



Northeastern University  
Graduate School of Engineering

Become a  
**Next-Generation**  
Engineering Leader







# Innovate. Experience. Lead.

The Graduate School of Engineering at Northeastern University combines rigorous academics with experimental learning and research to prepare the next generation of engineering leaders for the complex and ever-evolving challenges of the world to benefit society. Our innovative approach to experiential learning, including Northeastern's flagship cooperative education program, and focus on multidisciplinary research for global impact, has made us one of the top engineering schools in the world.

**1<sup>ST</sup>** in **COOPERATIVE  
EDUCATION/  
INTERNSHIPS**

U.S. News and World Report, 2024

**R1** **TOP-TIER  
RESEARCH  
INSTITUTION**

Carnegie Classification

**TOP  
32** **ENGINEERING  
GRADUATE  
SCHOOLS**

U.S. News and World Report, 2024

**14<sup>TH</sup>** in **CAREER  
SERVICES**

Princeton Review, 2024





# Personalize Your Path

Whether your goal is to advance your career, transition to a new field, or conduct transformative research, Northeastern's graduate engineering programs can put you on your path to success. The college offers more than 60 Master of Science, Doctor of Philosophy, and Graduate Certificates across six engineering departments, in traditional disciplines and applied areas of study. With flexible concentrations, tracks, and a variety of electives, you can personalize your experience to meet your individual goals.

Nearly 20 graduate certificates—in technology, business, and leadership—give you additional ability to customize your education. A certificate program can complement your graduate degree program or you can apply the course credits toward an eligible Northeastern engineering master's degree in the future.

## Flexibility to Meet Your Needs

As a master's student you can select from coursework, project-based, and thesis options. To pursue a Doctor of Philosophy degree, you can enter the program directly with a Bachelor of Science degree, or begin in advanced standing with a Master of Science degree in a relevant field\*. Degrees are available on a full-time or part-time basis, and courses can be taken on campus, online, and in hybrid formats (varies by program).

*\*Advanced entry is stipulated on departmental approval.*

## Graduate Students Take Positions at Top Organizations

### Sampling of Positions

*Through an innovative curriculum you will be equipped with a solid foundation for technical and leadership positions in industry organizations, government agencies, research laboratories, and educational institutions.*

### RESEARCH

National Institutes of Health  
Boston Children's Hospital  
Brigham and Women's Hospital  
Draper Laboratory  
NASA Jet Propulsion Lab  
NASA Ames  
MIT Lincoln Lab  
Merck & Co.  
Takeda  
National Labs such as Argonne, Brookhaven, Oak Ridge, Pacific Northwest, Sandia  
Pfizer  
Philadelphia Children's Hospital  
Massachusetts General Hospital  
Novartis  
The Broad Institute of MIT and Harvard

### ACADEMIA

University of California (Berkeley, Los Angeles, San Francisco)  
Massachusetts Institute of Technology  
Johns Hopkins University  
Boston University  
Rensselaer Polytechnic Institute  
Harvard Medical School  
Worcester Polytechnic Institute  
University of Maryland  
University of Minnesota  
University of Wisconsin  
University of Toronto  
Baylor College of Medicine  
University of Massachusetts, Lowell and Amherst  
Columbia University

### INDUSTRY

Google, Microsoft, Bristol-Myers Squibb, Caterpillar, Cisco, Qualcomm, Johnson & Johnson, Moderna, Intel, Dana Farber Cancer Institute, Dell, Amazon, BAE Systems, Raytheon, Walmart, PayPal, Apple, Schneider Electric, Proctor & Gamble, General Electric, Wayfair, JetBlue, Facebook, SpaceX, Tesla, Akamai, iRobot, Pratt & Whitney, Lockheed Martin, Biogen, Fidelity, Liberty Mutual, Thermo Fischer Scientific, PwC, Eversource, Naval Sea System Command, Oracle, Sanofi, Defense Advanced Research Projects Agency, Simpson Gumpertz and Heger





## Located in Innovation Hubs

Northeastern University's College of Engineering offers graduate programs in Boston and across Northeastern's growing **global university system** of campuses for flexible learning and collaborative research. Some examples of locations include Arlington, Virginia; Miami, Florida; Oakland, California; Portland, Maine; Seattle, Washington; Silicon Valley in California; and Vancouver and Toronto, Canada, among others. See our website for the latest graduate programs offered by location by scanning this QR code.



