

McMaster Engineering Graduate Studies

2018



BRIGHTER WORLD

macenggradstudies.ca

ENGINEERING



Welcome to McMaster's globally renowned Faculty of Engineering

Ranked as one of the world's top engineering schools, the Faculty of Engineering plays a significant role in helping McMaster University earn its reputation as one of Canada's most innovative universities.

Our focus on experiential, problem-based learning and our interdisciplinary approach to collaboration results in smarter insights, groundbreaking ideas, and greater optimism.

This approach is helping us create a brighter world.



"At McMaster Engineering, we value our strong sense of community that brings together graduate students and professors to find solutions to many pressing global challenges."

Michael Thompson
Associate Dean, Graduate Studies
Faculty of Engineering



"McMaster Engineering is ranked among the top programs in the world. We foster a love of learning and sense of personal dedication to excellence within a broader societal context of engineering. Our students are motivated and inspired to become engaged citizen scholars who will transform the world."

Ishwar K. Puri
Dean, Faculty of Engineering

6 disciplines
in the
Top 150

Engineering Programs
Internationally (2017)

Shanghai Ranking's Global Ranking
of Academic Subjects

McMaster Engineering has a well-established reputation as one of Canada's most research-intensive faculties in a range of disciplines from advanced manufacturing, materials, automotive, and nuclear research. We continue to push the boundaries of discovery in emerging areas, such as bioinnovation, micro-nano technology, smart systems, energy and environmental sustainability.

The calibre of our research and its impact is respected around the world. McMaster faculty members consistently win national and international recognition for pushing the boundaries of discovery and exploring novel, ground-breaking technologies.

**GRADUATE PROGRAMS ARE OFFERED BY
EACH OF MCMASTER ENGINEERING'S SCHOOLS:**

School of Engineering and Applied Sciences.....page 7
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W Booth School of Engineering Practice and Technology.... page 23



Ali Emadi
Canada Excellence Research Chair
in Hybrid Powertrain
Professor, Electrical and Computer
Engineering and Mechanical Engineering

"We have students who can point out something they did for a car to make it safer, more reliable or efficient. You cannot place a value on this kind of achievement."

Ali Emadi is internationally recognized for his expertise in transportation electrification and smart mobility, but he didn't achieve this reputation alone. With the help of his research team, he is developing the next generation of smart energy systems and electrified and autonomous vehicles.

Accelerate your career with a McMaster Engineering graduate degree

McMaster Engineering graduate students pursue specialized knowledge; collaborate with industry and research organizations on real-world projects; and gain access to expertise, funding and state-of-the art facilities.

All graduate students participate in career planning sessions to develop career plans which are followed up on by their faculty advisors, with the option of receiving mentoring from industry partners.

Coop and Work Experience Option

All graduate students can participate in McMaster Engineering's optional co-op program adding valuable work experience to enhance their degree and deepen their learning. Master's students are expected to complete 8 months of co-op and PhD students are expected to complete 12 months of co-op. A mandatory preparatory course is part of the co-op option. Graduate students enrolled in the co-op option can complete a work term at any time of year with permission from their supervisor.

Professional Skills Development Portal

McMaster Engineering graduate students access both online and in-class professional development and career modules that educate them about the job market, facilitate students' readiness to enter these arenas post-graduation, and give them access to Masters/PhD specific job opportunities and events.

Industrial PhD

Master's graduates who are currently working full-time in industry can earn a doctoral degree while staying on the job through McMaster Engineering's Industrial PhD program. This flexible program allows students to conduct their research at labs in their workplaces, significantly reducing the time to completion for those balancing a career and studies.

Fostering Engineering Innovation

The Government of Canada and the Province of Ontario are investing \$43M, the single largest government investment in laboratories and research capacity expansion in McMaster's history. The funding is part of a massive \$75M project that will support the renovation and retrofit of existing labs in the Arthur Bourns Building, and the construction of a new innovation tower.

Fraunhofer Project Centre for Biomedical Engineering & Advanced Manufacturing

The \$33M Fraunhofer Project Centre for Biomedical Engineering and Advanced Manufacturing (BEAM) will provide interdisciplinary space for researchers to develop novel technologies for eye care, point-of-care medical devices and cancer treatments.



