



MASTER OF ENGINEERING (M. ENG)

ACADEMIC STRUCTURE

1.01 Can you tell me something about the Faculty of Engineering at the University of Windsor?

The Faculty of Engineering includes the Departments of Civil & Environmental (CEE), Electrical & Computer (ECE), Industrial & Manufacturing Systems (IMSE), and Mechanical, Automotive & Materials Engineering (MAME). All of these departments have programs leading to degrees at the Baccalaureate (BASc), Masters (MASc and M. Eng.) and Doctoral (PhD) level.

We are the first Faculty in Canada to offer programs in Automotive Engineering and the City of Windsor is Canada's Automotive Manufacturing Centre. With our northern neighbour, Detroit, Michigan, less than two kilometres (1.2 miles) away on the other side of the Detroit River, approximately half of the world's automobiles are built in this area.

Although we excel in Automotive Engineering, it has to be remembered that "Automotive" is very much a multi-disciplinary subject encompassing not only engineering and science, but also the social sciences, human kinetics, management, law and health sciences. The University of Windsor is the host institution for the new Canadian national Auto21TM Network of Centres of Excellence.

Located in the Great Lakes Region between Lake Erie and Lake Huron on the shores of the Detroit River means that we are also very interested in the environment. Thus, not only do we have thriving Environmental Engineering programs but our academic research staff have interests and expertise in clean water and clean air sciences and technologies. Many are associated with the University's Great Lakes Institute for Environmental Research (GLIER). Academic staff in all Departments work in research groups and teams on a number of environmental issues including air pollution, alternative fuels and energy conversion and auto-parts recycling.

Chairs and Research Centres provide the focuses for many of our research and educational activities. We enjoy strong partnerships with many industries but particularly with Chrysler, Ford Motor Company and General Motors. Ford sponsors research into light metal casting, powertrain, noise and vehicle harshness. Chrysler sponsors research in mechanical design and alternative fuels. A similar research partnership, Tribology Centre, has been established with General Motors.

The Faculty's Industrial Research Chairs (IRC) are the result of partnerships with industrial sponsors (Chrysler, Ford, General Motors), the Natural Science and Engineering Council of Canada (NSERC) and the University of Windsor. These positions are held by researchers of international reputation and together with excellent graduate students, research engineers, technologists and administrative staff are involved in leading edge research and development.

The unique University of Windsor/Chrysler partnership is evident at the Automotive Research Development Centre (ARDC) which employs over 150 research engineers and provides placements and work experiences for our co-op students, facilities for our academic staff and graduate students. ARDC is located in a purpose built facility on an off-campus site. On campus the newly constructed Centre for Automotive Research and Education (CARE) provides facilities for undergraduate, graduate and professional courses, graduate research and joint student projects with St. Clair College of Applied Arts and Technology.

The Research Centres for Integrated Microsystems (RCIM), Integrated Manufacturing Systems (IMS) and Fluid Dynamics (FDRI) provide international standard facilities for academic staff and students in Electronic, Industrial, Manufacturing and Mechanical Engineering.

The over 160,000 sq.ft. of facilities provided by CARE and ADRC will help to provide new students and staff with the standard of learning environment expected from a premier engineering school.

With the continued help of our industrial and government (provincial and federal) partners, the University, our Alumni, the local community, our staff, students, and university colleagues - we are on an exciting journey - come and join us!

1.02 Who is the Master of Engineering program for?

The goal of the M.Eng. degree program is to provide students with the opportunity to extend the understanding of engineering principles involved in specific disciplines beyond the coverage possible in an undergraduate program, and to enhance their grasp of the application of these principles to the solution of complex, practical problems.

It is suitable for professional engineers seeking to expand and extend their knowledge and

skill-sets for work in the public and private sectors. It may also suit professionals from other disciplines such as environmental science who may wish to build more foundation in engineering-based courses.

For students already with a Bachelor of Engineering from abroad, completing the M.Eng. at Windsor provides an excellent opportunity to engage the Canadian environment for a future job and life in Canada. The M.Eng. gives you Canadian qualifications, Canadian exposure and Canadian experience. It's a great fit for someone looking for a one-year intensive pathway into careers in Canada, and around the world.

For those seeking an academic career, the University offers Master of Applied Science (MA. SC) programs with a significant research component that are more suitable.