**David Medina Cruz**, a chemical engineering doctoral student, made a pioneering discovery while working in the nanomedicine lab. He is using bacteria to produce nanoparticles that are particularly effective at killing whatever type of cell was used to create them, including strains of bacteria that are resistant to traditional antibiotics, as well as tumor cells. The research could provide a way to combat the rising number of antibiotic-resistant infections and also design nanoparticle-based cancer treatments. He co-founded a company from this research and won a Massachusetts Innovation Network The Eddies award.

**142** **YOUNG  
INVESTIGATOR  
AWARDS** (as of AY2023)

**72** **NATIONAL SCIENCE  
FOUNDATION  
CAREER AWARDS** (as of AY2023)





**JAMES TUKPAH**  
**COMPUTER ENGINEERING**

Doctoral student **James Tukpah**, computer engineering, is a double Husky, earning both his BS in electrical engineering and MS in robotics from Northeastern. He is a research assistant at the Institute for Experiential Robotics.

## Interdisciplinary Research

Northeastern is an R1 top-tier research institution, rated with very high research activity by the prestigious Carnegie Classification of Higher Education. As such, you will have the opportunity to participate in innovative, interdisciplinary research working alongside highly accomplished faculty in state-of-the-art facilities. You will also benefit from our collaborative partnerships, which span industry, government, research laboratories, hospitals, and academic institutions—locally and globally.

The college has 18 multidisciplinary research centers and universitywide institutes. Research addresses global challenges in health, sustainability, and security, as well as in enabling areas of focus, such as robotics and the internet of things.

A myriad of research opportunities are available. From regional poster competitions, travel scholarships, research assistantships, presenting at conferences, and being published in professional journals, you gain a rich education and real-world experience in your area of interest.



**SUZANNE STASIAK**  
**BIOENGINEERING**

Doctoral student **Suzanne Stasiak**, bioengineering, looks at a microscope image of a human smooth muscle to understand how it detects inhaled irritants and generates force at the cellular level to develop better treatment for people with asthma.

**18** MULTIDISCIPLINARY RESEARCH CENTERS  
AND INSTITUTES WITH FUNDING FROM  
EIGHT FEDERAL AGENCIES

**\$118M** EXTERNAL  
RESEARCH  
AWARDS (2023)

# EXPERIENCE IS THE HEART OF A NORTHEASTERN EDUCATION.

## Experience-powered Learning

### Cooperative Education

Northeastern's cooperative education program, also known as co-op, is one of the largest and most innovative in the world, and is one of only a few that offers a co-op program for graduate students. With co-op, you have the opportunity to gain up to eight months of professional experience employed in your field of interest as part of the academic curriculum, giving you a competitive edge upon graduation. The College of Engineering has over 3,000 co-op employer partners globally, from leading corporations to startups. Our dedicated team of co-op coordinators support you through the process with resume building, interview skills, and professional development.

“I ended up choosing Northeastern because the program is well established, the location of Boston is a hub for the industry and the co-op program is really good for me as an international student because it helps me gain work experience in the U.S.”

Vineel Kondiboyina, MS Bioengineering



SARA GARCIA SANCHEZ  
ELECTRICAL ENGINEERING

Doctoral student **Sara Garcia Sanchez**, electrical engineering, won the **Best Paper Award** at the International Workshop on Drone Assisted Wireless Communications for 5G and Beyond co-located with ACM MobiCom for her paper “Camera-enabled joint robotic-communication paradigm for UAVs mounted with mmwave radios.” Garcia Sanchez also did an internship at IBM which led to a full-time job, and she conducted cutting-edge research at Northeastern's Institute for the Wireless Internet of Things.



NISHITA SIKKA  
TELECOMMUNICATION NETWORKS

Master's student **Nishita Sikka** did her co-op at Volvo Group North American headquarters, gaining invaluable experience in automation, web development, and network infrastructure.

Find Nishita's story and more graduate experiences on our **YouTube** channel via this QR code.



3,057 EMPLOYER  
PARTNERS  
(2021-2023)

1,411 GRADUATE  
STUDENT CO-OP  
HIRES IN 2023

52% OF GRADUATE STUDENTS  
GOT A FULL-TIME JOB OFFER  
FROM A CO-OP EMPLOYER



## Experiential PhD

As a doctoral student, you can participate in Northeastern's Experiential PhD program. It provides internships, fellowships, practicums, a leadership program, and special initiatives. You will benefit from challenging assignments inside partner organizations in industry, government, academia, and the non-profit sector. Additionally, the program offers the unique opportunity to conduct research outside of your primary research group.



