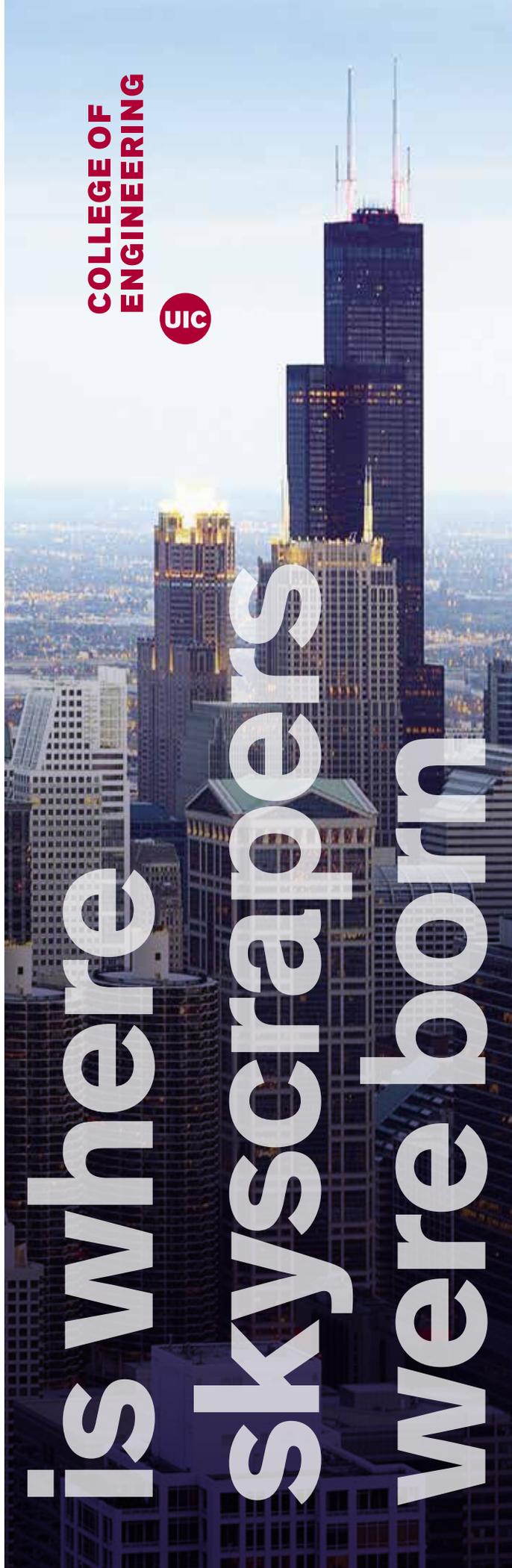


Chicago

**is where
skyscrapers
were born**

**is where you
will rise.**

**COLLEGE OF
ENGINEERING**



Transformation happens from the inside out.

If you want to change the world, figure out how things work on the inside.

Engineering applies principles of science and the language of math to the inner workings of everything around us—biological, chemical, electrical, structural, computational—to create lasting, positive change. Engineering and computer science give you a way to shape your world for the better.

Think about pioneering jet fuels that reduce the carbon footprint of air travel. Imagine reshaping the skyline of a developing country. Picture a mountain lake cleaned and opened for swimming with the help of nanoparticles.

Inventions. New approaches. Real-world results. At the University of Illinois Chicago, you can transform yourself into an engineer or computer scientist with the power to transform our world—someday, or even right now.

Everything is right here. You can be, too.



Cutting-edge research

UIC Engineering faculty manage more than \$90 million in research grants, many of which involve student researchers. In addition, Chicago's South Loop is home to the University of Illinois System's new Discovery Partners Institute, a public-private partnership designed to solve problems in computing and data, food and agriculture, the environment, and health.

Industry connections and job opportunities—even while you're still in school.

