The advanced manufacturing interdisciplinary program prepares graduates and professional students to fill knowledge and skills gaps in this diverse and growing field and to lead their companies to competitive advantage. This cutting-edge program develops leaders in a field that is influencing a range of industries, including aerospace, biomedical, defense and energy, among others. Students benefit from the expertise of Mines faculty across academic departments and from the capabilities of industry- and materials-based R&D centers on campus. An additive manufacturing teaching lab dedicated to the program houses state-of-the-art industrial equipment and student-built open-platform systems.

DEGREE OPTIONS

- **Master of Science (non-thesis):** 30 credit hours, comprised of three core courses (2 selected by the student), program-approved electives and an option to replace 6 credit hours with project-based work via internship.
- **Certificate:** 12 credit hours comprised of 4 core courses, initially being offered on campus with a plan for online offerings to accommodate working professionals outside the immediate geographic area.
RESEARCH AREAS

Mechanical engineering
- Automation
- Manufacturing
- Modeling and characterization

Metallurgical and materials engineering
- Metals and ceramics
- Process-structure-property relationships

Applied mathematics and statistics
- Statistics and statistical modeling

Physics
- Functional materials manufacturing
- Optics for manufacturing

Computer science
- Machine learning
- Big data

Electrical engineering
- Data compression
- Sensing and signal processing

CORE COURSES

This program highlights design, materials and data aspects of advanced manufacturing with an emphasis on additive manufacturing of structural materials.

Introduction to Additive Manufacturing
Data-Driven Materials Manufacturing
Design for Additive Manufacturing
Materials for Additive Manufacturing

PROGRAM ADMISSION REQUIREMENTS

- A bachelor’s degree—or recognized equivalent—from an accredited institution. A grade-point average of 3.0 or better on a 4.0 scale is required.
- Graduate Record Examination (GRE) with quantitative reasoning section score of 160 or higher is required. For students coming from a business or economics background, a Graduate Management Admission Test (GMAT) score of 650 or higher is acceptable.

DOMESTIC APPLICATION DEADLINE: JULY 1

WITH ADDITIONAL QUESTIONS, CONTACT:
Office of Graduate Admissions
303-273-3247 | grad-app@mines.edu

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