EXPECTATIONS OF INCOMING STUDENTS

Applicants must meet the minimum South Dakota Mines graduate education requirements. In addition, they will be evaluated against the following criteria:

- A baccalaureate degree in mechanical engineering or a closely-related field;
- An undergraduate grade point average of 3.0 or greater;
- Scores on the GRE;
- And, for those applicants whose native language is not English, their TOEFL score.

GRADUATION REQUIREMENTS

Students entering the program must submit a program of study and choose a major professor by mid-term of the second semester. Students pursuing the research focused thesis option will also be required to form a graduate committee to guide and evaluate their research.

Graduation with an ME MS requires 30 credit hours beyond the BS degree. For more information, visit sdsmt.edu/GraduateEducation/.

ABOUT RAPID CITY

South Dakota’s second-largest city (pop. over 70,000) offers a quality of life you will love, with restaurants, entertainment outlets and shopping in Historic Downtown. Just 20 minutes from Mount Rushmore and the Black Hills, Rapid City is a perfect location for students interested in enjoying the outdoors.

ABOUT THE BLACK HILLS

The name “Black Hills” is a translation of the Lakota Paha Sápa or “hills that are black.” One of the most historic and beautiful places in the country, the million-plus acre Black Hills National Forest and surrounding area feature Mount Rushmore, Crazy Horse Memorial, caves, canyons, wildlife, and other natural attractions. You can enjoy snowboarding, hiking, rock climbing, kayaking, mountain biking, fishing and more.

CONTACT

605.394.2401
Mechanical.Engineering@sdsmt.edu

APPLICATIONS

sdsmt.edu/GraduateEducation/

GRADUATE RESEARCH ASSISTANTSHIPS

Funding opportunities, in the form of both teaching and research assistantships, are available for exceptional students.

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ME MS PROGRAM

The mechanical engineering (ME) MS program at South Dakota School of Mines and Technology allows students to reach the highest level of academic achievement. The mission of the mechanical engineering graduate program is to provide students with advanced learning in the areas of thermo-fluid sciences, mechanical systems, or manufacturing/controls. The primary goals of the program are to develop the scholastic ability, independent creativity, and professional competence of the student to a higher level than is possible in an undergraduate program. Graduates have the knowledge and skills to make a difference by leading teams to solve the problems that challenge our world. Students who have a chance to work with faculty involved in research at the forefront of their fields and to publish in acclaimed journals. Students undertaking education in the MS in ME program are expected to:

- expand their knowledge and understanding of methods and approaches to advancing knowledge in the basic areas of mechanical engineering
- formulate solutions to problems related to thermo-fluid sciences, mechanical systems, or manufacturing/controls
- be able to conduct basic or applied research and development in mechanical engineering
- become an engineer who will serve their profession and community as valuable contributing leaders

TWO DEGREE PATHS: Research & Courses or Courses Only

The MS ME degree may be pursued in one of two degree paths: thesis (involving courses and research) or non-thesis (involving courses only). Each of these paths requires 30 credits of graduate coursework. The thesis path requires 6 credits of thesis research coursework, the preparation of a master’s thesis, and the successful defense of the research to the student’s graduate committee. The non-thesis option requires 30 credits of graduate coursework, which may include 3 or more credits of graduate project work. The 30 credits include the required core course ME 673 Applied Engineering Analysis I.

Why choose the Department of Mechanical Engineering’s MS program at South Dakota Mines?

I chose to pursue my master’s degree after working in industry for 4 years. SD Mines provided a great undergraduate experience where I gained a deep understanding of many of the fundamentals. I chose to continue my education at the same institution with the expectation that the master’s program would offer a deeper dive.

Matthew Bunge, ME MS student

Continuing my education at SD Mines was an easy choice for me. Through the accelerated master’s program, I was able to take 12 credits of graduate-level work as a senior; this is an excellent program as it allows for undergraduates to get a taste of upper-level classes and develop a feel for what is involved in obtaining a master’s degree while simultaneously earning credit for both the B.S. and M.S. degrees. Because of this opportunity, I have significant flexibility with my class, research, and workloads as I transition into the M.S. program full-time.

Daniel Bue, ME MS student

What career paths have opened up for you due to your MS studies?

Completing the master’s degree will open more technically advanced positions within my company. It leads to an instant promotion and will help guide my career down the path that I find most interesting.

Matthew Bunge, ME MS student

FACULTY

The faculty members in the Department of Mechanical Engineering at South Dakota Mines are dedicated to providing the highest quality academic guidance. Below are current ME faculty members associated with the MS program.

Dr. Pierre Larochelle  
Department Head  
experimental/theoretical robotics

Dr. Duane Abata  
thermoosciences, energy storage, combustion

Dr. Jason Ask  
experimental solid mechanics

Dr. Cassandra Birrenkott  
solid mechanics of polymers

Dr. Prasoon Diwakar  
plasma physics and aerosol measurements

Dr. Aaron Lalley  
advanced manufacturing and VMC machining

Dr. Albert Romkes  
numerical solid mechanics and finite element methods

Dr. Khosro Shahbazi  
computational fluid dynamics and two-phase flows

Dr. Andrea Surovek  
solid/structural mechanics and biomimicry

Dr. Weibing Xing  
electrochemical energy storage

Dr. Daniel Rederth  
magnetic quantum physics

Dr. Nicholas Bruno  
mechanical thermodynamics of shape memory alloys

Dr. Jason Ask  
experimental solid mechanics

Dr. Prasoon Dinakar  
plasma physics and aerosol measurements

Dr. Cassandra Birrenkott  
solid mechanics of polymers