*Rendering of the innovation tower which is currently being constructed as part of the revitalization of the Arthur Bourns Building. Image courtesy of ZAS Architects + Interiors.



McMaster Engineering is the right choice



Reputation

McMaster University is consistently ranked among the top institutions in the world.



City

Located in the burgeoning city of Hamilton, Ontario, McMaster is located at the western end of Lake Ontario, 70 km from Toronto and 100 km from Niagara Falls. We are at the heart of Ontario's innovation corridor. Area attractions include the Waterfront Trail, the Bruce Trail and the Royal Botanical Gardens, as well as a vibrant restaurant and cultural scene.



Community (EGS)

The Engineering Graduate Society (EGS) provides opportunities for strong student leadership delivering new social activities and campus wide events including the annual METRIC Conference which brings together graduate students, postdoctoral fellows, professors and industrial alumni from various engineering fields to discuss cutting-edge innovations, trends and practical challenges encountered in STEM fields.



Campus

McMaster's main campus, located in the Westdale neighbourhood of Hamilton is comprised of 300 acres of scenic property at the western end of Lake Ontario.



Commercialization & Entrepreneurship

McMaster Engineering graduate students leverage the many support systems offered to McMaster student entrepreneurs to commercialize their innovations including key partners – McMaster Industry Liaison Office, The Forge, Innovation Factory, McMaster Innovation Park.



Money Matters

McMaster Engineering offers competitive funding to outstanding students and have increased remuneration for PhD candidates.



“I really got into my role [at ConocoPhillips]. I got to spend a sizeable amount of time there so I really got to understand what the company culture was about and what work life would mean to me.”

Oriana Vanderfleet
PhD candidate, Chemical Engineering

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Chemical Engineering

Degrees Offered: MASc, PhD

Entry Dates: September, January, May

Study Options: Full- or part-time for all degrees offered

McMaster houses one of the most distinguished and research-intensive chemical engineering departments in Canada. Four of the 20 chemical engineers selected by the Canadian Society for Chemical Engineering for making the greatest contributions to chemical engineering in Canada in the 20th century were professors at McMaster's Faculty of Engineering.

McMaster is engaged in leading edge chemical engineering research and has concentrated research groups that collaborate with international industrial sponsors including:

- Centre for Advanced Ophthalmic Materials (Insight)
- Centre for Advanced Polymer Processing & Design (CAPPA-D)
- Centre for Pulp and Paper Research
- Interfacial Technologies Group
- McMaster Advanced Control Consortium

Areas of Research

BIOMATERIALS AND BIOPROCESSING

Drug delivery, tissue engineering, biocompatible surfaces, bioseparations, membranes, bioreactors, pharmaceutical processing

POLYMER SCIENCE AND ENGINEERING

Polymer synthesis and characterization, polymer reaction engineering, polymer and particulate processing, paper chemistry, nanotechnology, interfacial engineering

PROCESS SYSTEMS ENGINEERING AND CONTROL

Process systems design, process control, optimization, supply chain planning and scheduling, process fault detection and recovery

MATERIALS AND PROCESS MODELING AND COMPUTATION

Molecular modeling, computational fluid dynamics, energy systems, alternative fuels/energy, wastewater treatment, life cycle analysis



Heather Sheardown
Canada Research Chair in Ophthalmic
Biomaterials and Drug Delivery
Professor, Chemical Engineering

“My students have energy, enthusiasm and they’re hungry. They want things to happen.”

Heather Sheardown has spent her career developing ocular health technologies and related drugs that will improve the quality of life for millions of people living with ocular conditions and vision loss. She says her research outcomes would not be possible without the contributions from her students. “My students have energy, enthusiasm and they’re hungry. They want things to happen.”



“I want to create job-ready employees for future jobs, not just for jobs that are available now.”

Flash floods. Blackouts. Data breaches. How can society better respond to disasters? Wael El-Dakhakhni believes the answer lies in mobilizing knowledge of multi-hazard and system-level vulnerability to create usable tools. El-Dakhakhni is currently working on tools that will help a wide range of stakeholders anticipate, and even prevent disasters from happening. He inspires his students to have similar engineering ambitions by helping them link their education to real societal challenges and by encouraging them to develop their interpersonal skills. “I want to create job-ready employees for future jobs, not just jobs that are available now.”

