



OCICE GRADUATE STUDENT HANDBOOK

CARLETON UNIVERSITY

Updated August 2024

Dear Civil Engineering Graduate Students,

Welcome to the Department of Civil and Environmental Engineering and the Ottawa-Carleton Institute for Civil Engineering (OCICE)! You are joining one of the largest and most diverse civil engineering programs in Canada, with about 60 faculty members across two universities, over 400 graduate students, and over 50 courses offered each year.

This handbook is meant as an additional resource to help guide you through your program in Civil Engineering at Carleton. It is not meant to be a comprehensive list of all the rules, regulations, and guidelines you need to know but, instead, it provides you with links to those rules, regulations and guidelines related to your program as well as additional resources that are available to support you during your journey. You should review your academic audit regularly during your program to ensure that you are on track to meeting your program requirements by the time you graduate.

If you have questions about graduate school, please do not hesitate to reach out to your supervisor or program advisor, the Graduate Administrator, or the Associate Chair of Graduate Studies for Civil Engineering. All communication with the department and university must be through your Carleton email address. Be sure to check this email address regularly.

This handbook is a living document that is updated regularly. We welcome your feedback on the handbook. Let us know what is useful or if there are topics that you think may be missing or helpful to include in future editions. You may find the “Additional Resources” section of the handbook especially useful. Carleton has an excellent range of resources to support you in your program. Your mental health and wellness are important to us, so do not hesitate to reach out.

I wish you every success in the coming academic year and your program in general. Your success is our success. Along with all my colleagues, we are looking forward to working together with you to learn, advance science and engineering, develop interpersonal skills, and make new friends and colleagues that will support and sustain us during our academic journey and in our careers to follow. The world needs passionate civil engineers to maintain and design the next generation of our society’s built infrastructure. We are so pleased that you have decided to join our Department and the Institute, along with our many alumni, to be part of that exciting and important work.

Kind regards,

Jeff Erochko, PhD, PEng

Associate Director, OCICE and Associate Chair of Graduate Studies for Civil Engineering

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MEET THE TEAM

OTTAWA-CARLETON INSTITUTE FOR CIVIL ENGINEERING (OCICE)

Director: Prof. Ahmad Jrade, Civil Engineering, University of Ottawa

Associate Director: Prof. Jeffrey Erochko, Civil and Environmental Engineering, Carleton University

DEPARTMENTAL ADMINISTRATION

Main office: 3432 Mackenzie Building (3432 ME)

Departmental Administrator:

Payal Chadha, CEEGradInfo@cunet.carleton.ca , 3452 ME

Graduate Administrator:

TBD (acting for Reynosa Sarmiento)

CEEGradInfo@cunet.carleton.ca , 3452 ME

Associate Chair of Graduate Studies for Civil Engineering:

Prof. Jeffrey Erochko, Jeffrey.Erochko@carleton.ca , 3368 ME

Department website for graduate students:

<http://carleton.ca/cee/current-students/current-graduate-students/>

LABORATORY STAFF

Laboratory Supervisor: Muhammad Salam, muhammad.salam@carleton.ca , 2032 MC

Civil Engineering Technologists:

Pierre Trudel, pierre.trudel@carleton.ca , 2032 MC

Jason Arnott, jason.arnott@carleton.ca , 2032 MC

Evan Heyes, evanheyes@cunet.carleton.ca , 2032 MC

Environmental Engineering Technologist:

Sonja Koster, sonjakoster@cunet.carleton.ca , 2432 ME

Laboratory Technician for Architectural Conservation and Sustainability Engineering:

TBD, 2032 MC

Network and Systems Specialist:

Chris Kirupairajah, ChrisKirupairajah@cunet.carleton.ca , 2032 MC

WELLNESS AND MENTAL HEALTH

Wellness and mental health supports are available for you when you need them. A summary of the services that are available to you may be found at:

<https://carleton.ca/cee/2021/11/student-support-and-wellness/>

<https://carleton.ca/wellness/>

Also, do not hesitate to reach out to your supervisor, your advisor, or the graduate chair. We are here to support you.

