text: *Concrete Design Handbook, 5th Edition, Cement Association of Canada*

Purchased online -info on Brightspace. Approx cost is \$317 plus shipping and tax (sadly, not a typo). Required during midterm and final exam. Only physical copies may be used (electronic copies, self-printed copies or photocopies are not permitted). Older editions should be avoided.

Mark Breakdown:

Weekly Assignments	35%	Approx 8-10 in total, lowest grade dropped
Midterm	15%	Date: November 2 (can only be written on this day)
Final Exam	50%	Scheduled by Carleton Exam Services. Date tbd.

To pass the course: (1) a minimum overall grade of 50% must be achieved, (2) a minimum grade of 40 out of 100 must be obtained on the final exam, (3) the average grade of all assignments (including the lowest) must exceed 40 out of 100 and (4) at least five assignments must be

submitted on time. There is no accommodation for missed assignments (dropping the lowest grade addresses this). There is no accommodation for personal travel. The weight of the final exam will not exceed 62% of the overall mark if the weight of any term work is added to it.

Assignments must be completed entirely with lead pencil on engineering computation paper and submitted in-person to the drop box before the deadline. They must be neat, clear and of professional quality. Use one staple, top left corner. All drawings are to be done by hand, follow standard engineering technique and drawn to scale using appropriate drafting instruments. Concerns with grades must be raised with the grader within seven days of the work being made available for pickup, after which the grade is final.

Students bear sole responsibility for meeting assignment submission requirements. Like contract bidding laws that govern our profession, deadlines are strictly enforced (to the nearest second). Assignments not handed in on time immediately receive a 50% penalty, with additional penalties of 10% per day, no exception. The US Naval Observatory's Master Clock (<http://www.time.gov>) is the official CIVE 4302 time. Plan for inevitable transportation or weather delays. Emailed assignments are not accepted.

You are strongly encouraged to work in groups (the course is designed with this intention) but all submitted work must be entirely your own. Academic integrity is born out of personal character. Academic dishonesty is lazy, immoral and destructive personally and professionally. It is discouraging and deeply unfair to the overwhelming majority of students who pursue their studies honestly and honourably. It is also easy to detect. Any work showing evidence of copying will be forwarded to the Associate Dean for sanction. This can be an emotionally difficult process. Read Carleton's Policy on Academic Integrity: <https://carleton.ca/registrar/academic-integrity/>

Other Items:

Please: no food in class (drinks are ok), no colognes, no perfumes. The course calendar description is here: <https://calendar.carleton.ca/search/?search=cive+4302>

CIVE 4302 is a politics and world events-free zone. We are here to learn about the amazing materials that are reinforced and prestressed concrete and nothing more. Please treat the course as a brief respite from the world's problems and allow other students to view it the same way.

I ask that everyone work together to create an environment that is inclusive of diversity. Students requiring special arrangements to meet academic obligations should email me in the first two weeks of class, or as soon as the need is identified (for complete details on accommodations see <https://students.carleton.ca/course-outline>). While I maintain the same very high expectations of all students, if you require accommodation I am happy to problem-solve with you in a way that makes you feel supported and understood. Students with disabilities requiring academic accommodation must register with the Paul Menton Centre for Students with Disabilities (PMC) for an evaluation of their needs. Registered PMC students must contact the PMC every term to ensure that your instructor receives your Letter of Accommodation on time.