Wael El-Dakhakhni
Director, McMaster Institute for
Multi-hazard Systemic Risk Studies
(INTERFACE)
Professor, Civil Engineering

Civil Engineering

Degrees Offered: MEng, MASc, PhD

Entry Dates: September, January

Study Options: Full- or part-time for all degrees offered

Ranked as one of the top three civil engineering programs in Canada and top 30 worldwide, we are a vibrant multi-disciplinary research-intensive department focused on building healthier communities to create a brighter world. Our strong linkages with industry are evident by our six research chairs and strong record of successful application-based research funding. Our laboratory facilities allow us to conduct world-class research supported by multiple research centres, networks and institutes.

McMaster is engaged in leading edge research in the field of civil engineering and has concentrated research groups that collaborate with international industrial sponsors including:

- Centre for Effective Design of Structures
- McMaster Interface Institute
- McMaster Institute for Transportation and Logistics
- McMaster Water Network

Areas of Research

RESILIENT INFRASTRUCTURE SYSTEMS

Extreme natural and man-made hazards, risk assessment and performance/resilience based design, large-scale testing and hybrid simulation, multi-hazard hazard simulation and mitigation

SMARTER MOBILITY

Connected and autonomous vehicles; smart cities; cyber-physical systems for transportation; transit design, operation, and management; transportation safety; transportation data analytics

WATER SECURITY AND CLIMATE CHANGE

Flood simulation, prediction and risk under climate change, fate and transport of pathogens and heavy metals in ground water systems and impact on the environment and human health, flow of contaminated water in fractured rock systems, systemic risk of fracking on ground water aquifers

INTELLIGENT ENERGY SYSTEMS

Power grid simulation and optimization, building energy consumption and automation, systemic risk posed by and on energy networks, energy linkage to water systems, renewable energy; energy production resilience and sustainability under climate change



Bryanna Noade
MASc candidate, Civil Engineering

“The people here are just as nice as at home and I really appreciated that because it was my first time really picking up and moving really far from home. I felt very welcomed by all the students and staff.”

"I had two things in mind when it came to choosing a school: I wanted to study software engineering specifically, and I wanted my research to be practical."

Monika Jaskolka
PhD candidate, Software Engineering

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Computing & Software

Degrees offered: MEng, MSc, MAsC, PhD

Entry Dates: September

Study Options: Full- or part-time for all degrees offered

McMaster's Department of Computing and Software advances the field of computing through education and research. We focus on computing research problems that involve scientific theory, engineering practice, and the interface between the two. We seek to address society's need for better methods of developing information systems and dependable, safe, secure, high-quality software.

Our research advances state-of-the-art computer software and hardware design, theoretical foundations of computing, and systems development. Faculty members are engaged in cross-disciplinary research at the intersection of computer science and areas such as health science, social science, business and management, and other natural science and engineering disciplines.

- MEng in Computing and Software
- MSc in Computer Science
- MSc in eHealth
- MAsC in Software Engineering
- PhD in Software Engineering
- PhD in Computer Science

Areas of Research

COMPUTER SYSTEMS

HEALTH INFORMATICS AND BIOINFORMATICS

SCIENTIFIC COMPUTING AND OPTIMIZATION

SECURITY, PRIVACY, AND DATA ANALYTICS

SOFTWARE QUALITY

THEORY AND METHODOLOGIES OF COMPUTATION



Fei Chiang
Assistant Professor,
Computing and Software

"Making connections with industry gives students the opportunity to address industry challenges now."

Fei Chiang is building software tools to automate and improve data quality so that users can spend more time and resources on data analysis and decision-making. Chiang and her research group work with prominent industry partners such as IBM to improve their data quality. "Making connections with industry gives students the opportunity to address industry challenges now."

“There has to be a mentor who students can look up to – someone to meet with weekly, to show the little tricks of the profession. Someone who will lean over the equipment to show how it works.”

