

DEPARTMENT OF CIVIL ENGINEERING GRADUATE STUDENT HANDBOOK*

2020-2021 ACADEMIC SESSION



McMaster University

**Hamilton, Ontario, Canada
L8S 4L7**

***Please note that if there is any discrepancy between this document and the 2020-2021 Graduate Calendar, the Graduate Calendar prevails.**

***Certain sections may vary or be made inaccurate due to COVID restrictions, especially around registration, employment, and funding. McMaster University reserves the right to change its policies this year in the face of government and public health announcements.**

CHAIR'S WELCOME

I would like to take this opportunity to welcome you to the Department of Civil Engineering. We are a research intensive department with exciting and innovative research programs in key areas of civil engineering. Thanks to the high calibre of its internationally recognized faculty, its various research facilities and the superior quality of its students, the department has gained national and international recognition as a premier centre of learning, scholarship and innovation in several areas of civil and environmental engineering. To ensure the relevance of their research to real challenges faced by the civil engineering profession and by society at large, our faculty interact and collaborate closely with other universities, private industry and public agencies on issues of major concern and mutual interest. While we are committed to continuing education and training of engineering professionals, the department's graduate studies are focussed principally on original research and scholarship. Students are guided and mentored by the faculty, but it is a fundamental tenet of our educational philosophy that they learn to think critically and pursue independent research. We adhere to the highest standards of academic integrity and ethical conduct in research and expect all our students to be guided by this ideal.

I am certain that you find your graduate studies experience with us both academically rewarding and personally satisfying. If you need any assistance with respect to your graduate studies, please do not hesitate to contact your thesis supervisor, the graduate advisor, the graduate administrative assistant, or other faculty and staff in the department. Our friendly and highly skilled staff members are here to help you and to make your educational experience at McMaster enjoyable.

Best wishes for a happy and successful academic year.

Dr. Michael Tait, P.Eng., FCSCE
Professor and Chair



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Department of Civil Engineering Graduate Program Contact Information

Morgan Shuker

Graduate Program Administrative Assistant

JHE-301

shukerm@mcmaster.ca

x24287

Morgan Shuker is your first point of contact for all graduate program-related questions or concerns.

Morgan is available to meet one-on-one with students to discuss policies, examinations, courses and degree progression. She is the person you should contact prior to the below individuals.

Joanne Gadawski

Administrator

JHE-301

gadawsj@mcmaster.ca

x24746

Joanne Gadawski is your point of contact for teaching assistantship or funding questions.

Dr. Sarah Dickson-Anderson

Associate Chair of Graduate Studies

JHE-225

dickso@mcmaster.ca

x24914

Dr. Dickson-Anderson is your point of contact for supervisory or policy related graduate program questions or concerns.

Dr. Michael Tait

Professor and Chair

JHE-301

taitm@mcmaster.ca

x26469

Dr. Tait is the Department Chair and can be contacted regarding questions or concerns you may have that could not be answered by the Associate Chair of Graduate Studies or Graduate Administrative Assistant.

Department of Civil Engineering Personnel

FACULTY

Dr. Georgios Balomenos	Assistant Professor, JHE-338 Structural engineering; resilience and sustainability of infrastructure; multi-hazard risk assessment; resilience-based and multi-hazard design; risk analysis of interdependent infrastructure; structural reliability and optimization	balomeng@mcmaster.ca
Dr. Samir E. Chidiac	Professor, JHE-A414 Durability of structures; finite element analysis of heat, air, moisture and salt in porous media; material science; service life modelling of concrete structure seismic evaluation and upgrading of historic stone masonry.	chidiac@mcmaster.ca
Prof. Cameron Churchill	Assistant Professor and Director, Engineering and Society, JHE 316/C Design of sustainable communities.	church@mcmaster.ca
Dr. Paulin Coulibaly	Professor, BSB-336 Water resources engineering; environmental data analysis and modelling; climate trends/variability and water resources planning and management.	couliba@mcmaster.ca
Dr. Sarah Dickson-Anderson	Associate Professor, JHE-225, Philomathia Chair in Water Policy and Research Contaminant hydrogeology; transport, fate, and remediation of non-aqueous phase liquid (NAPL) contaminants in groundwater.	sdickso@mcmaster.ca
Dr. Wael W. El-Dakhakhni	Professor, JHE-303 Martini, Mascarin and George Chair in Masonry Design Behaviour of masonry and concrete structures, fibre reinforced polymers applications in civil engineering, seismic rehabilitation and retrofit, structural health monitoring of and damage detection in composite structures.	eldak@mcmaster.ca
Dr. Mohamed Ezzeldin	Assistant Professor, JHE-309 Earthquake engineering; reinforced masonry systems; dynamic testing; resilient infrastructure systems; risk assessment; data analytics	ezzeldms@mcmaster.ca
Dr. Peijun Guo	Professor, JHE-227 Geomechanics, geotechnical engineering and finite element applications.	guop@mcmaster.ca
Dr. Yiping Guo	Professor, JHE-226 Engineering hydrology and hydraulics, simulation and modelling of water resources systems, uncertainty analysis and assessment.	guoy@mcmaster.ca
Dr. Sonia Hassini	Assistant Professor, JHE-224 Water resources systems; urban stormwater management; rainfall and runoff data analysis; hydrological modelling; analytical flood frequency modelling.	hassinis@mcmaster.ca
Dr. Mohamed Hussein	Assistant Professor, JHE 228 Active modes of travel; enhancing road safety to support sustainability; application of innovation tools; AI; machine learning; computer vision; agent-based modeling to analyze road-user behaviour; connected/autonomous vehicles.	hussem9@mcmaster.ca