Abbott Laboratories, Boeing, Caterpillar, Google, General Electric, Archer Daniels Midland, Baxter Healthcare, ThyssenKrupp, and hundreds of other multinational firms have a base in the Chicago area.

Leadership potential

UIC students head more than 30 student professional organizations, most of which are chapters of national and global engineering societies, from Engineers Without Borders to the American Institute of Aeronautics and Astronautics.

Diversity

UIC is home to a community as diverse as the real world that our future engineers will transform and improve.

UIC undergraduate computer science students visualized large-scale cosmological simulations of Dark Matter Particle and Halo data provided by the Dark Sky Simulation project and displayed the resulting interactive 3D model of the evolution of the universe in the CAVE2™ virtual-reality environment at the UIC Electronic Visualization Laboratory.

*Electronic Visualization Laboratory,
Computer Science Department,
University of Illinois Chicago*

Undergraduate Academic Programs

Majors

- Bioengineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Computer Science
- Data Science
- Electrical Engineering
- Engineering Management
- Engineering Physics
- Industrial Engineering
- Mechanical Engineering

Minors are also available in all of the ABET-accredited fields above (exceptions are Data Science, Engineering Management, and Engineering Physics).

Minors

- Environmental Engineering
- International Studies

Honors opportunities

Incoming engineering students are invited to apply to the UIC Honors College, a community of exceptional scholars in the liberal arts, sciences, and engineering who have access to honors-level first-year core courses, research assistantships, and dedicated facilities.

Sophomores, juniors, and seniors in the Honors College complete one honors-level activity per year, such as research, an independent study, additional honors courses, study abroad, service learning, or tutoring. Additional benefits available to honors students include:

- Merit-based and need-based scholarships
- Mentoring and advising from Faculty Fellows
- Honors seminars
- Honors floors in UIC residence halls

Internships

Choosing an engineering school in the heart of Chicago offers unparalleled access to internships that can move you one step closer to your dream job.

Chicago is home to Caterpillar, Exelon, John Deere, Motorola, Navistar International, and United Airlines—and we are connected to all of them.



A student explores Crater Lake in Oregon on Varrier, an auto-stereoscopic virtual-reality display developed by the UIC Electronic Visualization Laboratory. EVL created the visualization to enable users to interactively explore and “walk” about the terrain and lake.

Electronic Visualization Laboratory, Computer Science Department, University of Illinois Chicago

Internships—guaranteed.

UIC’s College of Engineering is unique in guaranteeing a internship to every freshman and transfer student who meets the requirements of participation in the program.

Now in its eighth year, the Guaranteed Paid Internship Program places students in paid positions in cutting-edge UIC research laboratories. Students in this program also have been interns at Argonne National Laboratory, Baxter, The Burke Group, Exelon, ITW, Knowles Corporation, Primera Engineering, the Shirley Ryan AbilityLab, and WEC Integrays (Peoples Gas).

Join the intern majority

More than 70 percent of UIC Engineering students report having had between **one and five internships** during their time in college—a testament to the fact that attending engineering school in a major city can make a major difference.

Bioengineering

Bioengineers use technology and engineering principles to improve the way that living things work. Through bioengineering, we can make major strides in our quality of life.

Modern medicine has been profoundly shaped by bioengineering achievements. Think about imaging techniques such as MRIs or PET scans. Consider innovative medicine-delivery systems, such as insulin pumps, and new ways to perform surgery. Bioengineers are engineering organs for transplants, pushing the envelope with prosthetic limbs, and developing new tools to treat retinal diseases such as glaucoma and macular degeneration.

Explore the intersection of biology and technology through bioengineering. A degree in this field also prepares you for a wide range of career paths, from medical product development and bioinformatics to patent law, medicine, or pharmacy.



In the Brain-Computer Interface project, EEG headsets capture brain signals to control external equipment. Here, two UIC Biomedical Engineering Society students test their work.

