

## Materials Science

### At UW-Eau Claire

Every day we come into contact with hundreds of manufactured objects that are essential to modern life: vehicles, clothes, machines in our homes and offices, sport and leisure equipment, computers and phones, and medical technology. Everything we see and use is made from materials derived from the earth: metals, polymers, ceramics, semiconductors and composites. Materials Science majors study structure, properties and behavior of all materials, develop processes to manufacture useful products from them, and research environmentally friendly materials.

### Fast-growing industry

Materials are evolving faster today than any time in history, enabling scientists and engineers to improve the performance of existing products and to develop innovative technologies that will enhance every aspect of our lives. Materials Science has become a key discipline in the competitive global economy and is recognized as one of the technical disciplines with the most exciting career opportunities.

### Great facilities

Students have the opportunity to use excellent on-campus state-of-the-art materials science facilities including instrumentation housed in the Materials Science Center. Instrumentation includes: a scanning Auger nanoprobe, a transmission electron microscope, a scanning electron microscope, an x-ray photoelectron spectrometer, a scanning tunneling electron microscope, atomic force microscopes, a high resolution inductively coupled plasma mass spectrometer, x-ray diffractometer, x-ray fluorescence spectrometer and a molecular beam



epitaxial growth chamber to name a few!

### Research opportunities

Students have summer and academic year research opportunities at UW-Eau Claire and other locations across the United States.

### Great faculty

Our outstanding faculty are proud of

the individual attention they give their students. You'll learn in small class settings and get lots of one-on-one attention from professors who inspire learning and truly want you to succeed. Faculty draw from several areas of expertise, including, chemistry, physics, materials science, and have experience in polymer engineering, metallurgy, industry and working with super conductors.

*"The dedicated faculty in the Materials Science Department has encouraged me to explore my interests in the classroom and research lab. The hands-on experience with the advanced instrumentation has given me the skills to succeed after graduation."*

— Elizabeth



### Our graduates

Typical positions held by materials science graduates include materials science engineer, technical journalism, forensic science, technical sales and marketing, research and develop-

ment, design and manufacture, quality assurance, production management; continued education at the graduate level.

### Places our grads go:

• Graduate student, Washington State University, Pullman, WA

- Lab Analyst-3M, Card Materials Business, Maplewood, MN
- Materials Scientist, Fiberstar Bio, Eau Claire, WI
- GMP Scientist, Pharmaceutical Product Development, Inc., Madison, WI

## Majors

Materials Science  
Comprehensive major (requires no minor) with a choice of 7 emphases:

- Nanoscience
- Physics of Materials
- Chemistry of Materials
- Entrepreneurship
- Mathematics of Materials
- Applied Materials
- Geomaterials
- Biomaterials
- Liberal Arts

## Suggested freshman curriculum

Intro to Nanoscience and Materials Science  
Precalculus and Calculus I  
Chemical Principles or General Chemistry I and II  
University Physics 1  
Social Science/Humanities Elective  
University writing requirement— depending on placement exam.  
For test-out options, see uwec.edu/Blugoldseminar/testout.  
Wellness or Physical Activity

## note:

### Unusual and unique

The field of materials science and engineering is the study of "condensed matter" (that is, solids and liquids), and how that understanding can be applied to fabricating devices and structures of utility. A relatively young discipline, materials science is an outgrowth of two traditional areas: the study of matter (and its structure-property relationship) that originated in chemistry and physics and developments in various "materials" engineering fields (notably, microelectronics, metallurgy, and plastics).

The major is designed to give students a strong foundation in fundamental sciences and mathematics. The absence of engineering courses in a materials science major is unusual and integrating it into a liberal arts and sciences degree is unique. The structure of the major is deliberately interdisciplinary and broadly defined, consistent with a liberal education approach.

[www.uwec.edu/msci](http://www.uwec.edu/msci)

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### MATERIALS SCIENCE

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