Dr. Younggy Kim	Associate Professor, JHE-334 Canada Research Chair (II) Water and Health Water/wastewater treatment processes, ion-exchange membrane systems, and microbial fuel cells.	younggy@mcmaster.ca
Dr. Zoe (Zhong) Li	Assistant Professor, JHE-335 Reliability, vulnerability and risk of environmental infrastructure; hydrological risk modeling and probabilistic forecasting; climate change impact assessment; environmental systems optimization.	zoeli@mcmaster.ca
Dr. Moataz Mohammad	Assistant Professor, JHE-230 Intelligent transportation systems; electric powertrain technologies; transport system integration with energy, environment, and utility; cyber-physical adaptive transportation systems.	mmohame@mcmaster.ca
Dr. SeonHong Na	Assistant Professor, JHE A-411 Computational geomechanics; geotechnical engineering; poromechanics; soil mechanics; thermo-hydro-mechanical (THM) modelling; micromechanics; plasticity; damage and fracture mechanics; constitutive laws; inverse problem.	nas1@mcmaster.ca
Dr. Saiedeh Razavi	Associate Professor, JHE-337 Chair in Heavy Construction Sensing, automation and information technology for construction, infrastructure management, transportation	razavi@mcmaster.ca
Dr. K.S. (Siva) Sivakumaran	Professor, JHE-229 Advanced composite material structures, cold-formed steel structures, structural dynamics, finite element analysis.	siva@mcmaster.ca
Dr. Michael Tait	Professor, JHE-301 Joe Ng-JNE Consulting Chair in Design, Construction and Management of Infrastructure Renewal Structural dynamics, structural monitoring and control, retrofit/rehabilitation of structures.	taitm@mcmaster.ca
Dr. Lydell Wiebe	Associate Professor, JHE-333 Earthquake Engineering, structural dynamics, nonlinear dynamic modelling techniques, steel structures, self-centering systems.	wiebel@mcmaster.ca
Dr. Cancan Yang	Assistant Professor, JHE-399 Prestressed Concrete Bridges; Structural Application of Novel Materials; Damage Mitigation; Accelerated Bridge Construction; Seismic Resiliency and Sustainability; Large-scale Structural Testing; Nonlinear Structural Analysis; Reinforced Concrete Structures	cancanyang@mcmaster.ca
Dr. Hao Yang	Assistant Professor, JHE-143 Autonomous driving; congestion mitigation; urban transportation; human mobility; energy efficiency	haoyang@mcmaster.ca
Dr. Robin Zhao	Assistant Professor, JHE -336 Climate change mitigation; renewable energy; water security; energy storage; carbon storage; multiphase flow; porous media; electrochemistry.	robinzhao@mcmaster.ca
<u>PROFESSORS EMERITUS</u>		
Dr. Brian W. Baetz	Professor Emeritus Design of sustainable communities.	baetz@mcmaster.ca
Dr. Robert G. Drysdale	Professor Emeritus Reinforced and prestressed concrete; building science; properties of masonry; design of masonry structures.	drysdale@mcmaster.ca

Dr. Ahmed Ghobarah	Professor Emeritus Dynamic analysis of structures and earthquake engineering. Rehabilitation of structures and seismic upgrade of existing structures using advanced composites.	ghobara@mcmaster.ca
Dr. F. L. Hall	Professor Emeritus	
Dr. Arthur C. Heidebrecht	Professor Emeritus Earthquake engineering and structural dynamics; seismic analysis of buildings and nuclear power plant structures; seismic qualification of equipment in nuclear power plants.	heidebr@mcmaster.ca
Dr. Robert M. Korol	Professor Emeritus Plastic theory of metal structures; inelastic buckling; limit analysis; environmental assessment and life cycle analysis methodologies.	korol@mcmaster.ca
Dr. Stanislaw Pietruszczak	Professor Emeritus Structural and geotechnical materials – constitutive relations and finite element applications; biomechanics.	pietrusz@mcmaster.ca
Dr. A. Ghani Razaqpur	Professor Emeritus Reinforced and prestressed concrete, fibre reinforced polymer (FRP) applications in structures, advanced numerical modelling of structures, durability of concrete and reinforcement corrosion, design of structures against blast loads, bridge engineering.	razaqpu@mcmaster.ca
Dr. Alan A. Smith	Professor Emeritus Water Resources	alan@alanasmith.com
Dr. Dieter F. E. Stolle	Professor Emeritus, JHE-119 Applied mechanics; geotechnical engineering and finite element applications	stolle@mcmaster.ca
Dr. Ioannis K. Tsanis	Professor Emeritus, JHE-143 Hydraulics, air-water interaction, lake hydrodynamics, diffusion and dispersion of pollutants.	tsanis@mcmaster.ca
Dr. John C. Wilson	Professor Emeritus Structural dynamics and earthquake engineering, bridge engineering	jcwilson@mcmaster.ca

TECHNICIANS

Paul Heerema	Technician, ADL-105, Ext. 22031	heeremp@mcmaster.ca
Monica Han	Technician, JHE-223/A, Ext. 27074	hanm7@mcmaster.ca
Kent Wheeler	ADL Supervisor and Innovative Experiential Learning Coordinator, ADL-105, Ext. 22031	wheelek@mcmaster.ca

ADMINISTRATIVE STAFF

Joanne Gadawski	Administrator, JHE-301/A, Ext. 24746	gadawsj@mcmaster.ca
Morgan Shuker	Administrative Assistant - Graduate, JHE-301, Ext. 24287	shukerm@mcmaster.ca
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Shannon Krasulja	Administrative Assistant - Undergraduate, JHE-301, Ext. 24315	langse@mcmaster.ca

ADJUNCT MEMBERS

Dr. Tracy Becker	Assistant Professor (Adjunct), University of California	tbecker@mcmaster.ca
Dr. Mark Bomberg	Professor (Adjunct), Warsaw	
Dr. Yonas Dibike	Professor (Adjunct), Delft	
Dr. Andre Filiatrault	Professor (Adjunct), University of British Columbia	
Dr. Gordon Huang	Professor (Adjunct), University of Regina	