“I help design new orthopedic implants and instruments for patients in need of a hip or knee prosthesis. I love how my work has the potential to significantly improve a patient’s life. I even get to attend live surgeries and see renowned orthopedic surgeons use our products to gain a better understanding of what patients need.”

Catherine Santis
(BS’14, MS’16)
*Project Engineer,
DePuy Synthes
(part of the Johnson & Johnson
family of companies)*



Tell your friends you’ve taken ...

BIOE 240
Modeling Physiological Data and Systems

BIOE 250
Clinical Problems in Bioengineering

BIOE 396
Interdisciplinary Medical Product Development

BIOE 406
Regulation and Manufacturing Practices in Medical Technology

BIOE 423
Biomedical Imaging Laboratory

BIOE 456
Cell and Tissue Engineering Laboratory

BIOE 476
Neural Engineering Laboratory

BIOE 485
Bioinformatics Laboratory

BIOE 485
Bionanosensors

BIOE 494
Wearables and Nearables Technology Laboratory

Student organizations

Biomedical Engineering Society

Engineering in Medicine and Biology Society

Engineering World Health

Chemical Engineering

Producing and manufacturing products would not be the same, or even possible, without the contributions of chemical engineers. Here, insight from chemistry, physics, math, and economics come together to inform improvements in the ways we make things—and make the most of things, such as through reuse or recycling.

Chemical engineering has an impact on a wide range of industries and manufacturing processes. You could change the way the world makes and uses petroleum, or you could pioneer new methods for alternative energy. You can use chemical photolithography and vapor deposition techniques to improve computer chips. You could get involved with food processing, pharmaceutical production, mining, or nanotechnology.

Chemical engineering isn't just about innovative components, but also better processes—giving you a chance to improve not only what we do, but how we do it.



“I handle all areas that involve mascaras and liquids to ensure that products like liquid lipsticks, eyeliners, and make-up remover comply with L'Oréal's safety and sustainability measures. My favorite thing about my job is getting to use my technical experience in everything from weighing raw materials to processing formulas in projects that deal with process optimization and sustainability.”

Ana Hernandez (BS '18)
*Mascaras SHEQ
(Safety, Health,
Environment, and Quality)
Engineer, L'Oréal USA*

A chemical engineering student uses Laser Doppler Velocimetry to measure the velocity profile of a non-Newtonian fluid in a complex flow. These experiments help to characterize the flow behavior of complex fluids.

Tell your friends you've taken ...

- CHE 313**
Transport Phenomena III
- CHE 341**
Chemical Process Control
- CHE 425**
Nanotechnology for Pharmaceutical Applications
- CHE 422**
Biochemical Engineering
- CHE 433**
Process Simulation with Aspen
- CHE 451**
Renewable Energy Technologies
- CHE 494**
Entrepreneurship in Chemical Engineering
- CHE 494**
2-D Nanomaterials
- CHE 494**
Biotechnology and Nanobiotechnology
- CHE 494**
Solar Fuel Engineering
- CHE 494**
Polymer Processing and Properties

Student organizations

- Alpha Eta Mu Beta (national honor society)
- American Institute of Chemical Engineers
- Electrochemical Society

Civil and Materials Engineering

People think of civil and materials engineering as shaping the built world around us. And that's true. But the field goes much deeper: not just creating buildings, transportation networks, power grids, and water systems, but also assessing the effect that those systems have on the environment, the economy, and society.

Studying civil engineering as an undergraduate at UIC will enable you to pursue a career in constructing skyscrapers, finding new ways to purify urban drinking water, overseeing urban planning, designing self-monitoring bridges, or coming up with smart solutions for transit challenges. The choices are so broad that you can chart your own course.

As people become aware of the impact that development has on people and the planet, smart civil and materials engineers are more important than ever.



UIC's steel bridge-building team poses on its structure, built right here on campus during the American Society of Civil Engineers' 2018 Great Lakes Student Conference.

Tell your friends you've taken ...

