COLLEGE OF ENGINEERING
THE UNIVERSITY OF TOLEDO

Master of Science in Engineering with a Concentration in Energy Engineering

A Practice-Oriented Program

A MESSAGE FROM THE DEAN OF ENGINEERING

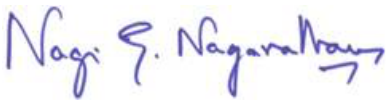
It is with great enthusiasm that I share with you that the College of Engineering at The University of Toledo, in collaboration with its Energy Engineering Task Force, has developed a practice-oriented energy engineering program. Our College of Engineering now offers a Master of Science in Engineering with a concentration in energy engineering. This new program is geared towards practicing professionals and traditional students alike.

Earning this master's degree will involve as few as 8 or 10 courses. Graduates from this program can develop expertise in many complementary areas such as public policy, energy management, energy economics and finance, and energy consulting. This highly customizable program is not just for engineering graduates with technical portfolios. With flexibility and options for coursework in law, business, and finance, the concentration in energy engineering is ideal for professionals at companies that generate and distribute energy, as well as anyone seeking to manage energy portfolios in a variety of businesses and industries.

The energy field is vital to all aspects of society and presents ever-increasing challenges as well as new opportunities. The Master of Science in Engineering program with a concentration in energy engineering provides graduates with the tools to meet these challenges and take advantage of these new opportunities.

I invite you to explore this exciting opportunity further. Please feel free to contact us at EnergyEngineering@eng.utoledo.edu.

Sincerely,



Nagi G. Naganathan, Ph.D., ASME Fellow
Professor & Dean of Engineering

College of Engineering
Office of the Dean • Mail Stop 310 • 2801 W. Bancroft St. • Toledo, Ohio 43606-3390
419.530.8000 Phone • 419.530.8006 Fax • www.eng.utoledo.edu

DEGREE REQUIREMENTS:

The Master of Science in engineering program with a concentration in energy engineering is comprised of 30 credit hours:

Coursework Option: 30 hours of approved graduate-level course work (10 courses)

Project Option: 24 hours of approved graduate-level course work (8 courses) and a six-hour, practice-oriented project in consultation with their advisor, for a total of 30 credit hours

Additionally, the Master of Science in engineering program has three options for specialization:

Option 1 Power generation and distribution
Option 2 Energy utilization and management
Option 3 Advanced energy systems

Students are expected to complete the following requirements:

1) **MIME 5980 Energy sources, applications and economics** 3 credit hours

2) At least one of these law/business/management courses:
   - **LAWM 5000 Law and the Legal System** 3 credit hours
   - **BLAW 6100 Business Government and Society** 3 credit hours – This is an online course
   - **MGMT 6100 Leading Through Ethical Decision Making** 3 credit hours

3) At least one of the following two engineering courses:
   - **CVLE 5690 Sustainability Engineering** 3 credit hours - This is an online course
   - **MIME 5980 Sustainability Analysis and Design** 3 credit hours – This is an online course

4) Students in option 1 must also take the following engineering course:
   - **Power Systems Operation** 3 credit hours

5) Students may meet their coursework requirements by completing the required courses listed above as well as any of the approved elective courses in consultation with their academic advisor. Elective courses may be taken on

campus or via distance learning on the internet. Several graduate offerings from the College of Engineering, the College of Business and Innovation, and the College of Law are available for selection.

6) Students following the coursework only option may take up to 6 hours of approved independent study towards the 30 credit hours requirement.

Students will find it possible to complete the degree requirements in five semesters or less, depending on academic backgrounds and course loads.

If students choose the project option, they may complete the course requirements in four semesters by taking two recommended courses per semester and completing the project in one or two semesters. The six-credit (6 hrs.) project for fulfillment of the project option may be accomplished in coordination with the student's employer utilizing skills learned in this program. Students should consult their advisor regarding this option.

In order to be awarded the Master of Science in engineering degree, the student must have at least a B average (minimum GPA of 3.0/4.0) for all graduate course credits in the program as well as for their entire graduate transcript. Only credit hours obtained with a letter grade of "C" or higher, or an "S" grade for the limited number of classes offered on a satisfactory or unsatisfactory basis, will fulfill degree requirements.

ADMISSION REQUIREMENTS

To be admitted to the Master of Science in engineering program, applicants must have a bachelor's degree in engineering, engineering technology or in a closely related field (e.g., one of the mathematical, physical or biological sciences). Admissions are made on an individual basis and take into account the applicant's previous academic record, the intended area of study, and the capacity of the College of Engineering.

Applicants should have a minimum grade point average (GPA) of 2.7 in previous undergraduate work from appropriately accredited academic institutions or from an academic institution with high academic standards deemed appropriate and acceptable by the College of Engineering and the College of Graduate Studies. Applicants having a GPA less than 2.7 who otherwise demonstrate potential for graduate study may be admitted to the master's program on a provisional basis at the discretion of the College. Students with an undergraduate GPA below 2.7 must provide GRE scores. Information on the GRE is available on the GRE Web site: *http://www.gre.org*.

Students who graduated with a bachelor's degree from the University of Toledo do not need to submit an official transcript. Students who did not graduate from the University of Toledo must contact the office of the registrar at their undergraduate institution to arrange for transmission of their undergraduate transcripts. All students from non-English speaking countries must submit scores for the test of English as a Foreign Language (TOEFL). The minimum acceptable score for the TOEFL is 213 (for computer-based test) or 80 (for internet-based test).

Students entering the program will be required to have at least: calculus, through ordinary differential equations (3 semesters), physics (2 semesters) and chemistry and/or engineering materials (1 semester) and any three out of the following six courses: statics, dynamics, electronics, electric circuits, fluid mechanics and thermodynamics. Students lacking one or more of the above courses must take the necessary courses before entering the program.

Students can apply for special student status and take up to nine credit hours of graduate classes, which may be applied to their graduate degree program. Students with special status can be admitted as regular graduate students at a later date.

APPLICATION PROCESS

Information regarding the Master of Science in Engineering with a concentration in Energy Engineering program is available at *eng.utoledo.edu/coe/grad_studies.*

COMPLETE APPLICATION CONSISTS OF:

- Completed application form
- Transcripts from each institution attended showing degree obtained*. Students whose undergraduate GPA was below 2.7 must register and take the GRE. Information on the GRE is available on the GRE website at *gre.org*
- Two letters of professional recommendation
- A $45 application fee in the form of a check or money order made payable to University of Toledo. This fee is not refundable.

* Students who graduated with a bachelor's degree from the University of Toledo do not need to submit official transcripts.

FOR MORE INFORMATION CONTACT:

Abdollah Afjeh, Ph.D., P.E., ASME Fellow
Professor and Chair
Department of Mechanical, Industrial and Manufacturing Engineering
College of Engineering
The University of Toledo
MS 312
2801 W. Bancroft Street
Toledo, Ohio 43606
419.530.8210 (phone) 419.530.8206 (fax)

or

Mohamed Samir Hefzy, Ph.D., P.E., ASME Fellow
Professor and Associate Dean of Graduate Studies and Research Administration
College of Engineering
The University of Toledo
MS 310
2801 W. Bancroft Street
Toledo, Ohio 43606
419.530.6086 (phone) 419.530.7392 (fax)