

Department of Mechanical Engineering
101 Engineering and Computing Center
St. Cloud State University
720 Fourth Avenue South
St. Cloud, MN 56301-4498
320.308.5654
Toll free 888.668.7477
Dr. Kenneth Miller, Graduate Coordinator
msme@stcloudstate.edu
www.stcloudstate.edu/~mme

School of Graduate Studies
121 Administrative Services Building
St. Cloud State University
720 Fourth Avenue South
St. Cloud, MN 56301-4498
Office: 320.308.2113
Toll free: 1.800.369.4260
Fax: 320.308.5371
graduatestudies@stcloudstate.edu
www.stcloudstate.edu/graduatestudies

Office of Scholarships and Financial Aid
106 Administrative Services Building
St. Cloud State University
720 Fourth Avenue South
St. Cloud, MN 56301-4498
320.308.2047
finaid@stcloudstate.edu
www.stcloudstate.edu/financialaid

Office of Residential Life
Carol Hall
St. Cloud State University
720 Fourth Avenue South
St. Cloud, MN 56301-4498
320.308.2166
reslife@stcloudstate.edu
www.stcloudstate.edu/~reslife

Center for International Studies
Lawrence Hall
St. Cloud State University
720 Fourth Avenue South
St. Cloud, MN 56301-4498
320.308.4287
intstudy@stcloudstate.edu
www.stcloudstate.edu/internationalstudies

Graduate Record Examination (GRE) and TOEFL
Educational Testing Service
Available on the SCSU campus
Call: 320.308.5456
Visit:
www.gre.org
www.toefl.org

ST. CLOUD STATE UNIVERSITY
A tradition of excellence and opportunity

SCHOOL OF GRADUATE STUDIES

MECHANICAL ENGINEERING

Master of Science

St. Cloud State University could be a great academic match for you!

We are a state-sponsored comprehensive university, which means a quality education with affordable tuition. We offer almost 50 graduate programs. Our medium-sized campus allows you to experience dedicated faculty, a mentoring relationship with your advisor and state-of-the-art facilities to support your academic pursuits. Our mission is to prepare graduates with the professional skills needed for Minnesota, the U.S. and the global marketplace. This means SCSU's graduate programs meet your personal needs along with your professional goals.

The Campus

St. Cloud State University was established in 1869 and is the largest university in the Minnesota State University & College System. SCSU has a student body of 16,000 full- and part-time students, 700 faculty members, and more than 80,000 alumni. St. Cloud State University serves a large regional area along with a diverse international population.

The Community

The city of St. Cloud is nestled along the Mississippi River 60 miles northwest of the Minneapolis-St. Paul metro area. St. Cloud is home to 90,000 people and serves as a commercial hub for over 250,000 people. Residents of St. Cloud enjoy access to ample shopping, recreational areas, the arts, dining and affordable living.



Master's degrees lead to professional growth.

Current employment trends indicate that a master's degree gives graduates a decided edge in their careers. Often, a master's degree is the difference between having a job and having a career.

Consider the following:

- The average salary of those with a master's degree is 32 percent higher than the average salary of those with an undergraduate degree.*
- Employment opportunities for persons with master's degrees continue to grow with our evolving job market.
- Graduate students are recognized as those who understand the need to keep pace with changing workplace demands.
- Graduate school provides an excellent opportunity for networking.
- Master's programs provide a stepping stone to doctoral programs.

Program Overview

The Master of Science in Mechanical Engineering provides graduate students with an advanced education in mechanical engineering by preparing them for a lifetime of continued learning, high technical competency, leadership development, and professionalism in their chosen careers. This is consistent with the mission of the Department of Mechanical and Manufacturing Engineering and the mission of the University to foster a tradition of excellence and opportunity. We are dedicated to fulfilling this mission by:

- Preparing students for technical competency and productive careers by offering a modern curriculum that emphasizes practical aspects of mechanical and manufacturing engineering integrated with new technologies;
- Promoting research and development, collaboration with industry, and enhancement of the engineering curriculum;
- Providing an equitable environment that enables students to pursue their advanced engi-

*Source: U.S. Bureau of the Census, Current Population Reports, series P70-51.

- neering education, to develop professionalism and leadership, and to encourage ethical conduct;
- Promoting continuing study of new technologies and encouraging lifelong learning and communication with other professionals.

