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 Pahá Sápa or “hills that are black.” One of the most historic and beautiful places in the country, the million-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.

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.

DEPARTMENT OF MECHANICAL ENGINEERING
MS Program

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.

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.

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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
experimental/ theoretical robotics
Department Head

Dr. Xuanhong An
flow control

Dr. Cassandra Birrenkott
solid mechanics of polymers

Dr. Prasoon Diwakar
plasma physics and aerosol measurements

Dr. Aaron Lalley
advanced manufacturing and VMC machining

Dr. Micah Lande
design education, design thinking, engineering education

Dr. Peter McKeon
structural health monitoring

Dr. Daniel Rederth
magnetic quantum physics

Dr. Albert Romkes
computational fluid dynamics and compressible/two-phase flows

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

I chose to pursue the Department of Mechanical Engineering’s MS program based on my undergraduate experience at South Dakota Mines. I got to know many professors very well and knew that they would be an excellent source of knowledge and support throughout my MS degree. The professors at Mines truly care about their students and invest the time and energy needed for students to thrive.

Kaytie Barkley, ME MS student

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.

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

I have had many opportunities to further my career path because of my MS degree. While working on my degree, I was encouraged by my advisors to apply to several fellowships – one of which resulted in receiving a research grant with NASA. Furthermore, the company I accepted a position with advanced me to a tier 2 engineering position rather than an entry level position. This jump started my career significantly after taking only 2 years to complete my MS degree.

Kaytie Barkley, ME MS student

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 will 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

Dr. Jason Ash
experimental solid mechanics

Dr. Joseph John Thalabitter
advanced manufacturing and VMC machining

Dr. Fan Zhang
high performance computing, high performance networks

Dr. Prasen DeWitt
plasma physics and aerosol measurements

Dr. Joseph John Thalabitter
features at limits of continuum field theory

Dr. Weibing Xing
electrochemical energy storage

Dr. Miha Londe
design education, design thinking, engineering education

Dr. Khesra Shihabadi
computational fluid dynamics and compressible/two-phase flows

Dr. Jason Ash
experimental solid mechanics

Dr. Joseph John Thalabitter
advanced manufacturing and VMC machining

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