UNIVERSITY REQUIREMENTS

As a Civil Engineering graduate student, you need to be aware of the rules and regulations of the University. This handbook will highlight certain rules and guidelines but does not re-iterate ALL the rules and guidelines of the University. Students are responsible to know the rules and

guidelines; if there is any disagreement between the online calendar and this handbook, the calendar is the ultimate authority. The general regulations of the Faculty of Graduate and Postdoctoral Affairs (FGPA) can be found here:

<https://calendar.carleton.ca/grad/gradregulations/>

ACADEMIC INTEGRITY AND CHEATING

Violating the university's academic integrity policy can result in severe penalties, including failing courses, suspension, or expulsion from the university! It is your responsibility to read, understand and follow the policy.

This includes not just cheating but also:

- plagiarism
- inappropriate collaboration
- misrepresentation of assignments
- falsification of data or documentation
- disruption of activities or exams
- improper dissemination of confidential information
- assisting other people in violating academic integrity
- inappropriate referencing of other's work

Carleton's academic integrity policy may be found at <https://carleton.ca/registrar/academic-integrity/> and <https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf>

Plagiarism includes not just copying, but also using other's ideas without appropriate acknowledgement. Work does not have to be copied word-for-word to be considered plagiarism. It is your responsibility to ensure that you properly reference and credit the work of

others in your assignments and research. See <https://library.carleton.ca/guides/help/avoid-plagiarism>

Department of Civil and Environmental Engineering AI Policy

This policy describes the conditions for graduate students to use generative artificial intelligence or large language models (collectively described as AI tools) for generating content (e.g., text and figures) in their graduate research work. The fundamental values underlying this policy are transparency and academic integrity.

1. **By default, the use of AI tools is not permitted unless explicitly permitted by the thesis supervisor(s) or project supervisor(s).**
2. Students who plan to use generative AI tools must get approval in writing from their supervisor **before** the tools are used. This approval should state explicitly how the AI tools will be permitted to be used (e.g., proof-reading, summarization, outlining, research, drafting, image generation, coding, etc.).
3. The use of AI tools without approval may be considered an academic offense.
4. If the use of AI tools is permitted as described above, the use of AI tools must be disclosed in the thesis document in the preface section (e.g., see integrated thesis policy). This disclosure must describe how AI tools were used and which sections of the thesis document it was used for.

In all cases, the graduate student is completely responsible for all submitted work and must be able to defend that work. The student is responsible for ensuring that all material is correct and not plagiarized. Refer to Carleton's Academic Integrity Policy for more information:

<https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf>

DEPARTMENTAL REQUIREMENTS

The departmental requirements and guidelines are provided in this handbook. Additional information can be found on the departmental website for graduate students:

<https://carleton.ca/cee/current-graduate-students/>

The department forms can be found here (for course approvals, extensions, program changes, etc.):

<https://carleton.ca/cee/graduate-forms/>

The department hosts a graduate student orientation session each fall term and the slides for that presentation can be found here:

<https://carleton.ca/cee/graduate-students-orientation/>

PROGRAM REQUIREMENTS

The Carleton Calendar states all the requirements for each program.

<https://calendar.carleton.ca/grad/gradprograms/civilengineering/>

The programs include:

- [M.A.Sc. Civil Engineering](#)
- [M.Eng. Civil Engineering](#)
- [M.A.Sc. Civil Engineering with Collaborative Specialization in Climate Change](#)
- [M.Eng. Civil Engineering with Collaborative Specialization in Climate Change](#)
- [Ph.D. Civil Engineering](#)

Note that the bottom of the main program page contains a listing of all the graduate courses in OCICE, both from Carleton (CIVE courses) and the University of Ottawa (CIVJ courses). These are the courses that you are permitted to take as part of your program. Research students (MAsc and PhD) are also permitted to take non-institute courses with the approval of their supervisor and the Associate Chair of Graduate Studies for Civil Engineering (department). Note you need to obtain approval prior to taking the course. The form to request approval for a course can be found at the department website.

<https://carleton.ca/cee/graduate-forms/>

Note that the Ontario Council for Quality Assurance requires that two-thirds of the courses required for a graduate program must be graduate courses taken primarily by graduate students (see calendar section 5.3 Graduate-level Course Requirements). Graduate courses that are cross-listed with an undergraduate course, do not meet this requirement and a note reflecting this is provided in the course requirement section of each program.