1.03 Do M. Eng graduates qualify for advance standing towards Professional Engineering (P.Eng.) status?

Yes. The P.Eng. process is independent of the University of Windsor. Upon completion of your Master's of Engineering degree you will apply to the Professional Engineers Ontario (PEO) for membership with all your undergraduate transcripts. You will need four years of acceptable and verifiable professional engineering experience. Remember this is required whether students graduate in Canada or internationally. Normally, the Master of Engineering degree will be worth a one-year advance credit against the P. Eng requirements.

1.04 What programs are available?

There are seven.

The Faculty of Engineering offers the following M.Eng. programs on a full- time basis:

- (1) Mechanical Engineering
- (2) Mechanical Engineering (Automotive Engineering)
- (3) Civil Engineering
- (4) Electrical Engineering
- (5) Industrial Engineering
- (6) Environmental Engineering
- (7) Engineering Materials

1.05 How do the courses work?

The M.Eng. consists of a total of 8 (eight) graduate level courses (equivalent to a minimum of 24 credits). The distribution of these courses will be as follows:

- 1) A minimum of 6 (six) courses, equivalent to 18 credits from the Faculty of Engineering, with a

minimum of 4 (four) courses, equivalent to 12 credits in the specific program.

2) No more than 2 (two) courses, equivalent to 6 credits, from any graduate program within the university.

Any deviations from the above requires the approval of the Faculty of Engineering and the programs involved.

One of the 4 courses from the specific program may have one or two short projects (case studies) requiring literature research, report writing and presentations. Each student in the program should obtain approval from the Program's MEng Coordinator/Department Head regarding the planned program of study.

1.06 What courses are involved?

Typical courses in the M.Eng. program include:

Finite Element Method	Turbulent Flow
Theory of Elasticity and Plasticity	Thermal Systems
Design Advanced Structural Steel Design	Open Channel
Flow Hydrology	Clean Engine Technology
Digital Signal Processing	Manufacturing Systems Simulation
Image Processing	Automotive Applications for NVH Evaluation

Students will normally complete the M.Eng. program over one year (including summer).

1.07 What are the course descriptions?

Some of the Master of Engineering course descriptions are as follows:

92-540. Applied Finite Element Analysis

This course focuses on the modeling aspects of the finite element method using well known commercial FEA software packages such as DYNA, IDEAS and ANSYS. A variety of stress analysis problems in two and three dimensions are studied and the accuracy of the simulations are assessed through comparison with available theoretical and experimental results. Both static and dynamic situations are covered.

92-503. Turbulent Flow

General turbulence theories, wall turbulence and free turbulence.

92-506. Thermal Systems Design

Advanced systems design requiring the application of economics, heat transfer, simulation and optimization.

1.08 What are the intakes or session dates?

Students may enrol in the program beginning in the fall semester, winter semester or summer session.

1.09 How can I see a list of current faculty members?

For Civil/Environmental, see:

<http://www.uwindsor.ca/units/eng/faculty2003.nsf/Civil>

For Electrical/Computer, see:

<http://www.uwindsor.ca/Electrical> (and click the left menu People and then Faculty & Staff.)

For Industrial/Manufacturing, see:

www.uwindsor.ca/units/eng-industrial/IMSE.nsf

For Mechanical/Automotive/Materials:

<http://www.uwindsor.ca/units/eng/Faculty2003.nsf/mech>

1.10 What is the difference between the Master of Engineering (Automotive) and the Master of Engineering (Mechanical)?

To some extent, this will depend on the choice of courses the student makes in the Mechanical program. One should note that the Automotive program requires 6 mandatory Automotive courses where as the Mechanical program is flexible.

A student in the Mechanical program may take one Automotive course and the remaining four in Mechanical, three in other departments and two outside of engineering.

Also, the Automotive program costs approximately six thousand dollars more than the Mechanical program.

1.11 Can I get into a thesis-stream program?

Successful MEng students, those who excel in their program, maybe eligible to take one year research degree after completing the MEng program. The tuition for the research degree (MASc) is normally covered by a professor offering the student teaching and research grants.

FINANCES

2.01 What is the cost ?

In Canadian funds, the Mechanical – Automotive program total tuition is Twenty eight Thousand Dollars (\$28,000), and for the other 6 programs the total tuition is Twenty-two Thousand Dollars (\$22,000).