CME 402
Geometric Design of
Highway Facilities

CME 403
Hydraulic Design

CME 406
Bridge Design I

CME 408
Traffic Engineering
and Design

CME 414
Design of Masonry
Structures

CME 422
Wastewater
Treatment Design

CME 440
Cities and Sustainable
Infrastructure

CME 454
Design of Tall Buildings

CME 485
Construction Engineering
and Management

Student organizations

American Society of
Civil Engineers

Engineers
Without Borders

Institute of
Transportation
Engineers

Structural Engineers
Association of Illinois

“My latest project is overseeing the concrete, structural steel, fire-proofing, and door frames installation on a nine-story, 360,000-square-foot behavioral health building for Nationwide Children’s Hospital. What I love most about my job is knowing that my work helps build the places that enhance people’s lives. It truly makes me feel like I’m helping build the future.”

Sedo Agondanou (BS '15)
*Cost Analyst,
Turner Construction Company*



Computer Science

Computer scientists wield extraordinary power to create change. Their programming underlies virtually every system we encounter in an average day. Computer science makes it possible for us to withdraw money from the bank, play video games, send text messages, get packages delivered, keep our personal data safe, and drive our cars (or let those cars drive themselves).

The applications are limitless, and the career prospects are bright. The median salary for three of 10 computer-related job categories tracked by the U.S. Bureau of Labor Statistics exceeded \$100,000 last year. One of them, software development, is projected to experience a 24-percent increase in job opportunities by 2024.

Studying computer science at UIC will prepare you for work in software engineering, data science and analytics, cybersecurity, web development, animation and visualization, game development, and more.

Kevin Lynch, vice president of technology at Apple and head of the creative team that designed the iWatch, studied interactive computer graphics at the UIC Electronic Visualization Laboratory as an undergraduate and returned to speak with computer science faculty and students.

*Electronic Visualization Laboratory,
Computer Science Department,
University of Illinois Chicago*



"I work on a team that runs Google Takeout, a project that lets users take control of their data and export it from services like Gmail and YouTube. Knowing my contributions directly impact user privacy is the coolest thing about my job."

Siham Hussein (BS '15)
*Software Engineer,
Google*

Tell your friends you've taken ...

- CS 111**
Program Design I
- CS 251**
Data Structures
- CS 401**
Computer Algorithms
- CS 412**
Introduction to Machine Learning
- CS 415**
Computer Vision
- CS 418**
Introduction to Data Science
- CS 426**
Video Game Design and Development
- CS 440**
Software Engineering
- CS 478**
Software Development for Mobile Platforms

Student organizations

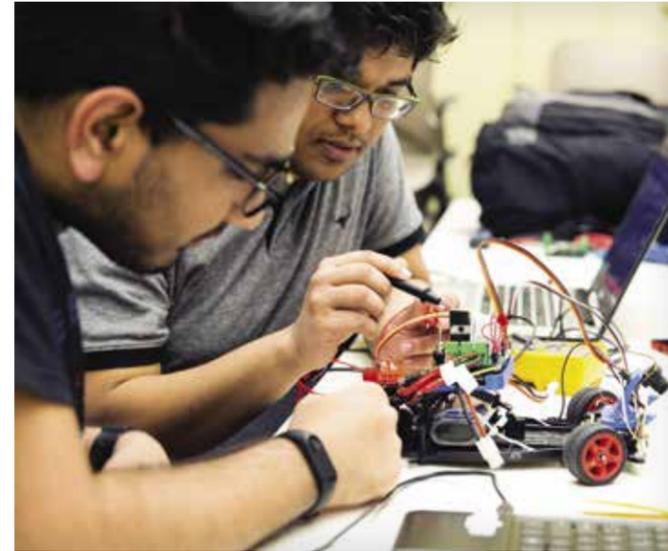
- Association for Computing Machinery
- Engineering Design Team (robotics competition team)
- Latinx Organization for Growth in Computing and Academics
- Linux Users Group
- Tau Beta Pi (national honor society)
- Women in Computer Science

Electrical and Computer Engineering

Electrical and computer engineering puts the “smart” in virtually every smart device people use: smartphones, Internet-connected home appliances, smart grids, autonomous cars, and surgical robots, to name a few.

