More Information

Financial Support

The M.S. program provides financial support to qualified graduate students in three levels: tuition waivers, half-time assistantships and full-time assistantships. Both the half-time assistantship and full-time assistantship include tuition waviers. The assistantships consist of teaching assistantships and research assistantships.

Admissions

Admission to the M.S. program requires a baccalaureate degree in mechanical engineering or related areas such as physics, mathematical sciences, chemistry, computer science, and engineering disciplines. Application can be completed online. Application materials include transcripts of B.S. degree, GRE score, reference letters and TOEFL score (for international students only).

Integrated B.S./M.S. Sequence Option

NIU undergraduate majors in mechanical engineering can be admitted to the integrated B.S./M.S. sequence after finishing 90 semester hours with a GPA of at least 3.00. These students must complete all undergraduate required courses, including 9 semester hours of technical electives. Only those technical electives or required courses taken for graduate credit during the student's final undergraduate term will be credited toward the M.S. program, up to a maximum of 9 credit hours.

Seniors with good academic standing in the B.S. program can apply for the M.S. program. Upon approval of the Graduate School, the applicants are given graduate student status and are eligible to apply for teaching or research assistantships, which carry a full tuition waiver and monthly stipend. Up to three undergraduate technical elective courses can be counted toward the graduate program.

Contact

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College of Engineering and
Engineering Technology

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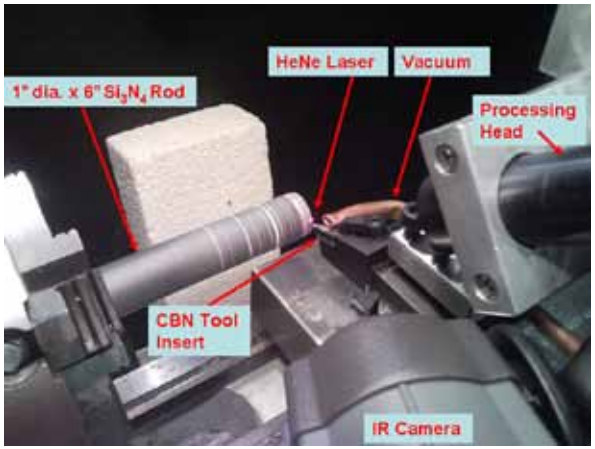

Research of laser-assisted machining of ceramics.

Graduate School

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Northern Illinois University

Graduate Study
Mechanical Engineering

www.niu.edu/me

About the Program

The Department of Mechanical Engineering offers a program leading to the Master of Science in mechanical engineering (M.S.). The M.S. program represents an extension of in-depth study for the sub-disciplines of the mechanical engineering profession including applied mechanics, dynamic systems and control, materials and manufacturing and thermal-fluid engineering. The in-depth study compliments and enhances the technical electives offered to undergraduate students at the senior level.

The M.S. program is designed to provide an in-depth understanding of the basic physical phenomena involved in mechanical systems and components, to provide students with the ability to use modern computers and laboratory tools and techniques in the analysis and design of mechanical systems and components, and to develop the student's creativity in defining and solving advanced mechanical engineering problems. The following are program outcomes of the M.S. in mechanical engineering.

Demonstration of control of a rear-steering bike.

M.S. Program Educational Objectives

The M.S. Program prepares graduate students for successful careers in advanced mechanical engineering fields by providing them with a progressive and high-quality graduate education, and to develop and expand faculty research for providing research opportunities to students and professional services to local, regional and international communities. Thus, we expect our graduates to attain the following objectives by the time and within a few years of graduation:

1. Become successful professionals.
2. Contribute to their professional fields and assume leadership roles in industry or research organizations.
3. Assume professional responsibilities and exhibit effective communication skills.
4. Collaborate with faculty and conduct research and scholarly activities at the forefront of the field and engage in professional societies by publishing professional papers and attend and present papers at professional conferences.

Why Mechanical Engineering at NIU?

The NIU Mechanical Engineering program is well received by local, national and international industries. Its excellent faculty members are dedicated teachers and have been recognized through many awards. The faculty members are very active in funded research and the M.S. program has many assistantships available for qualified students. Students have many opportunities to work in industry as summer interns.

1. Professors: Most professors are active in funded research and they are committed to quality teaching.
2. Financial support: Majority of graduate students receive financial support in the form of tuition waiver and graduate assistantships.
3. Industry employment opportunities: Many graduate students work as interns in industry in summer and find industrial jobs in local and national industries including Caterpillar, John Deere, Hamilton-Sundstrand, Navistar, Ingersoll, and Excelon.
4. Opportunities for Ph.D. programs: Many students continue with Ph.D. programs at NIU or in other top universities including University of Illinois, Georgia Institute of Technology, Purdue University and Northwestern University.
5. Location: NIU is in DeKalb, a small and quiet town where the living costs are low and study environment is good. The campus is close to Chicago's O'Hare International Airport (about one hour driving distance), Fermi National Laboratory (30 minutes driving distance), Argonne National Laboratory (one hour driving distance) and hundreds of companies in Chicago and Rockford, a manufacturing city (40 minutes to one hour driving distance). It is convenient to be involved with culture, research, economic and industrial activities in Chicago and Rockford areas.

Program Options

The M.S. program has the following three options:

- Thesis option: The thesis option requires 24 credit hours of courses and 6 credit hours of thesis. Thesis option is recommended for all full time students. Financial support is available for graduate students in thesis option.
- Project option: The project option requires 27 credit hours of courses and 3 credit hours of project.
- Course option: The course option requires 33 credit hours of courses.

Research Areas of Concentration

The department has scheduled courses to support research and thesis work in the following four concentrated areas:

- Applied mechanics
- Computer-aided-design and computer-aided-manufacturing
- Design of thermal systems
- Vibrations and control system design