Dr. Dimitrios Konstantinidis Assistant Professor (Adjunct), University of California
Dr. Shayne Love Assistant Professor (Adjunct), McMaster University
Dr. Waleed Mekky Assistant Professor (Adjunct)
Dr. C. Schuster-Wallace Assistant Professor (Adjunct), McMaster University
Dr. Spencer Snowling Professor (Adjunct), Hydromantis, INC

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ASSOCIATE MEMBERS

Dr. Altaf Arain School of Geography and Earth Sciences
Dr. Carlos Filipe Chemical Engineering
Dr. Antonio Paez School of Geography and Earth Sciences
Tom Wanyama W. Booth School of Engineering Practice and Technology

INDUSTRY PROFESSOR

Dr. Mark Ferguson Professor (Adjunct), McMaster
Youngseck Hong Professor (Adjunct), GE Water
Paul Hynds Professor (Adjunct)
Dr. Ayman Saady Professor (Adjunct), McMaster

Websites of Interest

McMaster Engineering Graduate Society	http://egs.mcmaster.ca/
McMaster Graduate Students Association	https://gsamcmaster.org/
Civil Eng. Graduate Course Schedule	Available via Mosaic.
Graduate Studies Sessional Dates and Deadlines	https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8741
Human Rights and Equity Services	https://equity.mcmaster.ca/
International Student Services	https://studentsuccess.mcmaster.ca/international-students/
Leaves of Absence	https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8734#2-5-7_leaves_of_absence
OMBUDS Office	https://www.mcmaster.ca/ombuds/
Parking and Transit Services	<p>Parking: http://parking.mcmaster.ca/</p> <p>Office of Sustainability – Alternative Transportation: https://facilities.mcmaster.ca/services/sustainability/transportation/</p>
Student Accessibility Services	<p>https://sas.mcmaster.ca/</p> <p>Student Accessibility Services (SAS) provides academic accommodation assistance and related supports to students with disabilities at McMaster. SAS is available to assist students transitioning from high school, other post secondary institutions, undergraduate, continuing and graduate students. Approved accommodations of previous undergraduates at McMaster do not automatically apply during graduate studies. Students needing accommodations should return to SAS soon after commencement of their graduate program to implement or update your student status and to activate accommodations.</p>
Setting up your McMaster Email Address	https://www.mcmaster.ca/uts/students/gettingstarted/activateMACID.html
Student Wellness Centre	https://wellness.mcmaster.ca/
SWHAT (Students Walk Home Attendant Team)	https://www.msumcmaster.ca/services-directory/3-student-walk-home-attendant-team-swhat
W.H.M.I.S. Training Schedule	https://hr.mcmaster.ca/employees/health_safety_well-being/our-safety/health-and-safety-training/
UHIP	https://studentsuccess.mcmaster.ca/international-students/health-insurance/

GENERAL INFORMATION FOR NEW GRADUATE STUDENTS

2020-2021 Academic Year

The following information is offered to assist incoming graduate students in establishing their programmes of study and research.

Programme Counselling: The Associate Chair of Graduate Studies is Dr. Dickson-Anderson, located in JHE-225. Dr. Dickson-Anderson will advise students on the design of programmes of study and will be available to answer questions concerning general graduate student issues. The Graduate Administrative Assistant, Morgan Shuker, will be available in to assist with registration and general orientation.

Students should discuss course content and research interests with appropriate faculty members so that study programmes can be developed which best suit the student's particular area of interest. All course descriptions are available in the [Graduate Calendar](#), and a list of those offered by the department this year can be found on Mosaic.

Courses: Graduate courses will commence on or after September 8, 2020. All students should register in their chosen courses, or indicate if they are working on their research, thesis/project for Terms I and II via MOSIAC by September 25, 2020. You *must* discuss with your supervisor which courses you should register for and complete the Department of Civil Engineering Course Selection Worksheet **PRIOR TO** registering on MOSAIC. Completed worksheets are to be returned to Morgan Shuker, Graduate Administrative Assistant by no later than September 25, 2020. Please note, for record keeping purposes, all of your courses for the entire year must be entered.

Students should note that certain courses available for graduate credit are offered concurrently with undergraduate courses. These are designated as 600-level in the Graduate Calendar and 400-level courses in the Undergraduate Calendar. Since all undergraduate classes commence on September 8th, graduate students contemplating registration in such a course(s) should try to attend the first lectures in that week. Timetable and room schedule details are available in MOSAIC. Similarly, it should be noted that students taking graduate classes outside of the department (e.g. in Chemical Engineering) should ensure that their enrolment intentions are made known to the appropriate department. The most effective liaison is by personal contact with the course instructor.

Mandatory Teaching Assistant Training: All new TAs as of September 2017 are required to complete a training workshop. This workshop will be 5 hours in length and will be paid and the new TA is required to attend the workshop in its entirety. This workshop will cover grading, leading tutorials (e.g., setting up a lecture plan), and handling different personality types.

ADMINISTRATIVE INFORMATION

Payment of Scholarships and Teaching Assistantships

Employment income from TA assignments will be paid bi-weekly by direct deposit to the employee, based on when the student is scheduled to work. TA payments are normally in term 1 (September to December) and/or term 2 (January – April). For more information about when you are scheduled to work, please refer to your employment contract.

Research scholarships paid by Supervisors from a research grant will be paid via lump sum instalments via direct deposit at the beginning of each term, unless otherwise specified by your supervisor.

All other scholarships will be disbursed to the student in lump sum instalments via direct deposit at the beginning of each term.