**MAX ROME**

**CIVIL AND ENVIRONMENTAL  
ENGINEERING**

Doctoral student **Max Rome**, civil and environmental engineering, is leading a team of Northeastern researchers to create a visually impactful floating wetland on the Charles River to serve as a model to support water ecosystems, including combating algae blooms.



**YI ZHENG**

**ASSOCIATE PROFESSOR**

**MECHANICAL AND  
INDUSTRIAL ENGINEERING**

**Yi Zheng**, associate professor of mechanical and industrial engineering, founded Planck Energies, from the research conducted in his lab at Northeastern. His "cooling paper" invention is created from a sustainable material that can be used to keep buildings or other objects cool without relying on conventional cooling systems.

## Entrepreneurship

With a supportive multidisciplinary research community designed to foster interdisciplinary collaboration across Northeastern and with industry, government, and academic partners, as well as a robust entrepreneurial ecosystem across the university, several of our engineering faculty and students have launched spin-out companies from the research conducted in Northeastern labs. The Sherman Center for Engineering Entrepreneurship Education offers a Venture Co-op, enabling students to be funded while working on their startup full time. An *MS in Product Development* is also offered through the Sherman Center.



## Engaged and Welcoming Community

With Northeastern, you join a diverse, vibrant, and welcoming community of talented students from around the world. The College of Engineering has over 60 student organizations in addition to universitywide activities and resources. There is a PhD Network, and opportunities to participate in research, numerous events and lectures, as well as regional and national competitions, to name a few.



## Admissions Information

There are multiple terms of entry. The graduate application process is entirely electronic. Some applicants are exempt from the TOEFL/IELTS/Duolingo English Exam (tests of English proficiency) and we do not require the Graduate Record Exam (GRE). Application fee waivers are offered periodically during special events and promotions.

Undergraduate degree requirement: Generally, applicants are required to hold (or be pursuing) an undergraduate engineering degree in a closely related major to their graduate program of interest. Some programs consider applicants with an undergraduate degree in science, mathematics, technology, computer science, and non-STEM fields.

View admissions details at  
[coe.northeastern.edu/admissions](https://coe.northeastern.edu/admissions)

### Financial Assistance

As a full-time graduate student, you will be considered for various types of highly competitive funding awards based on merit, as well as prestigious fellowships.

Alumni with a bachelor's degree from Northeastern are eligible for a Double Husky scholarship. The scholarship includes a 25% tuition waiver and an accelerated application process if enrolled in a full-time or part-time engineering master's degree or graduate certificate program.



# Academic Programs

College of Engineering programs are STEM designated.

## MASTER OF SCIENCE

Advanced and Intelligent Manufacturing  
Bioengineering  
Chemical Engineering  
Civil Engineering  
Climate Science and Engineering  
Cyber-Physical Systems  
Data Analytics Engineering  
Data Architecture & Management  
Data Science  
Data Science ALIGN

*(bridge program for non-technical backgrounds)*

Electrical & Computer Engineering  
Electrical & Computer Engineering Leadership  
Energy Systems\*  
Energy Systems Academic Link\*  
*(bridge program for non-engineering backgrounds)*  
Engineering Management\*  
Engineering and Public Policy  
Environmental Engineering  
Human Factors  
Industrial Engineering  
Information Systems  
Information Systems - Bridge  
*(program for non-engineering backgrounds)*  
Internet of Things  
Mechanical Engineering  
Operations Research  
Pharmaceutical Engineering  
Product Development  
Robotics  
Software Engineering Systems  
Sustainable Building Systems  
Telecommunication Networks  
Wireless and Network Engineering

## DOCTOR OF PHILOSOPHY

Bioengineering  
Chemical Engineering  
Civil and Environmental Engineering  
Computer Engineering  
Cybersecurity  
Electrical Engineering  
Industrial Engineering  
Interdisciplinary Engineering  
Mechanical Engineering

## GRADUATE CERTIFICATES

Blockchain and Smart Contract Engineering  
Broadband Wireless Systems  
Climate and Engineering  
Data Analytics Engineering  
Energy Systems\*  
Energy Systems Management\*  
Engineering Business  
Engineering Economic Decision Making\*  
Engineering Management\*  
Gordon Engineering Leadership  
IP Telephony Systems  
Lean Six Sigma\*  
Process Safety Engineering  
Renewable Energy\*  
Software Engineering Systems  
Supply Chain Engineering Management\*  
Sustainability Engineering  
Sustainable Energy Systems  
Technology Systems Management

*\* Programs have online completion options*

## PlusOne Master's Degrees

The College of Engineering offers a PlusOne program for currently enrolled Northeastern bachelor's degree students who would like to earn a master's degree in a condensed time period. Undergraduate students accepted into the PlusOne program use some of their undergraduate courses to fulfill master's degree requirements. This enables them to earn a master's degree typically in one year after completing their bachelor's degree.

