

Aerospace Engineering



GET READY
TO SOAR.



Whether you dream about building solar-powered planes, designing nanosatellites or putting the first person on Mars, this program is the perfect launchpad for your career. As an aerospace engineering major, you'll quickly discover that the sky isn't the limit as you explore new ways to solve complex problems. «



Quick Facts

\$130,720

MEDIAN ANNUAL WAGE
FOR AEROSPACE
ENGINEERS IN 2023

561

STUDENTS ENROLLED
IN FALL 2024

39

FULL-TIME FACULTY IN
THE DEPARTMENT

42,000

SQ/FT OF TEACHING
AND RESEARCH
LAB SPACE



What will I learn?

As an aerospace engineering major, you'll start by building a solid foundation with classes and labs in science and math, including chemistry, physics and calculus. As you move on to specific aerospace engineering courses, you'll learn more about materials, fluid mechanics, design theory and related topics. Yes, it's rocket science, but you'll still have time for a few electives outside of your major.

What can I do with my degree?

At UB, our aerospace engineering alumni have helped improve efficiency for the Federal Aviation Administration, tested aerodynamics of the F-18 and Stealth Bomber, developed power-saving components for NASA, and overseen hundreds of engineers around the world. As an aerospace engineer, you may choose to specialize in aircraft, satellites, rockets, space vehicles, space stations or other applications. Many engineers help develop new materials and systems, while others focus on specific devices, instruments and other components.

Why study aerospace at UB?

- The Buffalo-Niagara region has a rich aerospace and aviation history. Aerospace engineers from Western New York helped bring Armstrong and Aldrin back from the moon!
- Our region is home to major companies like Calspan, CUBRC, Moog, and Lockheed-Martin.
- UB has the only system-focused, dedicated data and information fusion institute in the United States and one of only two in the world. Its research helps better understand space junk, develops navigation for UAVs, and tracks and prevents space-based threats.
- You can double major in Aerospace and Mechanical Engineering and complete your bachelor's in 4.5 years.
- Our School of Engineering and Applied Sciences offers nine minors, including minors in Manufacturing and Robotics.



SEAS241030

Learn more and apply at:

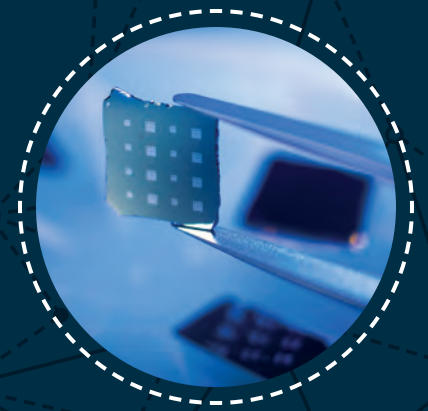
engineering.buffalo.edu



University at Buffalo

Department of Mechanical
and Aerospace Engineering
School of Engineering and Applied Sciences