If a student is currently enrolled and wins a major graduate scholarship (NSERC, Vanier, OGS, CREATE, QEII GSST, CSC (China), CNPQ-Brazil, KASP (Saudi Arabia), and EAA (Egypt)) the total stipend provided by the department cannot be reduced by more than \$2,500 per term for each term in which the student holds the award (i.e., a maximum stipend adjustment of \$7,500 per year). If the student is a new applicant who brings with them a major graduate scholarship, the total support per year provided to the student cannot be less than the Faculty of Engineering minimum stipend. The stipend re-adjustment mentioned above does not apply. It is strongly recommended the applicant receive an offer covering their tuition at least for the duration of the major graduate scholarship, provided by a teaching assistant position, with the remainder provided by the department and supervisor. At no time shall the Faculty of Engineering contribute the \$6,250 domestic doctoral scholarship or the \$2,500 international bursary for the years which the applicant is anticipated to hold the major graduate scholarship.

Further information about student accounts, timing of payments and payment schedule for the 2020-2021 academic year will be sent prior to the Fall. Information regarding the funding model can be found here: <https://gs.mcmaster.ca/current-students/scholarships/>

Should you have questions concerning your monthly payment, please contact our Administrator, Joanne Gadawski, at ext. 24746 (E-mail: gadawsj@mcmaster.ca).

It is important to recognize that the Departmental Scholarship support does not extend beyond the first 20 months of a Master's programme. Exceptions are only made to this policy under very special circumstances. The funding period is 48 months for the Ph.D. programme.

Attendance and Vacations of Full-time Graduate Students

As indicated in the *School of Graduate Studies 2020-2021 Calendar, Section 2.5.8. Vacations*: “Full-time graduate students are expected to be on campus for all three terms of the university year, as specified in [Section 1.3](#). In addition to statutory holidays (see [Sessional Dates](#)) and the closure of the University normally late December until early January, normal vacation entitlement for a graduate student is two weeks of vacation during the year, to be scheduled by mutual agreement with the research supervisor. An exception to this allotment requires approval from the supervisor or in the supervisor’s absence a member of the supervisory committee. Students who are also employees of the University must seek vacation approval from their employment supervisor and are entitled to vacation time pursuant to the terms of their employment contract.”

Please note that all full-time graduate students in Civil Engineering are required to submit a “Request to be Full-Time Off Campus Form” if they will be leaving campus for more than two weeks for any reason, including research.

Section 1.3 Responsibilities of Graduate Students to the University - School of Graduate Studies 2020-2021 Calendar:
“Full-time students are obliged to be on campus, except for vacation periods or authorized off-campus status, for all three terms of the university year. Vacation entitlement is discussed in [2.5.8](#). Any student who is away from campus for longer than one week, which is not part of the student’s vacation entitlement, requires their supervisor’s approval in writing. If this period of time exceeds two weeks, the approval of the department chair is also required. In accordance with government regulations (see [Section 2.5.3](#)) students who will be away from campus for more than four weeks require not only permission from the Department but also that of the appropriate Associate Dean of Graduate Studies and must submit a Request to be Full Time Off Campus. Note that this permission is needed even for field work or study elsewhere in the world, in order to allow the University to comply with the regulation requiring that a written explanation for such absences be lodged in the Graduate School office. Students may arrange, through the Department and the Associate Dean of Graduate Studies, to be “full-time off-campus” for periods of up to a year. Students will also be required to complete the Risk Management Manual (RMM) 801 forms and gain approval through EOHSS. In cases of unauthorized absence the student will be deemed to have withdrawn voluntarily from graduate study and will have to petition for readmission. No guarantee of readmission or of renewal of financial arrangements can be made. An exception to this policy would be programs that deliver their curriculum either partially or fully in on-line formats. Please refer to details in individual program descriptions.”

Health and Safety Requirements

Provincial legislation requires that all people employed in a workplace where hazardous materials are used attend the W.H.M.I.S. training session. The training is *mandatory*, not optional, for all graduate students in our Department.

All graduate students are *required* to complete the following courses:

- Asbestos Awareness
- Ergonomics
- Fire Safety
- WHMIS 2015
- Slips, Trips and Falls
- Violence and Harassment

Note that additional safety training courses may also be required depending on your research plans. Safety training plans should be discussed with your supervisor.

Departmental Photocopying

The department has a photocopier in Room 302. To use this copier, you must first obtain permission to do so from your supervisor and then request a copying account code. For further information regarding photocopying accounts, please see the Undergraduate Administrative Assistant.

Computer Facilities

Graduate students who need to use computers for their research will be provided access to a computer by their research supervisors. For larger scale computation, access can be gained to the SHARCNET supercomputer facilities at McMaster. All graduate students’ rooms are equipped with high-speed internet connections.

Your McMaster Email Address

As soon as you are issued your McMaster email address, please notify Morgan Shuker. *All* email communication to students is done through your McMaster email account. We are unable to send emails to YAHOO, Hotmail or Gmail accounts as per University policy.

Convocating Students

Please see Morgan Shuker to obtain our Departmental Exit Sign-Off sheet when you have completed all of the

requirements for your degree and you are about to submit the final electronic copy of your thesis, revised as directed by your defence examining committee, to the School of Graduate Studies. Additionally, we will be happy to forward your mail via Canada Post for up to three months after you have left if you provide us with your forwarding address.

COURSE INFORMATION

All required courses must be consistent with the content within the areas of research outlined by the department in the School of Graduate Studies Calendar. Courses outside the seven academic departments of Engineering are generally not eligible for use towards graduate degree requirements unless approved by the department and supervisory committee.

Courses in SEPT are not acceptable towards a degree requirement. Professional skills and other complementary type courses like EDU 750 (Principles and Practices of University Teaching) are also not acceptable towards a degree requirement. If your supervisor requires you to take a course outside of the established list approval must be granted by the department. Please see Morgan Shuker, Administrative Assistant – Graduate Program for details on how to request approval.