Visit [coe.northeastern.edu/plusone](https://coe.northeastern.edu/plusone)

10,481 TOTAL  
ENGINEERING  
STUDENTS (2023)

6,039 MS  
STUDENTS

781 PHD  
STUDENTS

# DEPARTMENT OF BIOENGINEERING

[bioe.northeastern.edu](http://bioe.northeastern.edu)

Bioengineering is a rapidly growing sector of the engineering profession. The aging of the U.S. population and the nationwide focus on health issues is carving a central role for bioengineers in advancing our understanding of physiological processes in health and disease, and improving methods and devices for diagnosis and treatment. Biomedical advances are increasingly dependent on quantitative approaches that are exemplified by our bioengineering program.

An inherently interdisciplinary field, the bioengineering faculty is made up of faculty within the Department of Bioengineering as well as affiliated faculty from the College of Engineering, Pharmaceutical Sciences, Biology, Chemistry, Physical Therapy, and more. Our premier Boston location facilitates a wealth of collaborations with prestigious hospitals, research institutions, and industry. Our program offers an excellent opportunity for students to combine engineering, medicine, and biology through education, research, and professional experience.

**Locations:** Boston and one concentration in Portland, Maine

**Master of Science.** The bioengineering MS program is designed for students with different backgrounds, including students with a BS within the STEM fields; students who would like to strengthen their academic credentials or portfolio prior to applying to medical school; and professionals within biotech industry looking to strengthen their technical background, redirect their specific expertise, and broaden future employment opportunities.

The MS in bioengineering can be pursued full-time, full-time one-year accelerated, and part-time, and has select online courses for working professionals.

As a student, you may also participate in Northeastern's cooperative education program, gaining up to eight months of professional work experience as part of the academic curriculum.

**Doctor of Philosophy.** The PhD in bioengineering program is designed to take advantage of Northeastern's considerable strengths in multiple areas across both traditional and bioengineering programs. You have the opportunity to develop a course of study tailored to your interests or take advantage of one of four core research areas. If you have a BS degree and are interested in doctoral studies, you may apply directly to the PhD program; or pursue the MS degree first and then apply to the PhD subsequently.

## Concentrations

- Cell and Tissue Engineering
- Biomechanics
- Biomedical Devices and Bioimaging
- Systems, Synthetic, and Computational Bioengineering

## Research areas

- Biomedical Devices and Bioimaging
- Biomechanics, Biotransport, and MechanoBiology
- Molecular, Cell, and Tissue Engineering
- Systems, Synthetic, and Computational Bioengineering

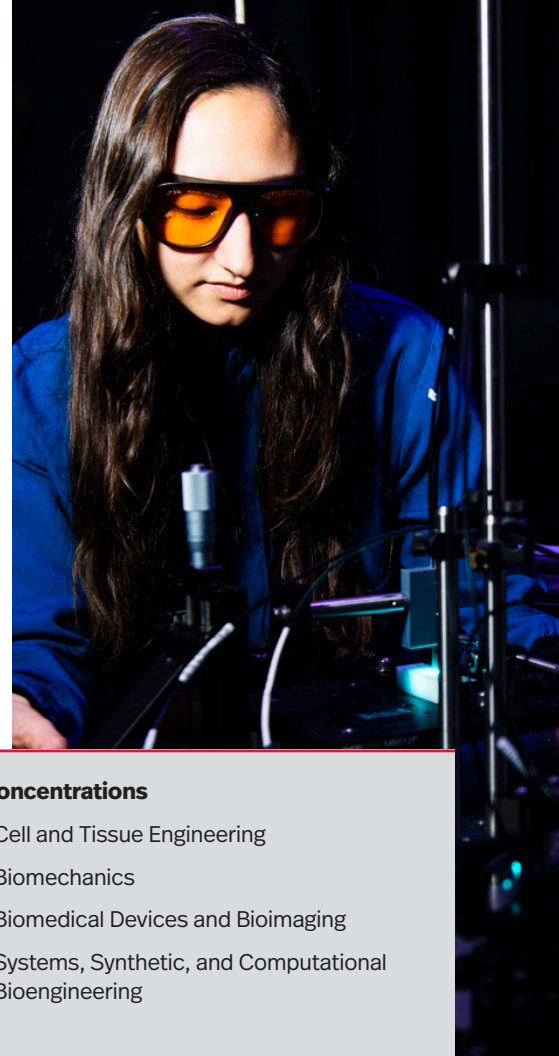
**“Boston is the city if you want to make it in biotechnology or anything bioengineering related, and the fact that Northeastern has so many connections here is really invaluable—with Northeastern you're pretty much set.”**

