
CIVE 4400 Construction / Project Management Fall 2024

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Course Dates:

Lectures: Sep. 4 – Dec. 6 TUE/THU 8:35 – 9:55
Laboratory: Sep. 4 – Dec. 6 THU 18:05 – 20:55

Final examination Dec. XX, 2024 TIME Location TBD

A missed final examination will result in a grade of zero unless a medical excuse is provided to the Student Services. In such case, a deferred final examination may be arranged.

Course Description: Systems approach to project planning and control. Analysis of alternative network planning methods: Critical Path Method (CPM), precedence and Program Evaluation and Review Technique (PERT); planning procedure; estimating; physical, economic and financial feasibility; productivity and power requirements; equipment; case studies.

This course focuses on project and construction management techniques and problems specific to civil engineering, specifically the building, structural and transportation specializations.

By the end of the course, successful students will be able to:

- Differentiate between the different construction project participants and identify their different but interlinked roles.
- Break down the various management steps of a construction project from conception to project delivery.
- Develop activity logic networks, identify the critical path, determine the impact of delays on project delivery.
- Produce estimates of quantities and costs.
- Calculate productivity rates and equipment power; evaluate equipment needs and select the correct equipment.
- Budget, schedule and change controls.

Grading

Assignments: 20% (4 assignments, 5% each)
Midterm: 30%
Final Examination: 50%

A minimum grade of 50% in the final examination is required to pass this class.

Appeals

All appeals for marks assigned in this course must be made within 10 days of the posting date.

Extensions and Rewrites

In the interest of fairness for all students, requests for rewrites will only be granted for situations that are out of a student's control.

Students who claim illness, injury, or other extraordinary circumstances beyond their control as a reason for missed term work are held responsible for immediately informing the instructor concerned and for alternate arrangements with the instructor and in all cases, this must occur no later than three (3) days after the term work was due. The alternate arrangement must be made before the last day of classes in the term as published in the academic schedule. Consult Section 4.4 of the University Calendar.

Students missing deadlines or exams due to an illness must submit a Self-declaration for Academic Considerations Form to the instructor within three (3) days. Accommodations cannot be granted more than 72 hours after the deadlines. For final exams, students must submit the self-declaration form in addition to a deferral application (carleton.ca/registrar/deferral) and submit both forms to the Registrar's Office no later than 3 days after the scheduled examination or take-home due date. If an absence from an evaluation is deemed justified:

- 1) Assignments: the weight of a justified missed assignment will be transferred onto the remaining assignments.
- 2) Midterm and final examinations: the student will have to consult the academic secretariat of the faculty for the procedure to follow.

Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensure that a degree from Carleton University is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. Carleton University's Policy on Academic Integrity (<http://www.carleton.ca/studentaffairs/academic-integrity>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. It is your responsibility to be familiar with these policies. Any students who do not act with academic integrity will face severe consequences including immediate referral to Associate Dean of Student Affairs.

Self-plagiarism

All work submitted in this course must be new work by the student and not submitted anywhere else for credit. The use of AI tools is prohibited.

Required Text

K. Knutson, CJ Schexnayder, CM Fiori, RE Mayo. Construction Management Fundamentals. 2nd Ed., McGraw Hill, 2004, ISBN 978-0-07-340104-01.

Recommended auxiliary reading:

- Construction planning and scheduling, by *Jimmie W. Hinze*
- Construction Project Management, by *Frederick Gould and Nancy Joyce*
- Construction Project Administration, by *Edward R. Fisk and Wayne Reynolds*

Assignment Submission

All assignments and other submissions should be submitted as a hard copy unless they are set up on Brightspace – then the online submission must be complete by the due date. While you may submit your assignments after the due date, a grade penalty will be applied as follows: -25% (first 24 hours after the deadline) and a grade of zero afterward.

Solutions

Assignment solutions will be posted on Brightspace seven days after the assignment due dates.

Accommodation

Students with diverse learning styles and needs are welcome in this course.

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: 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. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

Religious obligation: 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. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally scheduled exam (if applicable).

TIMETABLE

Lecture Date:	Lecture Topic:	Tutorial:	Assignments are due at 4pm:
Sep. 5	Class overview & introduction		
Sep. 10	Construction Management Functions Guest Lecturer: Stelios Hiotakis		
Sep. 12	Scheduling:	Tutorial 1	
Sep. 17	Bar charts		
Sep. 19	Critical Path Method	Tutorial 2	
Sep. 24	Activity Logic Network Precedence Logic Diagrams Calendar scheduling Velocity Diagrams Linear scheduling		
Sep. 26	Estimates 1: Basic principles; Labour Productivity; Equipment and Plant; Materials and Supplies; Subcontracted work; Overhead costs	Tutorial 3	Assignment 1 due
Oct. 1	Estimates 2:		
Oct. 3	mass diagrams; earthworks quantities; concrete works	Tutorial 4	
Oct. 8	Estimates 3: buildings		
Oct. 10	Construction Practice I		Assignment 2 due
Oct. 15			
Oct. 17	MIDTERM		
Oct. 21-25	FALL BREAK – no classes		
Oct. 31	Construction Accounting:		
Nov. 2	Income statement; Balance sheet;		
Nov. 5	Construction contract revenue; Contract status report; Financial statement analysis		

Nov. 7	Construction Practice 1: required, available and usable power; total, rolling and grade resistance; performance charts		
Nov. 12	Contract Administration I Guest Lecturer: Stelios Hiotakis	Tutorial 5	
Nov. 14	Contract Administration II Guest Lecturer: Stelios Hiotakis		
Nov. 19	Construction Practice I	Tutorial 6	
Nov. 21	Construction Practice II		Assignment 3 due
Nov. 26		Tutorial 7	
Nov. 28			
Dec. 3	Risk Management Guest Lecturer Stelios Hiotakis, P.Eng., MAsc, PMP, LEEDAP	Tutorial 8	
Dec. 5	Review of class material: How to use learned concepts to control budget, cost, schedule and change.		Assignment 4 due