GUIDANCE ON ROLES AND RESPONSIBILITIES OF SUPERVISORS AND STUDENTS

The university has a website outlining the general responsibilities and expectations for supervisors and students. The link is provided here:

<https://gradstudents.carleton.ca/graduate-supervision-responsibilities-expectations-policy/>

DOCTOR OF PHILOSOPHY (PHD) CIVIL ENGINEERING

A PhD in civil engineering consists of courses, a PhD comprehensive exam, a PhD proposal, a PhD thesis (and thesis defence), and participation in the PhD Seminar Series. The faculty of Graduate and Post-Doctoral Affairs also requires you to submit a yearly progress report on your PhD work. Your supervisor is your primary contact for the selection of courses, your comprehensive and proposal, and your research leading to your PhD thesis and defence.

PHD COURSES

Typically completed in the first year of your program but may extend into later terms. The course requirement is a minimum of four courses (2.0 credits). You may be asked to take additional courses by your supervisor and/or Advisory Committee to support your research.

ADVISORY COMMITTEE

An Advisory Committee must be established before or at the time of the student's PhD proposal defence. The Advisory Committee must consist of at least four members including the supervisor, two members of the department (one could be a co-supervisor if applicable), and a member of OCICE from the University of Ottawa. If there is not an OCICE member at uOttawa with the appropriate research expertise, this member can be replaced by another member of the department or other department at Carleton, or an industry or research partner outside Carleton. The supervisor, in consultation with the student, should propose the Advisory Committee membership and send an email with the Advisory Committee membership to the Associate Chair, Graduate, for approval.

PHD COMPREHENSIVE EXAM

The goal of the comprehensive exam is to ensure that students have sufficient fundamental background knowledge in civil engineering. For this purpose, it is completed early in the degree (within 3 terms full time or 6 terms part time from initial registration - see typical roadmap below), and subjects are generally examined at the undergraduate level. If the comprehensive is not offered in the third term, then the student should write the comprehensive at the next available opportunity. In OCICE, the PhD comprehensive exam has two parts: (1) A set of separate four written exams on four different civil engineering topics in at least two different subject areas (2) a single combined oral examination.

Each of the four written exams is provided by a different faculty member. One of the four topics is generally permitted to be examined at the graduate level if requested by the

supervisor. The topics are chosen by the student's PhD supervisor, typically in consultation with the student, and then submitted for approval by the Associate Chair of Graduate Studies for Civil Engineering.

The oral exam is scheduled after the written exams are submitted. The four faculty members may ask the student questions about their written responses as well as other topics from the examined subjects.

The outcomes of the comprehensive exam include a satisfactory grade (SAT) with a recommendation to continue, an in progress (IP) grade with a requirement to take an additional course or courses or take other remedial action, or an unsatisfactory grade. If a student is awarded an unsatisfactory grade in their first attempt, they may be permitted to rewrite the comprehensive at the next available opportunity. If the student is not successful in receiving a SAT grade in the second attempt, the student will be withdrawn from the program.

PhD comprehensive exams are only offered in the Winter and Summer terms and require enrolment in the course **CIVE 6902 Ph.D. Comprehensive Examination** in the term that you will write the comprehensive. A student who received a requirement to take an additional course (with an IP grade) will need to maintain registration in CIVE 6902 until a SAT grade is attained (for a maximum of three terms). To register for CIVE6902 in the fall to remain in progress, a student must submit a manual registration request to the graduate administrator.

PHD PROPOSAL

The PhD Proposal must be completed within 5 terms (full-time) or 9 terms (part-time) of initial registration. It is completed within 2 terms (full-time) or 3 terms (part-time) after completing the comprehensive exam.

The PhD Proposal consists of a written proposal document and an oral examination. These are both evaluated by the student's advisory committee (see section above). The oral

examination will be chaired by a member of the department on the examination committee and not the thesis supervisor or co-supervisor.

The PhD thesis proposal is meant to demonstrate the student's background knowledge, ability to review and critically assess the literature to identify research gaps and/or needs, and to develop an appropriate research plan to address the identified gaps and/or needs. The PhD thesis proposal document should typically consist of the following:

- description of the research project, the motivation for the project
- literature review identifying current gaps in literature
- a detailed research plan, methodology, experimental plan or modelling approach to address the research gaps
- clear statement of any work completed to date; student may include an appendix which could include experimental data, draft or submitted conference and/or journal papers (note an appendix may be included but is not required)
- clear statement of the expected contributions of the research
- 40-80 pages in length (if at 1.5 line spacing), maximum 100 pages

Students must register in **CIVE 6903 Ph.D. Proposal** only in the term that they choose to submit and defend their proposal. The outcomes of the PhD thesis proposal defense may include a satisfactory grade (SAT) or an unsatisfactory grade. If a student is awarded an unsatisfactory grade in their first attempt, they will be given four months to submit a revised thesis proposal that addresses the advice of the PhD committee. The revised proposal should be defended within 2 months of submission. If the student is not successful in receiving a SAT grade in the second attempt, the student will be withdrawn from the program.