2.02 Are there any costs for books?

Yes. You will be required to buy your books and pay other fees that all students pay relating to health insurance (about \$600) dental, and prescription plans (about \$100), and student service fees (normally a couple of hundred dollars).

2.03 When is tuition paid?

Fees are due and payable before the commencement of regular term classes. Fees may be paid on a semester by semester basis.

ADMISSION REQUIREMENTS

3.01 What are the entry requirements?

A candidate for the M.Eng. programs shall hold the degree of Bachelor of Applied Science from the University of Windsor or an equivalent degree in Engineering or Applied Science from another university.

Possession of the minimum requirements does not automatically ensure acceptance into the program.

3.02 Is there any GRE examination result required?

No.

3.03 Is there an English requirement?

All applicants whose native language is not English are required to satisfy the University of Windsor's English proficiency requirement. Yes, English proficiency is required, approximately at a level of TOEFL 550 (220 on computer-based system). This may be demonstrated through TOEFL or IELTS (6.5) or through personal interview, or proof of English medium study.

*Upon assessment of English skills of Master of Engineering (Automotive) applicants, the Admission Committee will require the candidate either to arrive in July to participate in the English Training, or they will receive an exemption and simply begin classes in September.

3.04 Can students get advance standing?

No.

3.05 I have a degree in a related field – can I gain admission?

Applicants with degrees in related fields may be considered but may require strengthening of their background in Engineering.

3.06 Is employment experience required?

No. However, applicants who can demonstrate relevant post-Baccalaureate

engineering employment experience will be given preference during the admission process.

APPLICATION PROCESS

4.01 What is the application process?

Our application form must be filled out, clearly and completely. You are also required to ask two individuals (also known as Referees) to provide an academic reference on your behalf using the Confidential Form. The application fee must be made, along with the supply of all academic documents for programs completed from high school and beyond. This includes degree, diploma and certificate programs.

The application package can be deposited with our local office, or if there is no local office, it may be sent to us via courier or via scanned attachments or fax (with the hard copies to follow by regular mail). If payment cannot be made by credit card or to our local office, then the money order must be sent to us in Canada.

Please contact intl@uwindsor.ca for guidance.

4.02 What is the application fee?

The application fee for all Master of Engineering programs, except Automotive Engineering, is Eighty-Five Canadian Dollars (\$85) or Eighty-Five US Dollars (\$85). The application fee for Automotive Engineering is Seventy Canadian Dollars (\$70) or Seventy US Dollars (\$70).

4.03 Is there an application deadline?

Applications are determined on a rolling basis. There is no deadline but programs are expected to fill up. We advise you to make your application as soon as possible. To check if the program is still taking applications, please contact intl@uwindsor.ca.

4.04 How long does the application process take?

The process will normally take two to four weeks for a decision to be made.

4.05 How do you communicate the decision?

We will let you know by email or telephone. We will then arrange for an admission package to be sent to you via courier.

4.06 What do I need to send?

- (1) the completed application form,
- (2) the application fees are \$85 CDN (for all Engineering programs, except Automotive), \$70 CDN for Automotive Engineering
- (3) all academic transcripts from any university education you have attended,
- (4) two academic reference letters,
- (5) proof of English proficiency,
- (6) all high-school or secondary school transcripts.

4.07 What if I have insufficient English proficiency. Is there any help for me?

Yes, the University of Windsor offers an [English Language Improvement Program](#). It is offered through the Academic Writing Centre. Please contact intl@uwindsor.ca for more information.

CAREER and WORK AUTHORIZATIONS

5.01 Am I eligible to apply for a Work Permit in Canada after I complete the program?

Foreign students are eligible to apply for a post-graduation work permit for employment in their field of study. Students must obtain written confirmation (transcript, letter, etc.) indicating that they have met the requirements of their program. Once students have that documentation, they can apply for a work permit. The most up-to-date official information is available at the Government of

Canada website: www.cic.gc.ca/english/study/institutions/guide-dir.asp

After completion of the M. Eng candidates are eligible for a one year work permit.

5.02 Am I eligible to apply for permanent resident status in Canada? Absolutely! A Canadian master's level degree will be a decided asset. You may apply at any time if you already have one year of work experience.