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-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.

APPLICATIONS
graded.sdsmt.edu

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

CONTACT
605.394.2401
Mechanical.Engineering@sdsmt.edu

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 M.S. requires 30 credit hours beyond the B.S. degree. For more information, visit sdsmt.edu/GraduateEducation.

APPLICATIONS
graded.sdsmt.edu

EXPECTATIONS OF INCOMING STUDENTS
Applicants must meet the minimum SD 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.

THEMECHANICAL ENGINEERING
DEPARTMENT OF
MS Program

DEPARTMENT OF MECHANICAL ENGINEERING
MS Program

Research & Teaching Opportunities
605.394.2401
sdsmt.edu/ME
ME M.S. PROGRAM

The mechanical engineering (ME) M.S. 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. Undergraduate education in the M.S. in ME program is 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

ME M.S. PROGRAM

Why choose the Department of Mechanical Engineering’s M.S. program at SD 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 Bunga, ME M.S. student

Two Degree Paths: Research & Courses or Courses Only

The M.S. 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 non-thesis option requires 30 credits of graduate coursework, which may include 3 or more credits of graduate project work. The non-thesis option includes the required core course ME 673 Applied Engineering Analysis I.

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 Bunga, ME M.S. student

FACULTY

The faculty members in the Department of Mechanical Engineering at SD Mines are dedicated to providing the highest quality academic guidance. Below are current ME faculty members associated with the M.S. program:

Dr. Pierre Larochelle
experimental/theoretical robotics
Department Head

Dr. Duane Abata
thermosciences, 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. Hadi Fekrmandi
mechatronics and robotics

Dr. Aaron Lalley
advanced manufacturing and VMC machining

Dr. Nickolaus Bruno
mechanics/thermodynamics of shape memory alloys

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

Dr. Albert Renken
electrochemical energy storage

Dr. Nicholas Bruno
mechanical/thermodynamics of shape memory alloys

Dr. Jason Ask
experimental/solid mechanics

Dr. Cassandra Birrenkott
solid mechanics of polymers

Dr. Karim Muci
experimental/numerical solid mechanics

Dr. Andrea Surovec
solid/structural mechanics and biomimicry

Dr. Daniel Rederth
magnetic quantum physics

Dr. Peter McKean
structural health monitoring

Dr. Weibing Xing
computational fluid dynamics and compressible/two-phase flows

Dr. Andrea Surovec
solid/structural mechanics and biomimicry

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

Dr. Weibing Xing
electrochemical energy storage

Dr. Nicholas Bruno
mechanical/thermodynamics of shape memory alloys

Dr. Jason Ask
experimental/solid mechanics

Dr. Cassandra Birrenkott
solid mechanics of polymers

Dr. Karim Muci
experimental/numerical solid mechanics

Dr. Andrea Surovec
solid/structural mechanics and biomimicry

Dr. Daniel Rederth
magnetic quantum physics

Dr. Weibing Xing
electrochemical energy storage