Millicent Gabriel, MS Bioengineering

**267** GRADUATE  
STUDENTS  
(2023)

**35** TENURED/  
TENURE-TRACK  
FACULTY

**\$36M** EXTERNAL  
RESEARCH  
AWARDS ('21-'23)





# DEPARTMENT OF CHEMICAL ENGINEERING

[che.northeastern.edu](http://che.northeastern.edu)

The Department of Chemical Engineering prepares students to solve the problems of tomorrow. Chemical engineering principles are at the heart of global challenges, from energy storage and process sustainability to pharmaceutical manufacturing and novel material production. Our graduate programs offer students the opportunity to deepen their knowledge while engaging in hands-on training and experiential learning.

Students pursuing graduate level coursework in chemical engineering programs develop an in-depth understanding of the fundamental principles of chemical engineering and gain expertise in modern topics in the field through select elective courses. The MS in pharmaceutical engineering program provides integrated coursework in upstream and downstream processing to meet the evolving and growing needs of the biotechnology and biomanufacturing industries.

All students may participate in Northeastern's cooperative education program, gaining up to eight months of professional work experience. Our premier Boston location facilitates a wealth of collaborations with neighboring universities, hospitals, medical centers, and industry. The overarching goal of the rich research and educational experience is to mentor and equip students to become future leaders in engineering and science.

**Location:** Boston

**Master of Science.** The department offers two MS degrees.

The MS in chemical engineering is normally pursued by students with a BS degree in chemical engineering or closely allied fields. Students wishing to pursue the master's degree but with undergraduate educational backgrounds other than chemical engineering may be required to complete supplementary undergraduate coursework. Students can select research-based (thesis) or course-based degree options. The non-thesis MS degree is offered as either a full-time or part-time program.

The MS in pharmaceutical engineering is an interdisciplinary degree, offered in coordination with Bouvé College of Health Sciences. Students must have sufficient mathematics background to pursue an engineering degree. This full-time program with coursework and rich experiential learning prepares students for bioprocessing and manufacturing for biopharma.

**Doctor of Philosophy.** The doctoral degree in chemical engineering is offered as a full-time program where students engage in developing research questions and publishing new and innovative outcomes. In addition, our faculty participate in the interdisciplinary PhD and the industry PhD programs. Students with a BS degree interested in doctoral studies may apply directly to the PhD program or pursue the MS degree first and then apply to the PhD subsequently.

## Graduate degrees

- MS Chemical Engineering
- MS Pharmaceutical Engineering
- PhD Chemical Engineering

## Research areas

Students can select thesis topics from a diverse range of faculty research interests. The department's strategic research areas include:

- Biomolecular & Biomedical Systems
- Complex & Computational Systems
- Energy & Sustainability
- Engineering Education & Pedagogy
- Materials & Nanotechnology

**“The program provides the best of both worlds: a rigorous curriculum coupled with cutting-edge research opportunities. In the heart of Boston, collaboration plays a key role in our success, both with academia and industry.”**

Zach Rogers, PhD Chemical Engineering

**139** GRADUATE  
STUDENTS  
(2023)

**24** TENURED/  
TENURE-TRACK  
FACULTY

**\$15M** EXTERNAL  
RESEARCH  
AWARDS ('21-'23)



# DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

[cee.northeastern.edu](http://cee.northeastern.edu)

The coming decades will represent a crucial time as climate change, urbanization, and technological progress profoundly reshape the ways in which we live and work. From the opportunities of renewable energy and artificial intelligence to the threats of rising sea levels and vulnerable urban infrastructure, Northeastern is educating students to serve as leaders in an evolving and complex world.