Natalia Nikolova believes in the power of mentorship. To help her students succeed, she makes sure to devote as much time as possible to each of them. “There has to be a mentor who students can look up to – someone to meet with weekly, to show the little tricks of the profession. Someone who will lean over the equipment to show how it works.” Using radar technology, Nikolova and her team are developing a scanner for early stage breast cancer detection and a fully automated, concealed weapon detection system.

Natalia K. Nikolova
Canada Research Chair in High-frequency Electromagnetics
Professor, Electrical and Computer Engineering



Electrical & Computer Engineering

Degrees offered: MAsC, MEng, PhD

Entry Dates: September, January, May

Study Options: Full- or part-time for all degrees offered

McMaster’s Electrical and Computer Engineering department is ranked as one of the best departments of electrical and computer engineering both nationally and internationally. Faculty members are regular award winners including the prestigious Premier Research Excellence Award (PREA), OCUFA teaching award, McMaster Students Union Teaching Award, Booker Gold Medal, and the Signal Processing Society Education Award.

McMaster’s Department of Electrical & Computer Engineering is home to The Centre for Research in Micro- and Nano-systems, a unique facility in North America offering fabrication, characterization and integration of different materials, components and devices at multiple length scales. For example, Nano-Bonding and –Interconnect System (NBIS) and Nanoimprinting Lithography System (NIL) provide fabrication and integration of nanometer scale structures and devices. Research using MNSL infrastructure spans from fundamental areas such as molecular interactions during bonding to applied relating to miniaturization of emerging systems for health and environmental applications.

Areas of Research

BIOMEDICAL TECHNOLOGIES
COMMUNICATION TECHNOLOGIES, SYSTEMS & NETWORKS
ELECTRIFIED & AUTONOMOUS TRANSPORTATION
ELECTROMAGNETICS & PHOTONICS
INTEGRATED, EMBEDDED AND INTERCONNECTED SYSTEMS
MICROELECTRONICS & VLSI
OPTIMIZATION, LEARNING & CONTROL
POWER ELECTRONICS & ELECTRIC MACHINES
SIGNAL, IMAGE & VIDEO PROCESSING



Mahsa Salmani
PhD candidate, Electrical and
Computer Engineering

“There is a wide range of career opportunities, especially for engineers in Ontario. Many of my friends are coming to Ontario to find careers here.”

“Every time I achieve a goal and get one step closer to a working device, I get a little motivation boost because I know that this could be a technology that could have real world applications.”

Simon McNamee
MEng candidate, Physics



SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Engineering Physics

Degrees Offered: MEng, MAsC, PhD

Entry Dates: September, January, May

Study Options: Full- or part-time for all degrees offered

Engineering Physics at McMaster is pushing the forefront of modern physics to better the world through technological advancement. We are solving the grand challenges of the future such as energy supply, human health, digital information and communications technology, and renewable energy.

Engineering Physics at McMaster is engaged in leading edge research in biomedical engineering, nuclear and energy systems engineering, nano- and micro-device engineering, and photonics engineering. Research in Engineering Physics includes:

- Centre for Emerging Device Technologies
- McMaster Nuclear Reactor
- McMaster's Biophotonics Facilities
- Biointerfaces Institute
- Centre for Advanced Nuclear Systems
- McMaster Intense Positron Beam Facility
- University Network of Excellence in Nuclear Engineering (UNENE)

Areas of Research

BIOMEDICAL ENGINEERING

Biosensors, biophotonics

NUCLEAR ENGINEERING AND ENERGY SYSTEMS

Intense positron beam used to probe defects in materials; investigation of irradiated materials from nuclear power reactors; nuclear safety analysis, nuclear fuel and waste management, nuclear physics

NANOTECHNOLOGY, NANO- AND MICRO-DEVICE ENGINEERING

Micro-electro-mechanical systems (MEMS), photovoltaics, organic electronics, optoelectronics, III-V materials and devices

PHOTONICS ENGINEERING

Silicon photonics, displays, laser applications, sensors, ultrafast lasers



Leyla Soleymani
Canada Research Chair in
Miniaturized Biomedical Devices
Associate Professor, Engineering Physics

“I hope that I can show them that I enjoy what I do and I can give that feeling to them – that this is fun and I’m doing it because I believe in it.”