600-level half courses are offered for graduate credit and are also available to senior undergraduate students. In accordance with the School of Graduate Studies regulations, M. Eng. students will not be permitted to take more than two half courses at the 600-level, and M.A.Sc. and Ph.D. students will not normally be permitted to take more than one half course at the 600 level.

Course Registration

Each term there is a deadline for registration and change in course registration (drop/add). Students adding a course after the appropriate deadline will not receive academic credit for that course. Also, students dropping a course after the deadline will receive a failing grade in that course. Students wishing to drop/add extra courses must do so in accordance with the School of Graduate Studies deadlines. If a student wishes to take “extra credit” courses they must submit a petition via MOSAIC. More information can be found in Section 2.6.3 of the 2020-2021 Graduate Course Calendar.

Deadlines for such drop/adds are detailed on School of Graduate Studies website at

<https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8741>. Students are to register for their courses through MOSAIC. All students must meet with their supervisors, and complete and submit a Department of Civil Engineering Graduate Course Registration Worksheet before registering for courses online. This worksheet does not register you for your courses; it simply assures the department that you have met with your supervisor to plan your course of study

Note: Any change in a student's program requires the approval of the student's Supervisor, Chair, or the Graduate Student Advisor.

Master of Applied Science (M.A.Sc.) Degree Requirements

Graduate Career Planning: As of September 1, 2015 all new graduate students in Masters or Doctoral programs within the Department of Civil Engineering and the Faculty of Engineering, are required to complete a career planning exercise within their first academic year (September to August). Students must produce a report before the end of their first year. The report should be no more than two pages and must be submitted to the department's Associate Chair of Graduate Studies before the end of August in their first year. For students who start their programs in May or January their career plan must be submitted by the end of their first 12 months in the program. In preparation for writing this career planning exercise, students will be contacted by the Engineering Career Services Dept. for career counseling sessions.

M.A.Sc. Course Requirements: Candidates will be required to complete satisfactorily the equivalent of at least four half courses, of which at least two must be from within the Department of Civil Engineering at McMaster University. Please note that the additional course work may be prescribed if deemed necessary by the candidate's research supervisor. If a student wishes to take "extra credit" courses they must submit a petition via Mosaic. More information can be found in Section 2.6.3 of the 2020-2021 Graduate Course Calendar.

Additional Requirements: In addition to the above course requirements, all full-time Master's candidates must attend and participate in the Department of Civil Engineering Graduate Student Seminar Day for the first 6 terms (24 month) of study. Master's candidates who begin studies in September 2017 or later will receive a mid-program progress review from their supervisor. This review must be submitted to the department within 8 months of starting the program for full-time students, and within 16 months for part-time students. Upon completion of all degree requirements, and after the approval of the supervisor, a thesis must be presented which will embody the results of an original investigation usually in the form of one journal or paper; and the dissertation is to be defended in an oral examination. Information pertaining to the thesis defence procedures can be found in the Master of Applied Science Examination Regulations found on page 10.

Supervision: Supervision of M.A.Sc. students is governed by the School of Graduate Studies regulations as outlined in the current "School of Graduate Studies Calendar" (see the following link and refer to Section 3.5: "Regulations for Master's Degrees" <https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8735>)

Defence & Submission of M.A.Sc. Theses: Information on how to write, defend and submit your Master's thesis can found at <https://gs.mcmaster.ca/current-students/completing-your-degree/>.

Preparation of Theses (Regular and Sandwich): The general requirements for the production of a Master's or Doctoral thesis can be found in the Guide for the Preparation of Master's and Doctoral Theses of the School of Graduate Studies https://gs.mcmaster.ca/app/uploads/2019/10/guide_for_the_preparation_of_masters_and_doctoral_theses-december_2016.pdf

DEPARTMENT OF CIVIL ENGINEERING

McMaster University

Hamilton, Ontario

MASTER OF APPLIED SCIENCE EXAMINATION REGULATIONS

RESEARCH THESIS

All M.A.Sc. (thesis) candidates are required to present a thesis, which embodies the results of an original research investigation. The following regulations apply to theses submitted in partial fulfillment of the M.A.Sc. degree requirements.

1. Examination Committee

Each M.A.Sc. candidate must successfully defend her/his thesis in an open oral examination before a committee appointed by the Department Chair. The committee shall be composed of at least three voting members (at least two from the Department), including the candidate's supervisor, and chaired by a non-voting member.

Proposed examination committee voting membership will be made known to each candidate, who has the right to express her/his own opinion concerning this membership to the Graduate Student Advisor. It is the responsibility of the supervisor to inform the candidate of the proposed voting membership of the examination committee.

2. Thesis Examination

It will be the responsibility of the candidate to submit the thesis to members of the examination committee a minimum of two (2) weeks prior to the tentative date of the oral defence.

Sec 2.8.1 Graduate Calendar:

Prior to the thesis defence, the entire document must be reviewed for its originality using the University's paid subscription to Urkund. The program/supervisor will review the originality report generated by Urkund and either recommend changes to the document or approve it for the defence. A thesis may not be seen by the thesis examining committee until the Urkund-generated report is reviewed and approved by the supervisor or the program, unless authorized by the Associate Dean of Graduate Studies.

In the event that a voting member indicates that gross deficiencies exist in the thesis, the examination committee chair will convene a meeting of the voting members to discuss the thesis at least two (2) days before the anticipated date of defence. The purpose of that meeting will be to recommend one of the following courses of action, based on a majority vote:

- (a) that the thesis is not acceptable for defence in its present form, and return it to the candidate with explicit comments as to why it is not acceptable;
- (b) that specific modifications in the thesis are required prior to formal defence, and direct the candidate to effect those changes; or
- (c) that the thesis be formally defended with/without minor modifications.

3. Seminar

Each M.A.Sc. candidate must present a seminar on the completed research work. For M.A.Sc. thesis candidates, this seminar will normally be held on the day of the oral examination. Attendance at that seminar is open to all interested persons.

