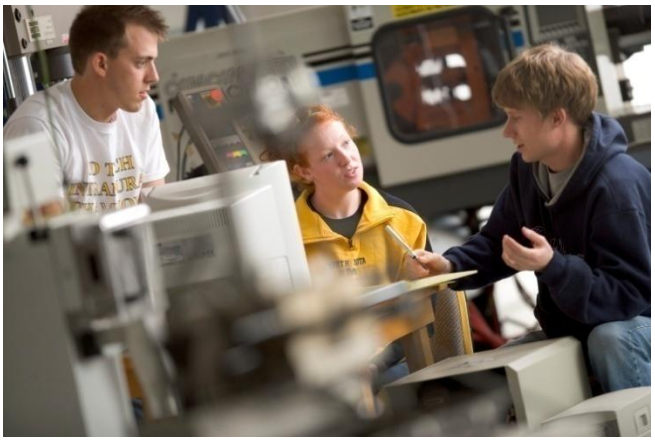
Materials Engineering and Science M.S.



Contact Information

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Steering Committee

Steering Committee members are from the Departments of Materials and Metallurgical Engineering, Physics, and Chemistry.

Faculty

Professors Boyles, Foygel, Howard, Douglas Fuerstenau Professor Kellar, and Petukhov; Associate Professors Corey, Cross, Heglund, Medlin, and Sobolev; Assistant Professors Fong, Meyer, West and Zhu; Emeritus Professor Stone, Distinguished Professor Emeritus Han.

Master of Science in Materials Engineering and Science

This interdisciplinary degree program works in concert with other colleges and the Ph.D. in materials engineering and science (Ph.D./MES).

The M.S./MES degree offers an education in the broad area of materials. Students pursuing this degree will expand their knowledge and understanding of the science and technology of materials synthesis, behavior, and production. Graduates of the program formulate solutions to materials problems through the use of multi-disciplinary approaches made possible with a broad background in basic materials science and engineering coupled with an area of specialization.

Two options are available in this degree program: one option involves a thesis component and the other option involves course work only. In the thesis option, 24 hours of course work and a minimum 6 credit hours of thesis research are required. With the second option, 32 hours of course work must be taken. In the latter option however, the students are required to undertake a project under the supervision of a faculty member. Because students graduating with this degree are expected to have a broad-based fundamental knowledge in both materials engineering and materials science, every student is required to take the following core courses.

MES 601 Fundamentals of Materials Engineering (4 cr.hr.)
MES 603 Condensed Matter Physics (4 cr.hr.)
MES 604 Chemistry of Materials (4 cr.hr.)

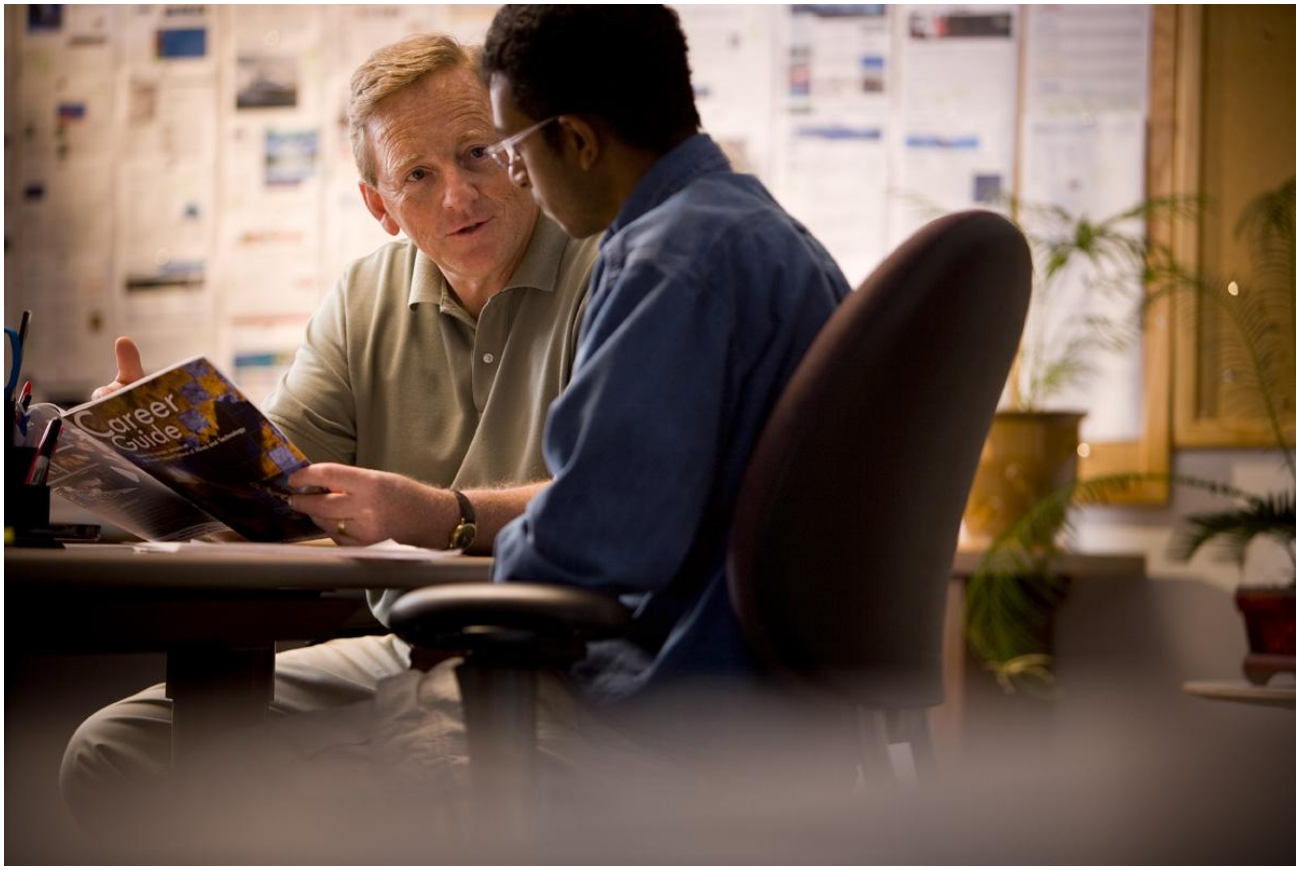
In addition MES 790 Seminar (1 cr.hr.), is a required course.

Areas of research currently carried out include inorganic, organic, and biological behavior/synthesis/treatments of materials, polymer chemistry, solid state physics, interfacial chemistry/physics, thermal, magnetic and transport properties of semiconductors, superconductors, metals and alloys, dielectric and composite materials, recovery and processing of minerals/materials/scrap, process simulation and optimization, thermodynamics of various materials, corrosion and corrosion inhibition, strengthening mechanisms, deformation induced transformation plasticity, artificial intelligence, and behavior/properties/synthesis of composites.

Undergraduate Degrees That Prepare Students for the M.S. MES Program

The breadth of the field of materials

engineering and science is such that graduates from any of the following disciplines should be prepared for graduate study in the M.S. MES program: chemistry, physics, metallurgical engineering, chemical engineering, materials engineering, mechanical engineering, civil engineering, and electrical engineering. Students with baccalaureate degrees in other disciplines may gain admission to the program but may require remedial undergraduate work prior to beginning their graduate course work.



Mines Matters: The South Dakota School of Mines and Technology Career Center assists students with sharpening interview skills, finding internships, and by hosting a Career Fair in fall and spring of each year. Ninety-eight percent of 2007-08 graduates are working in their career field or are pursuing graduate/professional degrees and are working for 124 employers in 28 states.