Course Outline

Architectural Technology II - CIVE 2005
Winter 2022

INSTRUCTOR

Jacobus (Jack) Vandenberg M.Eng., P.Eng.
Department of Civil and Environmental Engineering

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LECTURES

Attendance to lectures is important to the success of students. Material discussed in the lectures is designed to promote further reading and study. Lectures introduce concepts and terminology related to structural analysis and design that can be difficult to understand. Each lecture builds on the material taught in the lecture before, therefore it is critical students keep up with the material.

It is expected students maintain a professional and respectful environment in class, office hours and tutorials so that all students have an opportunity for success.

TUTORIALS

Section A1: Wednesdays 8:30 – 11:30 am
Section A2: Thursdays 2:30 – 5:30 pm

Teaching Assistants: To be Announced

One of the teaching assistants will be present during the tutorial to answer questions relative to the assignments and to provide students with feedback on their marked assignments and tests. Assignments will be given during the Thursday lectures and are due the following Thursday at 9:00 am, ie. beginning of class. Late submissions will be deducted at 20% per day. Assignments will be returned during the following lecture and solutions will be posted on Brightspace after the papers are returned.

EVALUATION

Assigned Problems: 10 Assignments will be provided during the term.	20 %
Tests: 5 formal tests will be given during the tutorial sessions	20 %
Final Exam: Scheduled by the University. 3 hours.	60 %
Total	100 %

Note: The final exam will not be returned to the students

ABSENSES

Missing any assignment or test will automatically result in a mark of zero unless acceptable documentation is presented to justify your absence within three days from the date of the assignment or test. In case of illness, acceptable documentation is required. You must obtain approval prior from the Instructor if you cannot write a test at the

scheduled time (except in cases of unexpected emergencies). If unsure of what would be proper documentation for the given circumstances, please consult with your instructor. There are no make-up assignments or tests. If you miss an assignment or test and present acceptable documentation, then the weight of the missed component will be added to that of the final examination. If you miss a lecture, it's your responsibility to find out what you have missed and get caught-up with the material.

REQUIRED TEXT
None

SUGGESTED READINGS
Statics and Strength of Materials for Architecture and Building Construction – 4'th Ed., B. Onouye and K. Kane, Prentice-Hall.
Structures, or Why Things Don't Fall Down. J.E. Gordon. Pelican Books.
Elementary Structures for Architects and Builders, 3 Ed, R.E. Shaeffer. Prentice Hall. 1998
Fundamentals of Structural Analysis, 3 Ed., Kenneth M. Leet, McGraw Hill.

LECTURE OUTLINE

The following outline is provided as a guideline and may change through the term. The Section refers to the first book listed under suggested reading.

Week	Date	Topic	Section
1	January 13	Introduction Basic Engineering Concepts: Forces, Components, Equilibrium	Chapter 1/2
2	January 20	Introduction to Statics Loading Conditions Calculations of Reactions	Chapter 2/3
3	January 27	Centre of Gravity Tension and Compression Members Introduction to Trusses	Chapter 2/3/5
4	February 3	Trusses	Chapter 3
5	February 10	Pinned Frames	Chapter 3
6	February 17	Introduction to Shear and Bending Moment Diagrams	Chapter 6
7	February 24	Winter Break	
8	March 3	Shear and Bending Moment Diagrams – Part 2	Chapter 6
9	March 10	Strength of Materials Stress and Strain	Chapter 4
10	March 17	Bending Stress and Deflection in Beams	Chapter 7
11	March 24	Parallel Axis Theorem Bending Stresses in Beams	Chapter 5
12	March 31	Shear Stresses in Beams	Chapter 7
13	April 7	Review	

DATES FOR TESTS

Tests will be 1 hour long and will take place during the last hour of the tutorial period.

The tentative dates for the tests are: (Section A1 / Section A2):

Test 1 – January 26/27
Test 2 – February 9/10
Test 3 – March 2/3
Test 4 – March 16/17
Test 5 – March 30/31

You must consult Brightspace regularly to check your grades. If there are any issues with the marks for the assignments or tests, they must be resolved with the TA within one week of the posting of the marks on Brightspace.

ACADEMIC ACCOMMODATION

You may need special arrangements to meet your academic obligations during the term because of disability, pregnancy or religious obligations. Please review the course outline promptly and write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

It takes time to review and consider each request individually, and to arrange for accommodations where appropriate. Please make sure you respect these timelines particularly for in-class tests, mid-terms and final exams, as well as any change in due dates for papers.

