Computing and Technology

Illinois Tech is a small, private university that educates students to go on to do big things. If you love tech, computers, coding, the industry—what makes it all tick—there is no better place to study than Illinois Tech, a university recognized for innovation and achievements in science and technology.

If you’re like some of our students, you know you want to work in this field—only you might not be sure which major is best for you. At Illinois Tech we’ll help you find the right path. Here are four academic majors from which students often choose and a bit about each degree program.

**Computer Engineering**

Are you drawn to the electrical and hardware components of computing? If yes, then computer engineering may be the way to go. You’ll study everything from microprocessors to embedded computing devices to laptop and desktop systems to supercomputers. You will work on how data is communicated among electronic components, how software is written for specific hardware platforms, and how microprocessors are designed and optimized from an electrical engineering viewpoint.

**Computer Science**

If you’re interested in innovation and the theoretical concepts and design behind the technology, computer science could be a good fit for you. In CS you’ll learn the programming paradigms and when each is most applicable, along with computer science theory concepts, which will enable you to keep up with this rapidly changing field. Beyond the fundamentals, you will be able to focus in areas of artificial intelligence, computer systems and cloud computing, cybersecurity, and data science. Create the next CS innovation!

**Information Technology and Management**

This major is about knowing and managing IT—and translating it into a useful business tool. Our ITM program integrates theoretical principles with applied hands-on laboratory and project collaboration. You’ll learn about a variety of IT fields, including web and application development, system architecture, networking, database systems, systems security, contemporary programming languages, and more.

ITM Specializations

- Cyber, System and Network Security and Forensics
- Data Management and Analytics
- Digital Systems Technology and Embedded Systems
- IT Entrepreneurship and Management
- Management Information Systems
- Networking, Information and Communications Technology
- Software Development
- System Administration
- Systems Analysis
- Web Design and Application Development

**Cybersecurity**

Are you interested in cybersecurity? This field offers a very promising future. Depending on which cybersecurity degree program that you choose at Illinois Tech, you will learn about information security, information assurance, ethical hacking, vulnerability analysis and control, coding security, mobile device security, business continuity response, disaster recovery, legal and ethical issues, intrusion detection, and forensic tools. Or learn about the design and application of secure and resilient computer hardware and software systems, cybersecurity engineering of cyberphysical systems, detection and elimination of vulnerabilities and the safe operation of the Internet of Things, cloud computing, health care, smart/microgrid power systems, computer networks, and wireless communications.

**NEW CYBERSECURITY DEGREE PROGRAMS**

Fighting cybercrime requires specialized types of security professionals: malware analysts, computer forensics specialists, and security engineers, among others. Students can become a member of this elite squad by gaining a hands-on, project-focused, and future-forward education at Illinois Institute of Technology. Choose from one of two new undergraduate programs:

**Bachelor of Science in Computer and Cybersecurity Engineering** (Armour College of Engineering)

- Prepares students for an engineering career that involves the design and application of secure and resilient computer hardware and software systems

**Bachelor of Science in Applied Cybersecurity and Information Technology** (School of Applied Technology)

- Gives students the opportunity to become security experts in the areas of information, software, systems, people, and organizations
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. This hands-on collaborative experience gives our students a big advantage after graduation.

Recent computing- and tech-oriented IPROs include:

- Mobilus: robotic standing wheelchair with arm component
- Smart microgrids within contemporary electrical generation, transmission, and distribution networks
- Big data and analytics for innovative access-control business opportunities
- User interfaces for novel computer-aided drug design tools
- Inspiring public safety innovation and using big-data visualization to improve responsiveness to natural disasters
- The Simularium: exploring opportunities for an immersive environment with 3D visualization
- Security implications of Power over Ethernet (PoE) lighting control systems
- Building sensor-based applications and solutions for real-world problems

RESEARCH—EVEN AS AN UNDERGRAD!

Undergraduates at Illinois Tech get the opportunity to work on major research right from the start. You might participate in a professor’s research lab or conduct work at a company on campus in University Technology Park. You may also apply for our Elevate experiential learning program or one of our stipends for undergraduate summer research in the College of Science, or participate in Armour College of Engineering’s Program for Undergraduate Research Education (PURE) or Mentored Innovation and Development (MIND).

TEAM WORKS

Our ITM and cybersecurity majors feature a project-based learning program that allows you to work in group situations on industry-sponsored projects. Recent student projects have involved cybersecurity and forensics, wearable computing and clothing-based proximity sensors for the visually impaired, and a SIP-based telephone service for the campus.

STAND OUT.

Our graduates are far from ordinary. But we expect them to be extraordinary.

Emily was one of five national winners of the 2015 Wells Fargo Campus Analytics Challenge. She conducted research with Aron Culotta, assistant professor of computer science, working to improve the demographic classification of Twitter users who feel positively or negatively about e-cigarettes.

Graduates of our computing and technology programs include a member of the team that developed the Pentium chip, the co-founder of Linksys, a key scientist on the Titan supercomputer project, and many other global innovators.

“One summer I was an intern in software development for Visa. It was the best summer ever. It was cool to see the life cycle of a software development project from beginning to end. Illinois Tech definitely prepared me for my internship. I picked up a new language easily.”

— Emily Warman (Computer Science ’16), Toronto, Canada
Software engineer for Google

Illinois Tech has been designated as a National Center of Academic Excellence in Cyber Defense Education by the National Security Agency and the Department of Homeland Security.

Our hometown of Chicago is ranked as one of the top 10 cities for technology careers by CIO magazine.