PHD SEMINAR SERIES

Prior to submission of their thesis, PhD students are required to give a presentation about their research in the PhD Seminar Series; this is typically completed in the final year of their program. Students must register in **CIVE 6901 Ph.D. Seminar** only in the term that they choose to make their seminar presentation. Note that this Seminar Series is only held in the

fall and winter terms so students should plan accordingly. Although only the students who are presenting during the term will register in the seminar course, all graduate students are expected to attend the seminars to see the presentations.

PHD THESIS AND PHD DEFENSE

Once students have completed their course work and comprehensive exam, they are required to maintain continuous registration in the course **CIVE 6909 Ph.D. Thesis** in every term until they complete their degree. Discuss with your supervisor before you register in the PhD thesis course.

A wealth of resources regarding thesis requirements can be found at:

<https://gradstudents.carleton.ca/resources-page/thesis-requirements/>

This includes thesis formatting guidelines and submission details.

The university's thesis examination policy outlines the membership of the examination committee, format of the defence, thesis submission timelines, etc. Students are **strongly encouraged** to read the thesis examination policy at <https://gradstudents.carleton.ca/wp-content/uploads/Thesis-Examination-Policy-revised-Jan-2022-1.pdf>

The thesis requirements website references an "Integrated Thesis", also referred to as a paper-based thesis, and states the specific units/departments provide details related to the format requirements of an "Integrated Thesis". The Integrated Thesis Policy can be found at https://carleton.ca/senate/wp-content/uploads/6b_Integrated-Thesis-Policy-Revised-24-January-2012-3.pdf .

STUDENT PROGRESS

After the proposal defence, an Annual Progress Report (completed by the student and the student's supervisor/co-supervisors) and a brief 2-5 page progress update generated by the student, will be circulated to the Advisory Committee. This will be completed annually and

placed on file until the student completes the program requirements. The student is welcome to consult with the Advisory Committee and/or organize a meeting with the Advisory Committee (in consultation with their supervisor).

If a student has not attempted a program milestone on schedule (comprehensive or proposal), a one term extension of the milestone will be granted, and the student and supervisor must develop a Progress Report defining tasks required (with dates) to ensure the milestone is completed within one term. If the milestone is not attempted by the end of the next term, a second extension will be granted provided an updated plan is provided by the student and supervisor. A third extension will not be granted without strong justification and approval of the student, supervisor and Associate Chair of Graduate Studies for Civil Engineering. Procedures for comprehensives and proposals that result in unsatisfactory grades are found in the appropriate sections above.

TYPICAL PHD ROADMAP

There really is no “typical” roadmap for a PhD student. A PhD is a challenging and rewarding experience. It requires dedication and passion since it can take 4-6 years (12-18 FT terms) to complete.

Good communication between you and your supervisor is critical. Establishing milestones and reviewing progress are essential. Different supervisors have different approaches to supervision; some are more hands-on and others are more hands-off, and both have advantages and disadvantages. In either case, you need to take ownership of your work and seek guidance when needed.

Discuss your course selections and timing with your supervisor. Some supervisors encourage their students to complete the coursework in the first 1-2 terms, others may suggest delaying a course or two and recommend you commit more time initiating your research if resources and support are available early. Experimental work often takes time to set-up and the earlier you can start to develop and troubleshoot your experimental methods, the better. Your goal

should be to make continual progress and recognize that sometimes you may have to take a step back before making two steps forward. Most PhD students face a time when they feel that their research progress is slower than they would like; know that you are not alone. During these times, focus on your milestones and communicate with your supervisor. Why can some PhD research projects take longer than others? A PhD has to advance science; when you defend your thesis, you will be expected to be the expert in that field and demonstrate your contributions to that field. It is both a great challenge and a great reward.

MASTER OF APPLIED SCIENCE (MASC) CIVIL ENGINEERING

A MASc in Civil Engineering consists of coursework, a MASc thesis (and defence) and participation in the Master's Seminar Series. Your supervisor is your primary contact for the selection of courses and your research, leading to your MASc thesis and defence.