With the Department of Civil and Environmental Engineering's strategic focus on urban engineering, you will explore the unique ways in which the built and natural environments interact, preparing you for the great challenges of our time. Utilizing the latest advances in simulation, smart sensing, data and network science, and urban informatics, faculty are conducting critical research in civil infrastructure security, environmental health, and sustainable resource engineering.

**Location:** Boston

**Master of Science.** With five degree options and six civil engineering concentrations, MS degrees prepare full- and part-time students for advanced careers in all facets of civil and environmental engineering.

You may also participate in Northeastern's cooperative education program, gaining up to eight months of professional work experience as part of the academic curriculum.

## MS degrees

- Civil Engineering
- Environmental Engineering
- Engineering & Public Policy
- Sustainable Building Systems
- Climate Science and Engineering

## Civil Engineering concentrations

- Construction Management
- Data and Systems
- Geotechnical/Geoenvironmental Engineering
- Structures
- Transportation
- Water, Environmental, and Coastal Systems

**Doctor of Philosophy.** The civil and environmental engineering PhD program is flexible and may be adapted to any subject area in civil and environmental engineering. The Graduate School of Engineering also offers an interdisciplinary PhD degree involving substantial work in two or more academic departments or disciplines.

## Research centers & institutes

- PROTECT Superfund Research Center
- Environmental Influences on Child Health Outcomes (ECHO)
- Global Resilience Institute



**“My program taught me to take a statistical and broader perspective, rather than having a microscopic view on engineering problems. That was one of the major takeaways for me.”**

Udit Bhatia, PhD Interdisciplinary Engineering

**195** GRADUATE  
STUDENTS  
(2023)

**38** TENURED/  
TENURE-TRACK  
FACULTY

**\$34M** EXTERNAL  
RESEARCH  
AWARDS ('21-'23)



# DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

[ece.northeastern.edu](http://ece.northeastern.edu)

The Department of Electrical and Computer Engineering offers comprehensive research and educational programs for Master of Science (MS) and Doctor of Philosophy (PhD) students. In addition to MS and PhD programs in electrical and computer engineering, MS degrees are offered in the internet of things and in wireless and network engineering. Flexibility to specialize in an area of interest is provided through a range of programs, concentrations, and research areas.

As part of the program, you will receive deep fundamental and practical knowledge. The department educates the next generation of highly skilled engineers and researchers with necessary skills to address the future needs of industry, government, and humanity.

The department is the lead or partner of more than 10 research centers, and has strong partnerships with government, industry, and academia. You may also participate in Northeastern's cooperative education program, gaining up to eight months of professional work experience.

**Locations:** Boston, and select concentrations in Seattle, Washington.

**Extensive research opportunities.** Research ranges from the design, analysis and optimization of high-performance computing systems, to the fabrication of cutting-edge microelectromechanical actuators, to new research frontiers on smart power grids, metamaterials, biomedical signal processing, and communication systems.

## Research areas

- Communications, Control, and Signal Processing
- Computer Networks and Security
- Computer Systems and Software
- Data Science
- Computer Visions, Machine Learning and Algorithms
- Electromagnetics and Optics
- Microsystems and Devices
- Power Electronics, Systems, and Controls
- Robotics

## Research centers & institutes (Sample List)

- Soft Target Engineering to Neutralize the Threat Reality (SENTRY)
- Institute for Experiential AI
- Institute for Experiential Robotics
- Institute for the Wireless Internet of Things
- Northeastern SMART
- Center for Hardware and Embedded Systems Security and Trust (CHEST)
- Center for Integrative Biomedical Computing (CIBC)
- Center for Transitional Applications of Nanoscale Multiferroic Systems (TANMS)
- Center for Ultra-wide-area Resilient Electric Energy Transmission Network (CURENT)
- Institute of Information Assurance (IIA)

“The questions that were asked during the interview [at Toyota Research] were the same things that were in my robotics class. There were a lot of hands-on projects and tools they used in class that were practical.”