Leyla Soleymani is developing biosensors, miniature devices that can be used at point of care to quickly and accurately diagnose certain types of cancer and infectious diseases. This low-cost technology will help improve healthcare services for people around the world. Soleymani says a key to her success is her passion for her research and she hopes to convey that passion to her students. “I hope that I can show them that I enjoy what I do and I can give that feeling to them – that this is fun and I’m doing it because I believe in it.”

“I want to showcase that we’re doing exciting research here and I want to show the many avenues you can pursue in a research career.”

Using high-powered microscopes, Kathryn Grandfield looks at how materials for joint replacement and dental implants attach to human tissue to create better quality devices that last longer inside the body. Grandfield credits her professors for helping to shape her future. She strives to do the same for her students. “I want to showcase that we’re doing exciting research here and I want to show the many avenues you can pursue in a research career.”

Kathryn Grandfield
Assistant Professor,
Materials Science and Engineering



Materials Science & Engineering

Degrees Offered: MSc, MAsC, PhD

Entry Dates: September, January, May

Study Options: Full- or part-time for all degrees offered

Building strategically on our diverse expertise in materials, in collaboration with local and global partners, the Department of Materials Science and Engineering here at McMaster University is internationally recognized as a destination of choice, where students, scholars, alumni and employers partner in a journey of learning, discovery and innovation.

McMaster is engaged in leading edge material science and engineering research and has concentrated research groups that collaborate with international industrial sponsors including:

- Canadian Centre for Electron Microscopy
- Steel Research Centre
- Centre for Automotive Materials and Corrosion

Areas of Research

STRUCTURAL MATERIALS PROCESSING AND PROPERTIES

High strength steels, aluminium alloys, magnesium alloys, casting, heat treating, thermomechanical processing, galvanizing, plastic deformation, fracture, fatigue, corrosion, multi-scale modelling

FUNCTIONAL MATERIALS

Electronic materials, magnetic materials, electrocatalysts, supercapacitors

NANOTECHNOLOGY AND NANO-SCALE MATERIAL SCIENCE

Energy materials (batteries and fuel cells), nanophotonics, 2-D materials, modelling, atomic-scale characterization

BIOMATERIALS

Osseointegration, bone applications in dentistry and orthopaedics, biomineralization



Shooka Mahboubi
PhD candidate, Materials
Science and Engineering

“The moment I arrived at McMaster, I realized everyone is so friendly and I didn’t feel like I was someone from outside. I felt that I belonged here and that this was the place I can live in and progress in my work.”

“The McMaster mentorship experience is more like a partnership. That’s why I chose Mac to pursue my graduate studies. Professors are excited with what you’re doing and they want to be a part of what you’re doing.”

Ryan Rogers
MAsc candidate, Mechanical Engineering

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Mechanical Engineering

Degrees Offered: MEng (ADMI), MAsc, PhD

Entry Dates: September, January, May

Study Options: Full- or part-time for all degrees offered

The Department of Mechanical Engineering is the second largest department in the Faculty of Engineering at McMaster University. The research funding per faculty member is amongst the highest in the country and the Department benefits from state of the art laboratories with established international reputations.

Our research is heavily supported by industry and is in areas of strategic interest including hybrid vehicles, energy and environment, sustainable energy, biomechanics, materials and manufacturing, MEMS and mechatronics. Our cluster of research groups include:

- Centre for Advanced Micro Electro Fluidics
- Computational Fluid Dynamics laboratory
- Flow-Induced Vibration and Aeroacoustics Laboratory
- Light Metal Casting Research Centre
- Machining Systems Laboratory
- McMaster Automotive Research Centre
- McMaster Manufacturing Research Institute
- McMaster Mechatronics Research Group
- Metal Forming Laboratory
- Micro-Machining Laboratory
- Robotics and Manufacturing Automation Research
- Thermal Management Research Laboratory
- Thermal Processing Laboratory