MASC COURSEWORK

Courses must be selected, in consultation with your supervisor, from the list of courses provided in the program requirements section of the calendar. The course requirement is a minimum of five courses (2.5 credits). Students may also, subject to approval, select courses outside the institute but approval must be obtained from the Associate Chair of Graduate Studies for Civil Engineering before taking the course. The appropriate form can be found here <https://carleton.ca/cee/graduate-forms/>

MASC THESIS

Once students have completed their course work, they are required to maintain continuous registration in the course **CIVE 5909 M.A.Sc. Thesis** in every term until they complete their degree. Discuss with your supervisor before you register in the MASc thesis course.

A wealth of resources regarding thesis requirements can be found at:

<https://gradstudents.carleton.ca/resources-page/thesis-requirements/>

This includes thesis formatting guidelines and submission details.

The university's thesis examination policy outlines the membership of the examination committee, format of the defence, thesis submission timelines, etc. Students are **strongly encouraged** to read the thesis examination policy at <https://gradstudents.carleton.ca/wp-content/uploads/Thesis-Examination-Policy-revised-Jan-2022-1.pdf>

The thesis requirements website references an “Integrated Thesis” also referred to as a paper-based thesis and states the specific units/departments provide details related to the format requirements of an “Integrated Thesis”. The Integrated Thesis Policy can be found at https://carleton.ca/senate/wp-content/uploads/6b_Integrated-Thesis-Policy-Revised-24-January-2012-3.pdf . The department does not have any additional requirements or guidance.

MASC SEMINAR SERIES

Prior to submission of their thesis, MASc students are required to give a presentation about their research in the MASc Seminar Series; this is typically completed in the final year of their program. Students must register in **CIVE 5901 Master's Seminar** only in the term that they choose to make their seminar presentation. Note that this Seminar Series is only held in the fall and winter terms so students should plan accordingly. Although only the students who are presenting during the term will register in the seminar course, all graduate students are expected to attend the seminars to see the presentations.

TYPICAL MASC ROADMAP

The pathway to meet the MASc program requirements can vary. A student with a defined research project at the beginning of their MASc may be asked by their supervisor to start their research activities immediately (e.g. literature review, methodology and experimental plan, etc.) and take courses over 3-4 terms. A student without a defined project at the beginning of their MASc, may be asked by their supervisor to complete all their coursework in the first two terms and to start on the project in their third term. Therefore, it is important to consult with your supervisor.

MASTER OF ENGINEERING (MENG) CIVIL ENGINEERING

An MEng in Civil Engineering has two options: (1) a coursework option or (2) a project option. Program requirements for each option are provided in the calendar. An MEng Coursework student is assigned to a faculty advisor and an MEng Project student is assigned to a faculty project supervisor.

MENG COURSEWORK

Courses should be selected, in consultation with your supervisor or advisor, from the list of courses provided in the program requirements section of the calendar. The course requirement is a minimum of ten courses (5.0 credits).

MENG PROJECT

Courses should be selected, in consultation with your supervisor or advisor, from the list of courses provided in the program requirements section of the calendar. The course requirement is a minimum of eight courses (4.0 credits).

The MEng Project (CIVE 5900) is assigned a credit weight of 1.0 credits. As a guideline, a project generally requires more effort than two graduate courses (1.0 credits) and less effort than an MASc thesis (2.5 credits). It typically takes the equivalent of 1-2 full-time terms without coursework to complete a project under the supervision of your supervisor. The deliverable is a final report that will be graded by your supervisor and another professor in the department. Note, you need to allow at least two weeks for your supervisor and the second reviewer to grade the report.

TYPICAL MENG ROADMAP

A Coursework MEng normally takes 4 full-time terms to complete. A Project MEng should take 4-6 full-time terms to complete. Note, course offerings in the summer term are limited.

These timelines vary depending on whether you are fortunate enough to have a TA, availability of courses you wish to take, your level of effort and whether you have a part-time job, etc.

MASC AND MENG WITH COLLABORATIVE SPECIALIZATION IN CLIMATE CHANGE

Master's students in Civil Engineering can specialize and enrol in the MASc or MEng with Collaborative Specialization in Climate Change (CSCC). The program requirements for this specialization are clearly stated in the calendar (link provided earlier). To apply for the CSCC option, write a one-paragraph summary of why you think it is important for you to take the CSCC option. Then, submit this summary to the Department's Graduate Administrator. The department will forward your application to the CSCC admissions committee and, once approved, the department will change your program to the MASc or MEng with Collaborative Specialization in Climate Change and the program requirements will be reflected in your audit.

