Your Future at Illinois Tech

Cutting-Edge Programs, Smart People, Cool Research

MATERIALS SCIENCE AND ENGINEERING

Materials engineers are producing new and better materials that are revolutionizing the way we work and live.

Armour College of Engineering at Illinois Tech has a more than 129-year legacy of educating engineering innovators. Our accredited Materials Science and Engineering program offers a lab-intensive degree that will prepare you to excel in a wide range of industries that require knowledge of materials development and optimization, processing, and selection. Attending an accredited institution is a requirement for licensure—an essential for professional success.

Illinois Tech students and faculty look at the world through a different lens—and are working on projects that will impact cities and communities across the globe. Whether developing better energy materials for fuel cells or producing smart materials behind advanced sensors, our materials engineers are shaping innovations that are changing the world for the better.

MATERIALS SCIENCE AND ENGINEERING (MSE) AT ILLINOIS TECH

Materials engineers produce new and better materials that will revolutionize our work and lives. As a materials engineer you could be working on:

- Energy materials for solar cells, fuel cells, or batteries
- Electronic materials for computer chips, integrated circuits, or cell phones
- Structural materials for airplanes or sports equipment
- Smart materials for sensors, actuators, or microphones
- Biological materials for prosthetic bones or joints
- Optical materials for high-speed Internet signal transmission

RESEARCH—EVEN AS AN UNDERGRAD!

Our MSE faculty conduct cutting-edge research focusing on materials processing, crystal growth, energy storage, mechanical properties, and alloy development—and there are countless opportunities for undergraduates to participate.

Professor Aleksandar Ostrogorsky was recently awarded a grant to prepare six crystal growth experiments to be conducted aboard the International Space Station. The goal is to find a technique for producing high-purity, low-defect semiconductor and scintillator crystals that can lead to better and less-expensive detectors of nuclear radiation.

CUTTING-EDGE FACILITIES

As a student in the MSE program, you will use some of the finest facilities in the world for your lab courses and other projects. These include everything from a battery fabrication station to scanning electron microscopes and X-ray diffractometers to 3-D additive manufacturing machines and a range of testing devices.

SCHOLARSHIPS—JUST FOR MSE STUDENTS

In addition to competitive scholarship opportunities for all students at Illinois Tech, our MSE department offers its own Finkl Undergraduate Scholarships. There also are additional MSE undergraduate fellowship and scholarship opportunities through ASM International (the world’s largest association of metals-centric materials scientists and engineers) and Material Advantage (a national MSE student program).

EXPERIENCE IT: MSE AT ILLINOIS TECH

Illinois Tech’s MSE program has offered B.S., M.S., M.E., and Ph.D. degrees for more than 60 years, and our graduates are working as engineers, managers, researchers, academics, and even presidents at large and small companies and government organizations.

You'll find our grads at companies you may recognize—Boeing, Caterpillar, Microsoft, U.S. Steel, GE, Ford, and many others—and at leading research laboratories including Argonne National Lab, Fermilab, and Oak Ridge National Laboratory. Our students have continued their graduate studies at universities including Northwestern, Carnegie Mellon, Penn State, Ohio State, Illinois Tech, Purdue, the University of Florida, and other top institutions.

Maximize Your Education

Illinois Tech’s accelerated master’s degree programs allow you to receive both your bachelor’s and master’s degrees in as few as five years.

- B.S. and M.A.S. in Materials Science and Engineering
- B.S. in Materials Science and Engineering/ M.A.S. in Mechanical Engineering
- B.S. in Materials Science and Engineering/ M.A.S. in Aerospace Engineering

Dual major programs include B.S. in Materials Science and Engineering/ B.S. in Aerospace Engineering, as well as B.S. in Materials Science and Engineering/ B.S. in Mechanical Engineering.
LEARN TO INNOVATE IN IPROS

In Illinois Tech’s signature Interprofessional Projects (IPRO) Program, you’ll work with students from various majors to solve real-world problems. Recent MSE-oriented IPROs include:

- Tungsten carbide-cobalt nanomaterial research and industry application studies
- Airchitecture, an inhabitable flying platform
- Automotive systems innovation, including adaptive-cycle hybrid vehicles
- A low-tech system for desalinating water utilizing greenhouses, solar ponds, and geothermal cooling
- Auto engines as combined heat+power systems
- Fabrication and commercialization of high-power Li-ion batteries

Distinctive Education

At Armour College of Engineering, we integrate innovative thought, entrepreneurship, creativity, and design with engineering theory, research, and practice. You will get the chance to work on projects that are normally open only to graduate students—and have the opportunity to apply what you have learned in the classroom to some of the most complex problems facing society today.

We enhance our college’s already strong curriculum with lecture series, forums, interactive problem solving, professional site exploration, and team-intensive engineering projects focusing on four themes: water, health, energy, and security. As you take part in these theme opportunities, your activity is tracked in your own personal online portfolio for use as a supplement to your résumé or as additional material for your application to graduate school.

Having a complete understanding of the research and development process will also help ensure your success after you graduate. Our Armour R&D Program includes two programs: Program for Undergraduate Research Education (PURE), which focuses on research, and Mentored Innovation and Development (MIND), which focuses on developing research-based technology. Both programs aim to give undergraduate students a hands-on experience with research and development that is unique to Armour College.

All distinctive education programs are designed to give you a competitive edge and tangible experience in global issues. Be confident in the fact that when you graduate from Armour College of Engineering, you will already be working on relevant and impactful solutions.