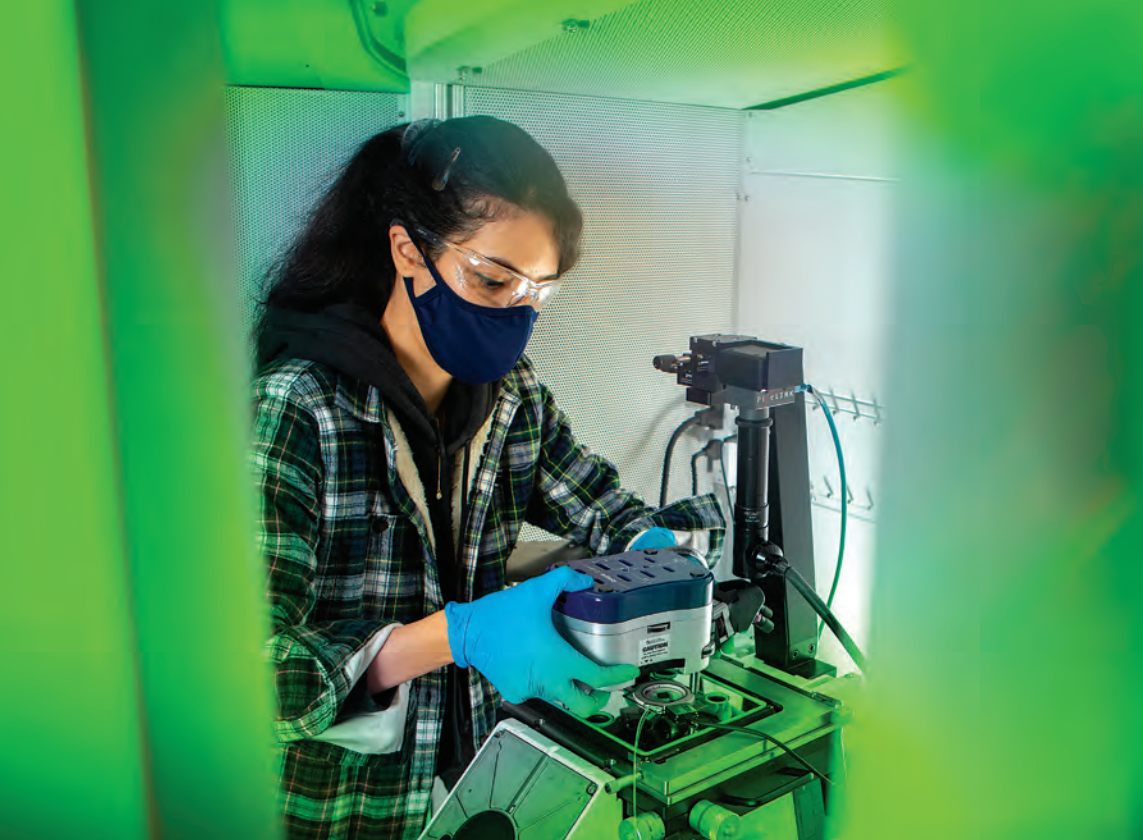
Material Science and Engineering



THE NEW BUILDING BLOCKS.



Your clothes. Your water bottle. The screen in your pocket. They're all made from materials. Now imagine if you could make these materials stronger, safer and more sustainable. Whether you want to design longer-lasting batteries, more comfortable contact lenses, or solar panels that can be made without toxic materials, this is where you start. «



Quick Facts

19

FULL-TIME FACULTY
IN THE DEPARTMENT

2:1

FACULTY-TO-STUDENT
RATIO IN FALL 2024

>300%

PROJECTED JOB GROWTH
IN MATERIALS SCIENCE
AND AI-DRIVEN MATERIAL
DEVELOPMENT

\$106,153

MEDIAN ANNUAL
WAGE FOR MATERIAL
SCIENTISTS IN 2023



What will I learn?

Most students start with classes and labs in physics, calculus and chemistry. As you get into your junior and senior years, you'll typically take more courses focused on thermodynamics, kinetics, properties of materials and methods for characterizing materials. This is a data-intensive program—the first of its kind in the United States—which means you'll also learn how to use data science, machine learning and statistics to speed up the process of designing and developing materials.

What can I do with my degree?

Materials are everywhere, which means you'll find career opportunities in a wide variety of industries and fields. From research and teaching to working at a start-up or government agency, here are just a few of the things you can do:

- Develop hydrogels that can help wounds heal faster after surgery.
- Design longer-lasting, more affordable batteries for electric vehicles and household storage.
- Improve the accuracy of biosensor devices like glucose monitors.
- Create tools that let researchers study the shape of molecules in real time.
- Use machine learning to quickly review journals and gather insights about safer chemical manufacturing processes.

Why study material science and engineering at UB?

- The Department of Materials Design and Innovation (MDI) at UB is the first department in the nation conceived and established entirely for training a new generation of scientists and engineers in the methods of data driven materials discovery and design.
- Materials Design and Innovation is committed to accelerating science-based solutions to solve pressing societal problems such as climate change and environmental sustainability.
- Gain experience collaboratively with top researchers of the School of Engineering and Applied Sciences and the College of Arts and Sciences to tackle big challenges
- Here, Material Science and Engineering majors can learn the core concepts of materials science in an interdisciplinary environment while building a solid foundation in informatics, which is something you can't do anywhere else.



SEAS241030

Learn more and apply at:

engineering.buffalo.edu



University at Buffalo

Department of Materials
Design and Innovation