Amanda Zhu, MS Computer Engineering

941 GRADUATE  
STUDENTS  
(2023)

85 TENURED/  
TENURE-TRACK  
FACULTY

\$133M EXTERNAL  
RESEARCH  
AWARDS ('21-'23)



# DEPARTMENT OF MECHANICAL & INDUSTRIAL ENGINEERING

[mie.northeastern.edu](http://mie.northeastern.edu)

The Department of Mechanical and Industrial Engineering offers comprehensive research and educational programs for both Master of Science (MS) and Doctor of Philosophy (PhD) students. You will work with world-renowned faculty to achieve research experience and your career goals. Faculty hold numerous young investigator awards, other national recognitions, and are elected fellows of professional societies. Each year the department receives an average of over \$10 million in funding to pursue use-inspired and fundamental research in many emerging fields that support and enhance degree programs. You may also participate in Northeastern's cooperative education program, gaining up to eight months of professional work experience.

**Locations:** Boston; Data Analytics Engineering also in Seattle and Vancouver, Canada; Energy Systems (online option); Engineering Management (online option)

**Master of Science.** MS degree programs are offered in both mechanical engineering with concentrations, and in industrial engineering. MS degree programs in targeted fields such as advanced and intelligent manufacturing, energy systems, engineering management, human factors, operations research, data analytics engineering, and robotics are also offered. These extensive programs and concentrations allow for the selection of a degree that meets a wide variety of personal and professional goals. Additionally, as a master's student, you can select from coursework only, project, or thesis-based options. Programs can be pursued either on a full-time or part-time basis; however, certain restrictions may apply.

**Doctor of Philosophy.** Cutting-edge and vibrant doctoral programs include PhDs in industrial engineering, mechanical engineering, and an interdisciplinary PhD (offered by the Graduate School of Engineering).



## Research areas & themes

- Mechanics
- Materials of the Future
- Complex Fluids, Multiphase, and Multiscale Matter
- Energy Systems, Sustainability, and Environmental Protection
- Robotics and Control Systems
- Human Technology Integration
- Biomechanics, Biotechnology Integration, and Mechanobiology
- Intelligent and Additive Manufacturing
- Engineering Education
- Networks and Complex Systems
- Resilient and Sustainable Service Systems
- Data Analytics, AI, and Operations Research

## Research centers & institutes

- Center for High-Rate Nanomanufacturing
- Healthcare Systems Engineering Institute
- Institute for Experiential Robotics

**“I had a unique design perspective because I was on a team with scientists while working with engineers, so I was bridging two project goals into one product.”**

Carey Tassel, MS Engineering Management

**2,335** GRADUATE  
STUDENTS  
(2023)

**65** TENURED/  
TENURE-TRACK  
FACULTY

**\$37M** EXTERNAL  
RESEARCH  
AWARDS ('21-'23)



# DEPARTMENT OF MULTIDISCIPLINARY GRADUATE ENGINEERING

[coe.northeastern.edu/mgen](http://coe.northeastern.edu/mgen)

Through the Multidisciplinary Graduate Engineering programs, you will gain the technical and engineering leadership skills to tackle today's complex challenges and drive tomorrow's innovation in the fields of technology and business. You will be prepared for the ever-evolving professional landscape through advanced coursework and complex technical projects in the areas of software, data, network systems, and more. Our renowned faculty are experts from a variety of industries, ensuring that a wealth of practical knowledge is brought into the classroom. Our programs are constantly adapting to match the latest technologies and meet the ever-changing demands of the market, focusing on the application of knowledge and skills to business and industrial settings.

Our programs seamlessly blend academic and corporate experience to help you enhance your professional capabilities and transform your career. Each program provides learning opportunities to develop the skills needed to create innovative, practical, and effective solutions that can be easily applied to current professional challenges. Furthermore, our flexible curriculums allow you to specialize in an area of interest through a range of programs, concentrations, and research areas. You may also participate in Northeastern's cooperative education program, gaining up to eight months of professional work experience.

**Locations\*:** Boston; Arlington, Virginia; Miami, Florida; Oakland, California; Seattle; Silicon Valley; and Toronto and Vancouver, Canada; See website for location updates.

*\*Varies by program*

**Format:** Full-time, Part-time, On Campus, and Hybrid

**Master of Science.** With an innovative curriculum that combines breadth of scope and depth of knowledge, our master's degrees provide students with a comprehensive and practical education. You will become a problem solver, designing groundbreaking networking, data, and software solutions that fit within the complexities of the world and solve the needs of the people who use them.

The flexible degree programs put software at the forefront of the engineering paradigm to address the socio-technical needs of contemporary society. You will be prepared to go beyond simple technical engineering to become a leader in delivering systems that are safe, secure, reliable, and help solve the world's grand challenges.