You can visit the Equity Service website to view the policies and to obtain more detailed information on academic accommodation at http://carleton.ca/equity/accommodation

ACCESSIBILITY

Students with disabilities requiring academic accommodation in this course must register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Documented disabilities could include but are not limited to mobility/physical impairments, specific Learning Disabilities (LD), psychiatric/psychological disabilities, sensory disabilities, Attention Deficit Hyperactivity Disorder (ADHD), and chronic medical conditions. Registered PMC students are required to contact the PMC, 613-520-6608, every term to ensure that I receive your Letter of Accommodation, no later than two weeks before the first assignment is due or the first in-class test/midterm requiring accommodations. If you only require accommodations for your formally scheduled exam(s) in this course, please submit your request for accommodations to PMC by the deadlines published on the PMC website:
http://www2.carleton.ca/pmc/new-and-current-students/dates-and-deadlines/

GRADING

For the grade in the "A" range, the instructor will have judged the student to have satisfied the stated objectives of the course in an outstanding to excellent manner; for the "B" range, in an above average manner; for the "C" range, in an average manner with C- being the lowest acceptable grade in the BAS - Design Core courses; for the "D" range, in the lowest acceptable manner in non-Core courses, and for "F", not to have satisfied the stated objectives of the course. Grades will be assigned as A+ (90-100%), A (85-89%), A- (80-84%), B+ (77-79%), B (73-76%), B- (70-72%), C+ (67-69%), C (63-66%), C- (60-62%), D+ (57-59%), D (53-56%), D- (50-52%), F (0-49%). A grade of C- or better in each course of the BAS - Design Core is required for a student to remain in *Good Standing*. (Please refer to the Undergraduate Calendar http://www.carleton.ca/calendars/ugrad/1011/regulations/acadregsuniv2.html#2.3 for regulations concerning grades and other program requirement information and http://www.carleton.ca/calendars/ugrad/1011/programs/architecturalstudies.html for regulations concerning grades and other program requirement information specific to the Architecture program.

Each grade will be based upon a comparison (1) with other students in the course and/or (2) with students who have previously taken the course and/or (3) with the instructor's expectations relative to the stated objectives of the course, based on his/her experience and expertise.

Student Conduct

Please refer to http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/ [item 15.0] for specific information regarding Student Conduct and Academic Integrity standards.

ACCREDITATION AND PROFESSIONAL EXPERIENCE

In Canada, all provincial associations recommend a degree from an accredited professional degree program as a prerequisite for licensure. The Canadian Architectural Certification Board (CACB), which is the sole agency authorized to accredit Canadian professional degree programs in architecture, recognizes two types of accredited degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.

Masters degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Student Performance Criteria

For the purposes of accreditation, graduating students must demonstrate *understanding* or *ability* in the areas listed below, according to an established sequence.

The 31 STC are as follows:

A1 Critical Thinking Skills.
A2 Research Skills.
A3 Graphic Skills.
A4 Verbal and Writing Skills
A5 Collaborative Skills
A6 Human Behavior
A7 Cultural Diversity
A8 History and Theory
A9 Precedents.
B1 Design Skills
B2 Program Preparation
B3 Site Design
B4 Sustainable Design
B5 Accessibility.
B6 Life Safety Sys, Bldg Codes & Stds
B7 Structural Systems
B8 Environmental Systems
B9 Building Envelopes.
B10 Building Service Systems.
B11 Building Materials and Assemblies.
B12 Building Economics and Cost Control
C1 Detailed Design Development
C2 Building Systems Integration
C3 Technical Documentation
C4 Comprehensive Design.
D1 Leadership and Advocacy
D2 Ethics and Professional Judgment

Specifically, this course meets the following criteria: A1, A3, B6, B7

RETENTION OF WORK
http://calendar.carleton.ca/undergrad/undergradprograms/architecturalstudies/
Keeping a good portfolio is a most important part of architectural education. A portfolio represents a record of the student's progress and design experience over the years. It is an indispensable requirement for any job application in the future. A portfolio is started in first year and continues to expand until graduation. The School, therefore, requires that each student produce reductions (normally 8 ½ x 11 inch reproductions, colour or black and white, slides, and/or digital format CD) of their work at the end of each term. One copy of the work should be put in the student's portfolio and the other turned in to the instructor for retention in the School's archives. (This facilitates retrospective exhibitions of work, accreditation, publications and any future references for pedagogic purposes.) Original work is the property of the students, but the School retains the right to keep work of merit for up to two years after the date of submission. The School will make every effort to preserve the work in good condition, and will give authorship credit and take care of its proper use.

Health and Safety Regulations for the School of Architecture
• No Smoking • No Flammable or Combustible Solvents, Paints, Gases or other Products • No Aerosol or Pressurized Containers • No Power Tools • No Soldering • No Bicycles • No Open Flames • No Toxic Chemicals • No Vandalism (as defined by the Municipality of Ottawa) • Avoid Creating Tripping Hazards • Avoid Creating Fire Hazards •

Keep Aisles, Walkways, Corridors, Doorways, Stairwells and Fire Hose Cabinets clear at all times • Avoid Working Alone After Hours • Avoid Creating Excessive Dust and Noise

In Case of Emergency, Dial Extension 4444 from any Studio phone.

First Aid is available in the Main Office (Room 202) or Workshop (Room 220) between the hours of 8:30 a.m. and 4:30 p.m. Monday to Friday. First Aid Kits are available throughout the School.