APPLYING TO GRADUATE

When you are nearing the completion of all your degree requirements, and you are ready to graduate, you need to apply to graduate. This is done during the term prior to the graduation ceremony. All requirements for applying to graduate, including relevant dates and deadlines, may be found at <https://carleton.ca/registrar/progress/graduation/>

TRANSFERRING BETWEEN PROGRAMS

If you would like to change programs, please discuss it with your supervisor or advisor and contact the graduate administrator (CEEGradInfo@cunet.carleton.ca). The program change form may be found with the other graduate forms at <https://carleton.ca/cee/graduate-forms/>. It

is possible to change from MASc to MEng, from MEng Coursework to MEng Project (which would require you to find a project supervisor), or from MEng to MASc (which would require you to find a thesis supervisor). See the sections above for the program requirements.

It is also possible to 'fast-track' directly from an MASc into a PhD (without needing to complete the MASc degree). Requirements for this may be found on the PhD admission page: <https://calendar.carleton.ca/grad/gradprograms/civilengineering/#admissionphdtext>

CIVIL ENGINEERING LABORATORIES

The Department of Civil and Environmental Engineering at Carleton hosts multiple state-of-the-art research laboratories including:

Strong Floor Laboratory (MC 2060) - equipped with computer-controlled hydraulic actuators, a 10-ton overhead crane, loading frames, and a multi-table reconfigurable shaking table system.

Advanced Geotechnical Research Laboratory (MC 2051) - equipped with Hollow Cylinder Torsional shear (HCT), and Triaxial (TRX) devices, an NGI type simple shear (SS), a Resonant Column device, and various routine geotechnical test devices.

Civil Engineering Materials Laboratory (MC 2045): Equipped with Marshall Stability Load Frame, Marshall Stability Digital Component Set with 10,000 lbf Load Cell, Marshall Manual Compactor, 4in Marshall Breaking Head, Sample Ejector for 4in or 6in Molds, 4in Lottman Breaking Head, and Benchtop Laboratory Mixer.

Soil Mechanics Laboratory (MC 1060 A): Equipped with Dead-Weight Consolidation Load Frame, Triaxial Testing Equipment, and Cyclic Triaxial Testing Equipment.

Environmental Engineering Laboratory (ME 2432): Equipped with UV-vis spectrophotometer, Rheometer, Zeta-Meter, Laboratory Turbidimeter, Scanning UV/Visible Spectrophotometer, Automatic Pump & Chemical Cleaning System and

Real-time Spectrum Analyzer, CST Apparatus, Multichannel Modular Potentiostat/Galvanostat System, and Wet Tip Gas Meter.

Biohazard Laboratory (ME 2447): Equipped with Real-Time PCR Detection System, High-Performance Refrigerated Benchtop Centrifuge, Microcentrifuge, Water Purification System for all lab applications, and CO2 incubator.

Analytical Chemistry Laboratory (ME 3499): Equipped with a Gas Chromatograph System, Micro Gas Chromatograph System, Ultra High-Performance Liquid Chromatograph System, TOC-L Analyzer, and Optical Spectrometer.

ME 3441 Research Laboratory: Equipped with Nanoparticle tracker for nanoparticle characterization, Dynamic particle analyzer, Optical inverted microscope, Microvolume UV-vis spectrophotometer, FTIR spectrometer, FTIR microscope, and Global hyperspectral imager.

Delta Controls Laboratory (CB 7206): Equipped with sensors and actuators from Delta Controls to monitor building energy use by drawing on historical and real-time data from every room in the Canal Building at Carleton University and to further predictive and simulation modelling to enable building managers and designers create smarter, more efficient, sustainable buildings.

MC 1060B Research Laboratory: Equipped with Instantaneous Profiling Method (IPM) test setup, Universal OEM ultrasonic pulser-receiver electronic frontend/ flaw detector with wireless data interface for low-frequency applications, 4-channel oscilloscope, flow measuring flume, Fall cone penetrometer, and Modified dead-weight consolidation test load frame.

CB 7110 Research Laboratory: Equipped with Gas chromatograph unit, 2D flow cell, HYPROP system, and 3D printer.