## Focus areas

- Blockchain and Smart Contracts
- Business Intelligence and Data Analytics
- Cloud Computing
- Cyber-Security Engineering
- Data Architecture
- Data Center Networking
- Digital Business
- Embedded Systems
- Engineering of Big Data Systems
- Full-Stack Software Engineering
- Internet of Things
- Machine Learning and Data Sciences Engineering
- Mobile Computing
- Software Defined Networks
- User Experience Design

**\*\*** The MSIS-Bridge program is for students with non-technical backgrounds to pursue an MS in Information Systems.

## MS degrees

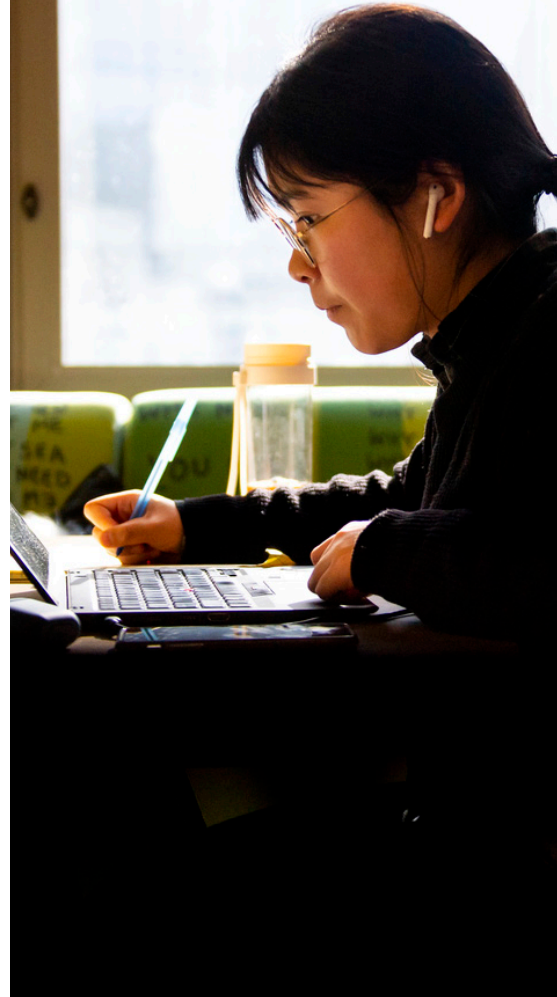
- Cyber Physical Systems
- Data Architecture and Management
- Information Systems
- Information Systems-Bridge\*\*
- Software Engineering Systems
- Telecommunication Networks

## Student groups

- **Husky Systems Code:** for women in STEM to share, learn, grow, and network
- **AI Skunkworks:** focused on artificial intelligence, deep learning, machine learning, computational biology, and game development
- **NU IoT Connect:** platform for all students interested in the world of connected devices
- **Google Developer Club:** learn with other budding developers and build solutions for local businesses and communities with Google technology

**50+** FULL AND  
ADJUNCT  
FACULTY

**2,934** GRADUATE  
STUDENTS  
(2023)



[coe.northeastern.edu/gse](https://coe.northeastern.edu/gse)

**Northeastern University**  
Graduate School of Engineering  
130 Snell Engineering Center  
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Boston, MA 02115, USA

Phone: +1 617.373.2711



With over 230 tenured/tenure-track faculty and 18 multidisciplinary research centers and institutes with funding by eight federal agencies, the College of Engineering is a leader in experiential education and interdisciplinary research with a focus on innovating to address global challenges for societal impact. Northeastern's global university system—with engineering programs on campuses across the U.S. and in multiple countries—provides flexible academic offerings, innovative partnerships, and the ability to scale ideas, talent, and solutions.

## About Northeastern University

Founded in 1898, Northeastern is a global research university and the recognized leader in experiential lifelong learning. Our approach of integrating real-world experience with education, research, and innovation empowers our students, faculty, alumni, and partners to create worldwide impact.

Northeastern's personalized, experiential undergraduate and graduate programs lead to degrees through the doctorate in 10 colleges and schools across our 13 campuses worldwide. Learning emphasizes the intersection of data, technology, and human literacies, uniquely preparing graduates for careers of the future and lives of fulfillment and accomplishment.

Our research enterprise, with an R1 Carnegie classification, is solutions oriented and spans the world. Our faculty scholars and students work in teams that cross not just disciplines, but also sectors—aligned around solving today's highly interconnected global challenges and focused on transformative impact for humankind.