4. Oral Defence

The examining committee chair will convene an oral defence only after receiving from voting members written confirmation that the thesis is acceptable for defence. Formal presentation of the thesis work will normally not be required during an oral examination. **The examination will be open to all interested persons.**

5. Examination Outcome

A successful defence will include acceptance, by a majority of voting members, of the written thesis and of the oral defence. The outcome of the oral defence will be limited to one of the following, based on majority vote:

- (a) the oral defence and thesis are satisfactory; the candidate is passed;
- (b) either the thesis or the oral defence is unsatisfactory and the candidate is given an opportunity to be re-examined only once; or
- (c) the thesis and/or the oral defence is unsatisfactory; the candidate is failed.

Master of Engineering (M.Eng) Degree Requirements

Graduate Career Planning: As of September 1, 2015 all graduate students in Masters or Doctoral programs within the Department of Civil Engineering and the Faculty of Engineering, are required to complete a career planning exercise within their first academic year (September to August). Students must produce a report before the end of their first year. The report should be no more than two pages and must be submitted to the department's Associate Chair of Graduate Studies before the end of August in their first year. For students who start their programs in May or January their career plan must be submitted by the end of their first 12 months in the program. In preparation for writing this career planning exercise, students will be contacted by the Engineering Career Services Department for career counseling sessions.

M.Eng. Course Requirements: Candidates who begin their studies on September 1st, 2020 or later will be required to complete satisfactorily the equivalent of at least eight half courses, of which at least six must be from within the Department of Civil Engineering at McMaster University, including CivEng 700 which is the required project course. CivEng 700, which is equivalent to two half-courses, is to be taken when students are working on their project, typically after the completion of all academic coursework. Additional course work may be prescribed if deemed necessary by the candidate's project supervisor. If a student wishes to take "extra credit" courses they must submit a petition via MOSAIC. More information can be found in Section 2.6.3 of the 2020-2021 Graduate Course Calendar.

Additional Requirements: In addition to the above course requirements, all full-time Master's candidates must attend and participate in the Department of Civil Engineering Graduate Student Seminar Day for the first 6 terms (24 month) of study. Upon completion of all degree requirements, and after the approval of the supervisor, a report must be presented on a project which demonstrates ability to carry out independent study and reach a satisfactory conclusion. The report must be approved by the department and presented orally to the department. Information pertaining to the project presentation procedures can be found in the Master of Engineering Project Report Guidelines found on page 13.

Supervision: Supervision of M.Eng. students is governed by the School of Graduate Studies regulations as outlined in the current "School of Graduate Studies Calendar" (see the following link and refer to Section 3.5: "Regulations for Master's Degrees" <https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8735>)

Submission of M.Eng. Projects: Once you have successfully presented your M.Eng. project and all corrections have been made, as required by your presentation committee, you must submit an electronic copy of your project to our department. This electronic copy must be in a PDF format. Submissions are to be emailed to our Graduate Administrative Assistant. Once this document is received, the appropriate paperwork indicating that you have successfully completed the degree requirements will be submitted to the School of Graduate Studies.

DEPARTMENT OF CIVIL ENGINEERING

McMaster University

Hamilton, Ontario

MASTER OF ENGINEERING PROJECT REPORT GUIDELINES

All Master of Engineering (project) candidates are required to complete CivEng 700 and submit a project report.

CIVENG 700 - M.Eng. INDEPENDENT RESEARCH PROJECT M.Eng. Independent Research Project is supervised by a faculty member, and involves an experimental investigation, an analytical investigation, a design project, a state-of-the-art review, or a combination of these elements in a chosen topic matter in civil engineering. A faculty member (from the Department of Civil Engineering) must agree to supervise the project, and it is a student's responsibility to obtain prior consent of a supervisor. The supervisor may request a project proposal. The student must submit a project report which demonstrates ability to carry out independent study and reach a satisfactory conclusion. The written report will be evaluated by the supervisor and an independent reader (another faculty member). Upon approval of the written report, the student must orally present the report to the department. A McMaster letter grade will be assigned by the supervisor and the reader based on the written report and the oral presentation.

All project reports submitted for examination will be subject to the same standards as theses. The format and style will comply with the School of Graduate Studies guidelines for thesis preparation.

Should the candidate desire clarification of any matter related to the project report, the Associate Chair of Graduate Studies should be contacted.

PROJECT REPORT

Project reports submitted in partial fulfillment of the Master of Engineering degree requirements will be examined in the following manner:

1. Examination Committee

The project report will be examined by at least two faculty members of the Department, appointed by the Department Chair, including the candidate's supervisor. A third examining member will only be appointed when required to cast a determining vote for an examination outcome in 4 below.

2. Project Report Examination

The examination will consist of a detailed review of the project report by the examination committee. The examination committee may require an oral defence.

3. Seminar

Each M.Eng. candidate must present a seminar on their project topic. Attendance at that seminar is open to all interested persons.

4. Examination Outcome

A McMaster letter grade will be assigned by the supervisor and the reader based on the written report and the oral presentation.

A successful examination will include acceptance, by a majority of voting members, of the written project report. The outcome of the examination will be limited to one of the following:

- (a) the project is satisfactory and the candidate passes;
- (b) the project report is unsatisfactory and the candidate is given an opportunity to have the report re-examined only once; or
- (c) the project report is unsatisfactory and the candidate is failed.

Doctor of Philosophy (Ph.D) Degree Requirements

Graduate Career Planning: As of September 1, 2015 all new graduate students in Masters or Doctoral programs within the Department of Civil Engineering and the Faculty of Engineering, are required to complete a career planning exercise within their first academic year (September to August). Students must produce a report before the end of their first year. The report should be no more than two pages and must be submitted to the department's Associate Chair of Graduate Studies before the end of August in their first year. For students who start their programs in May or January their career plan must be submitted by the end of their first 12 months in the program. In preparation for writing this career planning exercise, students will be contacted by the Engineering Career Services Dept. for career counseling sessions.