Electrical and computer engineers combine the principles of math and physics to create the innovative systems that make up hardware and software. The median salary for jobs in these fields is more than \$100,000, according to the U.S. Bureau of Labor Statistics.

Our department offers three majors: electrical engineering, computer engineering, and engineering physics. Studying these fields prepares you for a broad range of career options: in big data, artificial intelligence, nanotechnology, robotics, electromagnetics, supercomputing, semi-conductors, multimedia systems, communications networks, manufacturing, avionics, automotive, healthcare, and much more.



Students in the Mechatronic Systems Design Laboratory (ECE 491) design hardware, software, and a control algorithm to race autonomous model racecars on a specially designed track.

“At Bose, I split my time between two projects: managing a team of acoustic engineers tasked with inventing the next generation of Bose noise-cancelling headphone technologies and building prototype systems to explore the cutting edge of audio in augmented realities—a true passion of mine that all started at UIC’s Electronic Visualization Laboratory.”

Mark Blewett (BS ’14)
*Engineer, Leader,
Bose Corporation*



Tell your friends you’ve taken ...

ECE 266
Introduction to Embedded Systems

ECE 317
Digital Signal Processing

ECE 333
Computer Communication Networks

ECE 340
Electronics

ECE 347
Integrated Circuit Engineering

ECE 407
Pattern Recognition

ECE 437
Wireless Communications

ECE 440
Nanoelectronics

ECE 449
Microdevices and Micromachining Technology

ECE 452
Robotics: Algorithms and Control

Student organizations

Audio Engineering Society

Engineering Design Team (robotics competition team)

Engineering World Health

Engineers Without Borders

Eta Kappa Nu (international honor society)

Institute of Electrical and Electronics Engineers

Mechanical and Industrial Engineering

Imagine harnessing the power of our physical world to design and create something wonderful and useful that meets a human need. Next, imagine being able to look at the factory that makes your wonderful, useful product and find ways to produce it better, more efficiently, and safely. Then imagine overseeing the business that produces your product, helping that organization to run better and sharpen its business practices.

The three majors housed in the mechanical and industrial engineering department can teach you to do each of these things. Knowledge of mechanical engineering, industrial engineering, and engineering management will allow you to pursue a career in engineering, business, or a hybrid of the two.

Whether your interests are in sustainable energy, space exploration, quality control, production safety, patents and intellectual property, or operations management, you will find courses that interest you here.



“My job at SpaceX is to ensure that flight hardware used on the Dragon 2 spacecraft is tested properly. This includes developing, building, and testing ground-support equipment, such as automated pressure panels, that expose the spacecraft to flight-like conditions to verify its functionality. My work supports a team of people dedicated to making humanity multi-planetary. I can’t help but love every minute of it.”

Barak Stoltz (BS '18)
*Manufacturing Engineer,
SpaceX*

Students who assist mechanical and industrial engineering faculty in their labs may do experiments related to nanoscale materials, sustainable manufacturing, energy storage, and more.

Tell your friends you've taken ...

- IE 201**
Financial Engineering
- IE 365**
Work Productivity Analysis
- IE 441**
Ergonomics and Human Factors
- IE 461**
Safety Engineering
- IE 466**
Production Planning and Inventory Control
- ME 410**
Automation and Robotics Applications
- ME 411**
Mechatronics
- ME 415**
Propulsion Theory
- ME 429**
Internal Combustion Engines
- ME 450**
Air Pollution Engineering

Student organizations

- American Institute of Aeronautics and Astronautics
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers
- American Society of Mechanical Engineers
- Engineering Design Team (robotics competition team)
- Institute of Industrial Engineers
- Pi Tau Sigma (national honor society)
- Society of Automotive Engineers

Special Programs



The classes held in UIC's MakerSpace include a course in additive manufacturing, also known as 3D printing.