Areas of Research

BIOMECHANICS

Biomechanics of Musculoskeletal Systems, Bone Adaptation to Mechanical Stimuli & Injury, Surgical Robotics, Bone Fracture Limits & Injury Tolerance, Design of Artificial Joint Replacements, Surrogates for Biomechanical Research, Bio-Functional Interfaces, Biomaterials & Biosensors, Cardiovascular Mechanics, Medical Imaging

MANUFACTURING

Casting, Computer Aided Manufacturing, Electrical Discharge Machining, Grinding, Machining of Advanced Materials, Machining Processes and Systems, Materials Processing and Systems, Manufacturing Automation, Manufacturing Processes and Systems, Metal Forming, Cutting and Removal, Metallic and Non-Metallic Coatings for Advanced Steels, Process Modelling & Simulation, Robotics

MECHANICS & DESIGN

Automotive Applications, Computer aided design, Control Systems, Dynamics and Vibrations, Finite Element Analysis, Flow Induced Vibration and Noise, Hybrid Vehicles, Materials and Microstructural Engineering, Mechatronics, Microelectromechanical (MEMS) Devices, Product Design and Manufacturing, Robotics, Theoretical mechanics

THERMAL FLUID SCIENCES

Aeroacoustics, Combustion, Computational Fluid Dynamics, Flow Control, Turbulence, Heat Transfer, Microfluidics & Micro-fabrication, Modeling in Thermo-Fluid Systems, Multiphase Flow, Reactor Thermal Hydraulics, Thermal Processing of Materials



Stephen Veldhuis
Director, McMaster Manufacturing
Research Institute
Professor, Mechanical Engineering

“Being able to apply our knowledge and make improvements in industry is what we strive to do. Engaging students on improving productivity, helping a company earn new business and keeping jobs – this is a nice package of everything coming together.”

Having an impact on peoples’ lives is what drives Stephen Veldhuis’ research. Veldhuis’ research is focused on tribology, the study of friction and wear, which contributes to the development of high performance manufacturing solutions. “Being able to apply our knowledge and make improvements in industry is what we strive to do. Engaging students in improving productivity, helping a company earn new business and keeping jobs – is a nice package of everything coming together.”

“Being from an engineering background gives me the skills to be able to contribute to the ever-changing world of healthcare through innovation and unique problem solving.”

Mandakini Jain
MASc candidate, Biomedical Engineering

School of Biomedical Engineering

Degrees Offered: MASc, PhD, MD / PhD

Entry Dates: September, January, May

Study Options: Full- or part-time for all degrees offered

McMaster’s Faculty of Engineering and Faculty of Health Sciences have partnered to create a unique research and training program under the umbrella of the School of Biomedical Engineering.

The School provides a unique collaborative environment that leverages our existing expertise in medical sciences and engineering, and that links current and emerging areas of molecular, medical and bioengineering research. We invite you to join us in pushing the boundaries of discovery and improving the lives of future generations through the seamless merging of the human with the human-made.

Our goal is to leverage McMaster’s internationally recognized strengths and resources toward the development of new approaches in biomedical science and technology, through both fundamental and more goal oriented translational research programs.

McMaster’s School of Biomedical Engineering is home to various research centres including:

- Antimicrobial Research Centre
- Brockhouse Institute for Materials Research
- Centre for Emerging Device Technologies
- Centre for Minimal Access Surgery
- Juravinski Cancer Centre
- McMaster Institute for Applied Radiation Sciences
- McMaster Manufacturing Research Institute
- Thrombosis and Atherosclerosis Research Institute

Areas of Research

BIOMATERIALS AND DEVICES

Biomaterials and tissue engineering directed towards growth or regeneration of cells, tissues and organs. The technology includes development of biomaterials, implantable devices and sensors and other biologically compatible materials with applications in numerous medical devices and therapies.

IMAGING, SENSING AND DETECTION

Development and application of imaging technologies applicable to cells, tissues, organs and the brain for diagnostic and therapeutic purposes.

THERAPEUTICS

Research toward the development of novel drugs and drug delivery methods, including the development of biodegradable polymers and other materials for tissue engineering of cellular scaffold and release of signaling molecules.



Michael Noseworthy
Professor, Electrical and
Computer Engineering

“I know my students are ready to leave the nest when they start to teach me. When they teach me, they’re ready fly.”