Ph.D. Course Requirements: Candidates will be required to complete satisfactorily the equivalent of at least four half courses in addition to the course requirements for an M.A.Sc. degree, of which at least two half courses must be from within the Department of Civil Engineering at McMaster University. Additional course work may be prescribed if deemed necessary by the candidate's research supervisor. If a student wishes to take "extra credit" courses they must submit a petition via Mosaic. More information can be found in Section 2.6.3 of the 2020-2021 Graduate Course Calendar.

Additional Requirements: In addition to the above course requirements, all full-time Ph.D. candidates must attend and participate in the Department of Civil Engineering Graduate Student Seminar Day for the first 12 terms (48 month) of study. The candidate must also pass a Comprehensive Examination which has 2 parts. Part 1 is normally taken within the first year and Part 2 is normally taken in the second year of the doctoral program. The purpose of this examination is to test the candidate's acquisition of knowledge and maturity of approach to problems in the major field of study, as well as in appropriately chosen cognate subject areas. The detailed regulations governing these examinations may be obtained from the Department.

Supervision: Supervision of Ph.D. students is governed by the School of Graduate Studies regulations as outlined in the current "School of Graduate Studies Calendar" (see the following link and refer to Section 3.5: "Regulations for the Doctor of Philosophy Degree" <https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8736>)

Defence & Submission of Ph.D Theses: Information on how to write, defend and submit your Ph.D. thesis can be found at <https://gs.mcmaster.ca/current-students/completing-your-degree/>.

Prior to the thesis defence and, in the case of a doctoral thesis before sending out the draft to the external examiner, the entire document must be reviewed for its originality using the University's paid subscription to Urkund. The program/supervisor will review the originality report generated by Urkund and either recommend changes to the document or approve it for the defence. A thesis may not be seen by the thesis examining committee (including the

external reviewer in the case of a doctoral thesis) until the Urkund-generated report is reviewed and approved by the supervisor or the program, unless authorized by the Associate Dean of Graduate Studies.

Preparation of Theses (Regular and Sandwich): The general requirements for the production of a Master's or Doctoral thesis can be found in the Guide for the Preparation of Master's and Doctoral Theses of the School of Graduate Studies https://gs.mcmaster.ca/app/uploads/2019/10/guide_for_the_preparation_of_masters_and_doctoral_theses-december_2016.pdf

DEPARTMENT OF CIVIL ENGINEERING

McMaster University

Hamilton, Ontario

Ph.D. SUPERVISION AND RESPONSIBILITIES OF Ph.D. SUPERVISORY COMMITTEE

Most of the procedures and regulations regarding supervision are described in the [School of Graduate Studies Calendar](#). Please refer to [Sections 2.7 Supervision \(General\)](#), and [Section 4.4 Supervision for PhD](#) of the calendar.

Ph.D. students are required to meet with the supervisory committee once per year at the minimum. However, if the student's start date is in January or May, they need to have a meeting by November 30th of that year, according to the School of Graduate Studies Policy. It is the responsibility of the student to plan their meeting dates and times based on the availability of the committee, and once this is done they may contact the Graduate Administrative Assistant to book a room. It is the responsibility of the student to communicate the date, time and location to the committee. It is important to note subsequent meetings must occur within 12 months of the preceding meeting as per the Graduate Calendar. At each meeting the student is required to submit the electronic supervisory committee meeting report to their respective committee outlining their progress. The link to this electronic report will be sent by the Graduate Administrative Assistant to the student. The student will verify that the committee is correct and if it is found that it is not they will contact the Graduate Administrative Assistant. If a hard copy of the Ph.D. supervisory committee report form is needed, a copy can be found on the School of Graduate Studies website under 'Resources' or on the Department of Civil Engineering website under 'Resources'.

All Ph.D. students are required to take, and pass, a comprehensive examination in order to become a Ph.D. candidate. The governing regulations can be found on page 17.

Please read the [School of Graduate Studies Calendar](#) for other relevant information and more specific information on Graduate Degrees offered in the Department of Civil Engineering. Further information can be obtained from the Associate Chair of Graduate Studies or Chair of the Department.

DEPARTMENT OF CIVIL ENGINEERING

McMaster University

Hamilton, Ontario

Ph.D. COMPREHENSIVE EXAMINATION REGULATIONS

1. Purpose

The purpose of this examination is to test the candidate's acquisition of knowledge and maturity of approach to problems in the major field of study, as well as in appropriately chosen cognate subject areas. It is intended that this examination will also be used to test the candidate's competence and ability to conduct research in the chosen speciality.

The comprehensive examination will consist of two parts.

2. Membership of the Ph.D. Examination Committee

The Part A Ph.D. Examination Committee shall consist of a non-voting Committee Chair, and **three voting members** as follows: the supervisor, one representative from the candidate's supervisory committee (this representation will be decided by the members of the supervisory committee), and one departmental representative who is not part of the candidate's Supervisory Committee. The Part B committee shall consist of a non-voting Chair, and the three voting members of the Ph.D. Supervisory Committee.

In case of a re-examination the provision of 6(b) shall also apply.

3. Chair of the Ph.D. Examination Committee

The position of the Examination Committee Chair shall be taken by rotation of the departmental faculty. The candidate's supervisor(s), the Graduate Student Advisor or the Department Chair shall in no instance be the Ph.D. Examination Committee Chair.

4. Part A: Breadth and Depth of Knowledge

Objective: The objective of Part A, consisting of a written examination and an oral examination, is to test the candidate's knowledge of undergraduate material in the major field of study, with graduate level understanding and the ability to think independently.

Time: Students shall take Part A normally within **10 months** of admission to the doctoral program.