You can have it all.

UIC Engineering students have access to special programs and facilities that set this school apart—and make the most of Chicago's resources.

Break Through Tech Chicago

There's a gender gap in the tech world—and that is unlikely to change until more women are earning the degrees they need to get tech jobs. (Did you know that right now, only 1 percent of all computer science degrees in the United States go to women?) The game is changing at UIC. Our computer science department is now home to Break Through Tech Chicago, a program designed to help women envision themselves in tech roles *and* complete the undergraduate CS degree they'll need to take off in the field. Learn more: chicago.breakthroughtech.org.

MakerSpace

Need a place to produce your prototype? We've got it. UIC's MakerSpace houses a fabrication lab with 3D printers, a laser cutter, specialized mills for plastics and wax, large-scale printers, cameras, and scanners—all dedicated for the use of engineering undergraduates. You imagine it, and we can help you make it.

Innovation Center

College courses designed by Kia and Dunkin Donuts? Find them in our Innovation Center. Major companies collaborate with UIC faculty to design hands-on courses. Working in interdisciplinary teams with peers majoring in anything from business to graphic design, UIC Engineering students use engineering concepts to develop useful, innovative solutions for their partner company. It's a win-win of a whole new kind.

Engineering Expo

Corporate executives visit campus to award prizes to undergraduate seniors' projects in design, prototyping, and applied research. Last year's projects delved into quadcopter drones, zero-emission power plants, a firefighting robot, 3D-printed spinal cords, new urban greenways for south Chicago, an automated machine for prepping hamburgers, and about 130 other creative topics.

Competitive Edge

Pick a winner. UIC Engineering students excel at hands-on engineering competitions throughout the United States. In the last four years, UIC student teams won the Cyber Defense Competition at Argonne National Laboratories and bested 24 other universities' aeronautics teams in the annual Battle of the Rockets' Target Altitude challenge.

Diversity

UIC believes the engineering field should represent the diversity of the city of Chicago and the world. Our Equity and Inclusion in Engineering Program (engineeringequity.uic.edu) supports the academic and professional growth of students from under-represented backgrounds. We also build community through groups such as the National Society of Black Engineers, Society of Hispanic Professional Engineers, and Women in Computer Science.



At the engineering career fair in September, students can meet with more than 120 companies in two days without leaving campus.

Great careers make it all worthwhile.

What awaits you after graduating from UIC's College of Engineering? Maybe it's your first full-time position in industry. Perhaps it's a master's degree or PhD in engineering, or medical school, law school, or an MBA. No matter what, people at UIC will help you get there.

The Engineering Career Center at UIC offers a specialized slate of services designed to empower you to lay the groundwork and make the connections you need to land your dream job. Individual career coaching is available to all students.



Hiring companies

The following companies and organizations are among the hundreds that hire UIC engineering and computer science students:

- Abbott
- Accenture
- Allstate
- Amazon
- Apple
- Arcelor Mittal
- Argonne National Laboratories
- Baxter Health
- Blue Cross Blue Shield
- Boeing
- Cabot Microelectronics
- Cargill
- Caterpillar
- Chicago Transit Authority
- Cisco Systems
- CNH
- ComEd/Exelon
- Cummins
- DeltaHawk Engines
- Dow Chemical Company
- Exxon Mobil
- Facebook
- Federal-Mogul
- Fermilab
- Ford
- GE Appliances
- GE Healthcare
- GM
- Google
- Honda (Research and Development)
- Honeywell
- HydraForce
- Hydro Inc.
- IBM
- Illinois Department of Transportation
- Infosys
- Intel
- ITW
- John Deere
- Johnson Controls
- Kraft Heinz Company
- Lockheed Martin
- L'Oreal USA
- Microsoft
- Milhouse Engineering
- Molex
- Motorola Solutions
- Navistar
- Nestlé
- Northern Trust
- Northrop Grumman
- Optum
- Peoples Gas
- PepsiCo
- Qualtrics
- Raytheon
- SanDisk
- Shure
- Siemens
- SpaceX
- Tesla
- T-Mobile
- Turner Construction
- Twitter
- Uber
- UL
- United Airlines
- Uptake
- U.S. Army Corps of Engineers