Program Requirements

- Admission to the program requires an undergraduate degree in mechanical engineering, manufacturing engineering, or closely related field from an accredited school.
- Applicants to the program whose undergraduate engineering degree is not in mechanical engineering or manufacturing engineering may be required to take additional mechanical and manufacturing engineering coursework.
- A GPA of at least 3.0 or higher on a 4.0 scale is required. An applicant's undergraduate GPA is closely reviewed, especially for scholarship in the undergraduate engineering and math core.
- All applicants must take the Graduate Record Exam (GRE). A minimum score of 680 quantitative and a minimum of 1000 verbal/quantitative combined is required.
- When all official application materials are received, the department will review the admission file for an admission recommendation. An admission or denial letter will be sent within two weeks of the department review of the materials.

Facilities

Graduate students in the Department of Mechanical and Manufacturing Engineering are privileged to use the following laboratories run by the department:

- Materials Characterization Lab
- Thermal Sciences lab
- Manufacturing Processes Lab
- CAD lab
- Robotic and Automation lab
- CAM and Rapid Prototyping lab

Career Opportunities

Graduates of the Master of Science in Mechanical Engineering usually hold positions of increased responsibility in industry or pursue the Ph.D. in Mechanical Engineering or related engineering fields.

Program Length

A minimum of 30 to 32 credits are required to complete the M.S. in Mechanical Engineering. The program is designed to allow full-time students to complete the program in three semesters, taking 12 credits per semester. Part-time students may complete the program in seven semesters, taking six credits per semester. All credits (including transfer credits) used in meeting the requirements of a graduate program must be completed within seven years prior to the awarding of the degree.

Transfer Credits

A maximum of 10 semester credits of graduate work completed at other accredited colleges and universities, or extension credit earned from this university, may be considered for application with approval of the School of Graduate Studies and major advisor. See the transfer policy section of the Graduate Bulletin for more information.

Application Process

When applying for a graduate program, the School of Graduate Studies serves as a liaison between the applicant and the graduate program. Application materials can be obtained from the School of Graduate Studies website: www.stcloudstate.edu/grads. Completed application materials should be returned to the School of Graduate Studies. Once all application materials are received, the application materials will be forwarded to the master's program for an admission recommendation.

Application Requirements

In order to consider an applicant for admission, the School of Graduate Studies will need:

U.S. Students

- Completed admission application
- Application fee of \$35.00
- Official transcripts from previous universities
- Official GRE scores
- Three recommendation forms

International Students

- Completed international admission application
- Application fee of \$35.00 U.S. dollars
- Official transcripts from previous universities
- Official GRE scores
- Official TOEFL or IELTS or MELAB scores
- Three recommendation forms
- Financial form and documentation

Graduate Assistantships What are they?

Graduate assistantships (GA) are academically related employment appointments reserved for students who hold a bachelor's degree and who have been formally admitted to a graduate program. SCSU offers three basic types of assistantships:

- Program assistants – duties are limited to an individual academic program.
- Research assistants – duties include engaging in research activities connected to a department or professor.
- Teaching assistants – duties include the instruction of students under the general supervision of a professor.

Graduate assistantships are available during the regular academic year with a limited number available during the summer term.

Who is eligible?

International students and U.S. citizens are eligible to apply. A student must be:

- Fully admitted to the School of Graduate Studies
- Registered as a full-time student each term of the appointment

Benefits

Graduate assistantship stipends (salary) for the 2004-2005 academic year is \$8,200 for 20 hours/week.

In addition to the stipend, both full- and part-time graduate assistants are eligible for tuition assistance. Tuition assistance waives approximately one-half of the student's graduate tuition cost per semester. Tuition for a maximum of six graduate credits may be waived in a semester.

Resident rate privilege

All graduate assistants, both international and U.S. citizens and residents, qualify for in-state tuition rates.

International students

Upon receipt of a departmental letter of GA appointment, an international student can list the stipend as income on their financial certification forms.

Graduate Faculty and Research Areas

Dr. Bantwal Baliga, Ph.D. 1999, PE, Swinburne, Australia; manufacturing systems, quality engineering

Dr. Andrew Bekkala, Ph.D. 1990, PE, Michigan Technological University; controls and robotics, machine design

Dr. Jeongmin Byan, Ph.D. 2003, Purdue University; manufacturing processes, CAD/CAM/CAPP, metrology

Dr. Steven Covey, Ph.D. 1993, PE, University of Cincinnati; materials and processes, finite element analysis

Dr. Kenneth Miller, Ph.D. 2000, PE, University of South Carolina at Columbia; thermal science, heat transfer, solid mechanics

Dr. Warren Yu, Ph.D. 1988, Washington State University; machine design, CAD, CAM