Written part: This is a 4 hour open-book/closed-door examination, with three questions in three selected subject areas. For each question, the candidate must demonstrate a graduate-level understanding of undergraduate material. The three subject areas shall be selected by the Examination Committee. The candidate shall be informed of the three areas **at least two months** prior to the exam. Without restricting the reference materials that candidates may choose to bring to the examination, candidates shall be notified at least two months before the examination of any references that they are required to bring. The use of computers or communicating electronic devices during the examination is strictly prohibited, unless the Examination Committee agrees otherwise and notifies the student at least two months prior to the examination.

Oral part: The oral exam shall be conducted normally within 48 hours following the written part.

The oral examination will mostly be based on the questions from the written part of the examination. However, the scope of the oral part may extend to examining the depth of knowledge in the candidate's discipline area and possible deficiencies in the candidate's academic background.

The oral exam shall not exceed two hours in duration.

5. **Part B: Research Proposal and Oral Exam**

Objective: The objective of Part B is to test the candidate's competence and ability to conduct research in the chosen specialty.

Time: Within **8 months** of passing Part A.

Written part: The candidate shall submit a research proposal, a minimum of two weeks before the Part B examination, up to a maximum of 25 pages in length. This page length does not include the cover page or references.

Oral part: The candidate will be required to present the research proposal in a summary fashion (approximately 20 minutes) to the committee, followed by questions directly related to the proposal and the candidate's specific area of research. The oral part is an open examination and shall not exceed two hours in duration.

6. **Outcome of the Examination**

The evaluation and outcome of the examination applies to both Parts A and B of the examination.

There shall only be two possible outcomes of the first Ph.D. Comprehensive examination. The committee shall render one of the following decisions:

- a. When there are two or more passing votes then the Committee rules that the candidate passed the examination. The Committee may add to this pass conditions to correct any weaknesses detected (e.g., take a specific course). [Designation of 'Pass']
- b. When there are two or more "Unsatisfactory" votes there shall be a re-examination. For Part A, the re-examination shall be within 4 months of the initial attempt. The Part A re-examination shall contain only three questions. In the event of a re-examination for Part A, one new member shall be added to the original examination committee. For Part B, the re-examination shall be within **3 months** of the original examination and within **20 months** of admission to the doctoral program, whichever is earlier. [Designation of 'Re-Examination']

There shall only be two possible outcomes of a re-examination. The committee shall render one of the following decisions:

- c. For Part A, when there are three or more passing votes then the Committee rules that the candidate passed the examination. For Part B, two or more passing votes are required for a pass. The Committee may add to this pass conditions to correct any weaknesses detected (e.g., take a specific course). [Designation of 'Pass']
- d. When there are two or more "Unsatisfactory" votes, the candidate will fail. The candidate will be required to withdraw from the Ph.D. programme for a "Fail" in the re-examination of either Part A or Part B. [Designation of 'Fail']

The Re-Evaluation and Outcome of the Examination apply to both parts of the examination.

7. **Notification of Outcome**

The Chair of the Ph.D. Examination Committee shall verbally inform the candidate of the Committee's decision based on one of the two possible outcomes above. That decision shall be conveyed to the candidate immediately after the Committee has concluded discussion.

Formal written notification of the Committee ruling will be provided by the Graduate Student Advisor upon receipt of the Committee report.

Revised January 2017

Pertinent McMaster University Policies and Procedures

Academic Integrity Policy:

<https://secretariat.mcmaster.ca/app/uploads/Academic-Integrity-Policy-1-1.pdf>

Academic Accommodation of Students with Disabilities

<https://secretariat.mcmaster.ca/app/uploads/Academic-Accommodations-Policy.pdf>

Accessibility Policy:

<https://secretariat.mcmaster.ca/app/uploads/2019/05/Accessibility.pdf>

Discrimination, Harassment and Sexual Harassment Prevention and Response Policy:

<https://secretariat.mcmaster.ca/app/uploads/Discrimination-and-Harassment-Policy.pdf>

Fair Dealing Policy

<https://copyright.mcmaster.ca/app/uploads/2018/06/Fair-Dealing-Policy-Nov-2013.pdf>

Ownership of Student Work

<https://secretariat.mcmaster.ca/app/uploads/2019/06/Ownership-of-Student-Work.pdf>

Policy on Academic Accommodation for Religious, Indigenous and Spiritual Observances

<https://secretariat.mcmaster.ca/app/uploads/2019/02/Academic-Accommodation-for-Religious-Indigenous-and-Spiritual-Observances-Policy-on.pdf>

Research Integrity Policy:

<https://secretariat.mcmaster.ca/app/uploads/Research-Integrity-Policy.pdf>

Sexual Violence Policy:

<https://secretariat.mcmaster.ca/app/uploads/Sexual-Violence-Policy.pdf>

Sexual Violence Response Protocol:

<https://svpro.mcmaster.ca/>

Collective Agreement for TA/RA in Lieu of TA:

<https://hr.mcmaster.ca/employees/labour-relations/cupe-local-3906-unit-1-tas/>

Copyright Information:

<https://copyright.mcmaster.ca/>

Graduate Student Leaves of Absence:

https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8734#2-5-7_leaves_of_absence

Petition for Special Consideration:

<https://gs.mcmaster.ca/app/uploads/2020/02/petition - october 2018 revised.pdf>

Incomplete/Failing Grades:

https://academiccalendars.romcmaster.ca/content.php?catoid=42&navoid=8734#2-6-8_milestones

Student Code of Conduct:

<https://secretariat.mcmaster.ca/app/uploads/Code-of-Student-Rights-and-Responsibilities.pdf>

Student Appeals Procedure:

<https://secretariat.mcmaster.ca/app/uploads/Student-Appeal-Procedures.pdf>

Academic Accommodation, Assistance, and Related Supports for Students With Disabilities:

<https://sas.mcmaster.ca/>