Before doing research in a laboratory you require the consent of your supervisor. You must also complete the required safety training. Health and Safety are critical to your and your colleagues well being. Details about required safety training can be found under Laboratory Forms at this link:

<https://carleton.ca/cee/student-forms/>

Your supervisor may require additional safety training. In the laboratory, all users must dress appropriately and wear all the appropriate personal protective equipment (discuss this with your supervisor and the laboratory staff).

Before conducting research in a laboratory you must also complete the Laboratory Project Information Form with your supervisor. It may be found at the same link above.

COMPUTING ACCOUNTS AND RESOURCES

Your MyCarletonOne (MC1) accounts are provisioned automatically when you are registered at the beginning of a term. For any account issues, please contact the ITS Help Desk (<https://carleton.ca/its/contact/>). The department runs virtual workstations that has our departmental specialized software installed on them. You can access the virtual workstation remotely from any browser on any computer. For instructions, see <https://carleton.ca/cudesktop/>

Carleton also has site-licenses for some common software that you may need (<https://carleton.ca/its/all-services/computers/site-licensed-software/>) For research specific software, discuss with your supervisor.

At the department's Graduate Student Orientation, additional information is provided related to accounts, computing resources, etc. A link to this presentation is here:

<https://carleton.ca/cee/graduate-students-orientation/>

TRAVEL

Any research-related travel, including field-work must be approved by your supervisor ahead of time. Costs for research-related travel are normally supported by your supervisor, subject to availability of funds. Relevant, agreed-upon reimbursement for expenses is handled through the SAP Concur Travel System. For access and instructions, see

<https://carleton.ca/facts/travel/>

Some limited additional funding for travel may be available from the university/department through the travel bursary (speak to your supervisor) or the Graduate Student Association (GSA) (<https://gsacarleton.ca/travel-grant/>).

ADDITIONAL RESOURCES

WELLNESS AND MENTAL HEALTH

Please reach out and seek support from these resources when needed.

- <https://carleton.ca/cee/2021/11/student-support-and-wellness/>
- <https://carleton.ca/wellness/>

IMPORTANT DATES & DEADLINES

- <https://calendar.carleton.ca/academicyear/>

UNIVERSITY POLICIES

- Code of Conduct, Anti-Racism and Discrimination
<https://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/academic-integrity-and-offenses-of-conduct/>
- Academic Integrity <https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf>

- Academic Support and Accommodations <https://carleton.ca/secretariat/wp-content/uploads/Academic-Consideration-Policy-for-Students.pdf>
- Registration <https://carleton.ca/registrar/registration/>
- Applying for Graduation <https://carleton.ca/registrar/progress/graduation/>

FUNDING

- <https://graduate.carleton.ca/financial-assistance/>
- Admissions Funding <https://graduate.carleton.ca/financial-assistance/admissions-funding/>
- Internal Funding <https://gradstudents.carleton.ca/awards-and-funding/internal-awards/>
- External Funding <https://gradstudents.carleton.ca/awards-and-funding/external-awards/>
- OSAP <https://graduate.carleton.ca/government-assistance/>
- Travel <https://gradstudents.carleton.ca/awards-and-funding/special-awards/>

JOB OPPORTUNITY RESOURCES

- Teaching Assistantship <https://gradstudents.carleton.ca/teaching-assistants/>
- Outside Priority TAs <https://gradstudents.carleton.ca/teaching-assistants/#Out>
- Contract Instructor Positions <https://carleton.ca/deputyprovost/jobs/contract-instructors/faq/>
- Enrichment Mini-Courses Program <https://carleton.ca/emcp/>

STUDENT SUPPORT SERVICES/ RESOURCES

- Athletics <https://athletics.carleton.ca/>
- Awards Office <https://carleton.ca/awards/>
- Career Services <https://carleton.ca/career/>
- Faculty of Graduate and Postdoctoral Affairs (FGPA) <https://gradstudents.carleton.ca/>
- Health and Counselling <https://carleton.ca/health/>
- International Student Services Office (ISSO) <https://carleton.ca/isso/>
- Information Technology Services (ITS) <https://carleton.ca/its/>

- Paul Menton Centre (PMC) <https://carleton.ca/pmc/>
- Registrar's Office <https://carleton.ca/registrar/>
- Safety <https://carleton.ca/safety/>
- Scheduling and Examination Services <https://carleton.ca/ses/>
- Student Account Receivable <https://carleton.ca/studentaccounts/>

ASSOCIATIONS

- Associations (CSES, CU-WISE, Engineers without Borders)
<https://carleton.ca/engineering-design/current-students/clubs-and-societies/>