Workshops and seminars

- Job-searching
- Writing great résumés and cover letters
- Making the most of LinkedIn
- Networking
- Interviewing
- Negotiating salaries

Starting strong

Nearly half of UIC Engineering graduates report starting salaries of \$70,000 or more.

Cliff Haefke of UIC's Energy Resources Center shows an engineering student around the South Morgan Street plant that heats, cools, and powers campus.



The UIC Electronic Visualization Laboratory holds classes and meetings in Cyber-Commons, a technology-enhanced room that supports local and distance collaboration and promotes group-oriented problem solving.

Electronic Visualization Laboratory,
Computer Science Department,
University of Illinois Chicago

Admissions

UIC's College of Engineering seeks to admit bright, talented, energetic students who want to make a difference in the world. Applicants are evaluated on their prior academic performance and standardized test scores, but other factors matter, too, including essays, extracurricular activities, and recommendation letters.

Academic performance and standardized testing

In past years, successful applicants to the College of Engineering ranked in the top 20 percent of their graduating classes. The middle 50 percent of admitted students had an ACT composite score between 25 and 29, with a math subscore of 26 to 31. This corresponds to an SAT score between 1200 and 1380, with a math score of 610 to 710.

High school preparation

In high school, applicants should have completed:

- 4 years of math coursework
- 3 years of laboratory science coursework

in addition to UIC requirements for coursework in English, social sciences, and electives as outlined at admissions.uic.edu. AP credit is available; visit the Academic Standing section of the course catalog (go.uic.edu/course) for more information.

Transfer preparation

Transfer students must have completed at least 24 credit hours of transferable coursework at the time of enrollment. Ideally, transfers will have completed as many of the following as possible: Calculus I, II, and III; Differential Equations; English Composition I and II; General Physics I (mechanics) and II (electricity and magnetism); and General Chemistry I. You can compare the classes you have taken to UIC courses at go.uic.edu/course, and you can visit transferology.com for more information.

Scholarships and financial aid

80 percent of UIC students receive some form of financial aid. This comes in the form of grants, scholarships, loans, and employment. It helps to pay the costs of tuition, fees, books, supplies, room and board, transportation, and other personal expenses.

Full details are available on the UIC Office of Student Financial Aid's website: go.uic.edu/financialaid.

How to apply

The UIC College of Engineering admissions process takes place online. Go to the UIC Admissions website at admissions.uic.edu and click on "Common Application." This site also offers detailed information on requirements and deadlines, submitting standardized test scores, and more.



Networking opportunities are in close reach with more than 15,000 UIC Engineering graduates living in the Chicago area.

Tuition

Tuition and fees (residents):
\$8,953

Tuition and fees (nonresidents):
\$16,128

% of UIC students receiving some form of financial aid:
80%

Student info

Total undergraduate population (fall 2020):
4,173

Size of incoming first-year Class of 2024:
556

Average unweighted GPA of all first-year students:
3.54

Faculty and classes

Number of full-time faculty:
195

Percent with terminal degrees:
97%

Number of faculty who have received NSF CAREER awards:
43

Student-faculty ratio:
21:1

Life after UIC

Students holding one or more internships during college:
71%

Students in first destinations within 6 months of graduation:
87%

Percent of graduates with starting salaries between \$70,000 and \$100,000+:
44%

Size of alumni network:
26,000

Fast Facts

University of Illinois Chicago
College of Engineering
851 South Morgan Street
Chicago, IL 60607

Undergraduate admission:
312.996.3463

engineering.uic.edu



**COLLEGE OF
ENGINEERING**