Michael Noseworthy’s greatest reward is learning from his students. “I know my students are ready to leave the nest when they start to teach me. When they teach me, they’re ready fly.” Noseworthy and his research team are building new hardware and software to improve imaging technology. He uses a high-powered magnetic resonance imaging (MRI) scanner, one of only a few dozen in Canada, to have a more in-depth understanding of how the mind, brain and body work together to influence health and disease.

“The amount of diversity we have at W Booth is incredible. I’m one of three students from Canada so the different perspectives from all over the world is absolutely incredible.”

Christopher Boothe
Master of Engineering and Public Policy candidate,
W Booth School of Engineering
Practice and Technology



W Booth School of Engineering Practice & Technology

Degrees Offered: MEng Design, MEPP, MTEI, MEEI, MEME

Entry Dates: Varies by degree

Study Options: Full-time and part-time options available for each program of study

The W Booth School develops innovative leaders and creative problem solvers with a focus on creating sustainable solutions for a rapidly changing world. Advance your career with one of our interdisciplinary professional Master’s degrees. Our innovative graduate programs will broaden your technical perspective and develop your project management and communication skills, positing you to become a leader in your field.

MASTER OF ENGINEERING DESIGN

- creating value in the public or private sector organizations using design-based thinking

MASTER OF ENGINEERING PUBLIC POLICY

- graduates are integrative problem solvers, and equipped to find solutions that can balance competing societal needs

MASTER OF ENGINEERING ENTREPRENEURSHIP & INNOVATION / MASTER OF TECHNOLOGY ENTREPRENEURSHIP & INNOVATION

- students launch their tech start-up and earn a Master’s degree in a globally recognized, award winning program

MASTER OF ENGINEERING – MANUFACTURING ENGINEERING

- students learn to create, regulate, protect and improve networked, ‘smarter’ manufacturing systems

Areas of Specialization

BUSINESS & GOVERNMENT

Engineering management, technology & society, entrepreneurship, innovation, project management, quality assurance, leadership, engineering laws & ethics

ENGINEERING DESIGN

Process industries, automotive engineering, leadership, sustainable community infrastructure

HEALTH TECHNOLOGY

Industrial engineering, biomedical engineering, genetics & DNA analysis, drug development & manufacturing, assistive medical technology

INDUSTRY 4.0

Manufacturing (including food processing and pharmaceuticals), design, automation & smart systems, automotive, industrial engineering, process automation, bioinformatics, software systems, programming, networking

SUSTAINABLE INFRASTRUCTURE

Energy & power, environment, civil engineering infrastructure, public policy, transportation, green engineering, water quality & preservation, contamination management, environmental resources



Lotfi Belkhir
Associate Professor,
Entrepreneurship and Innovation,
W Booth School of Engineering
Practice and Technology

“I provide insight, raise questions, and offer options but the final decision always rests with the students. That’s how you build leaders.”

Lotfi Belkhir knows what it takes to lead, build and grow a successful start up. As founder and CEO of Kirtas Technologies, a company that launched the world’s first and fastest robotic book scanner, he shares his entrepreneurial experience with budding innovators at the W Booth School. “I provide insight, raise questions, and offer options but the final decision always rests with the students. That’s how you build leaders.”



**Apply
Today!**

Step 1

PREPARE YOUR APPLICATION

Gather required documents such as official transcripts, academic references, language proficiency examination scores, statement of interest. Refer to McMaster's Graduate Academic calendar for details.

Step 2

APPLY ONLINE

Apply through McMaster's Faculty of Graduate Studies online application system.

Step 3

CHECK YOUR APPLICATION STATUS

Login to your McMaster Mosaic account to check your application status at anytime.

Step 4

RECEIVED AN OFFER OF ADMISSION?

Congratulations! We hope you will join us.

Respond to your offer through your Mosaic portal.

Contact us

Email: thinkeng@mcmaster.ca

Phone: 905-525-9140 ext. 22588

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For the most current information please download this
document from the Faculty of Engineering website or
refer to the Graduate Academic Calendar.*

ENGINEERING

