

Engineering

NJIT

New Jersey Institute of Technology
A Public Research University

Bachelor of Science in
■ Electrical Engineering
■ Computer Engineering

Newark College of Engineering

Join the information technology revolution with a degree in electrical or computer engineering

A*dvances in electrical and computer engineering are reshaping our world, changing every field from manufacturing and business management to health-care, entertainment, education, scientific research and even exploration in space. NJIT's B.S. in Electrical Engineering and B.S. in Computer Engineering programs prepare you to work in the high-impact technology areas with a tremendous potential of future growth and job satisfaction.*

Questions & Answers



Advances in electrical and computer engineering are reshaping our world.

WHY STUDY ELECTRICAL ENGINEERING?

Electrical engineering forms the foundation of computing and information technologies through the development of Very Large Scale Integrated circuits (VLSI Chips) that are used in computers, cellular phones, industrial control systems, automobiles, satellite entertainment and communication systems, health-care and many other applications. Electrical engineering concepts are also used in power generation and management, control systems, robotics, signal processing and telecommunications.

WHY STUDY COMPUTER ENGINEERING?

Computer engineering encompasses the key technologies for computer and wireless communication systems, medical imaging and information systems, intelligent systems, microprocessor systems, real-time embedded control systems, computer networking and security systems and Internet engineering.

WHY STUDY ELECTRICAL AND COMPUTER ENGINEERING AT NJIT?

NJIT's programs offer a unique combination of courses to develop understanding and expertise in high impact technology areas of 21st Century. The educational and research programs have been evolved through interaction and growing partnership with the leading industries in electrical and computer engineering technologies including AT&T, Lucent Technologies-Bell Laboratories, IBM, Sarnoff, Sun Microsystems, PS&G, Globix, and Mitre Corp.

The undergraduate programs are carefully crafted to provide students a rich blend of state-of-the-art education and real-world experience through a productive curriculum and enjoyable learning environment. Special features include: interactive study groups; co-op and internship programs for real-world experience; university-industry collaborative mentoring and advising on senior design project; and the ECE Experience Residence Hall Program.



WHAT CONCENTRATIONS ARE AVAILABLE?

■ The B.S. in Electrical Engineering offers specialized concentration in:

- Signal Processing
- Wireless Communication
- Solid State and VLSI Design
- Fiber-optics, Microwave and RF Engineering
- Power Systems
- Intelligent Control Systems
- Telecommunications

■ The B. S. in Computer Engineering offers concentrations in:

- Computer Networking
- Computer Architecture and Systems
- Computer Communication Systems
- Multimedia
- Intelligent Systems
- Internet Engineering
- Telecommunications

WHAT COURSES WILL I TAKE?

• The B.S. in Electrical Engineering Curriculum includes :

Year 2: Electrical Engineering Fundamentals

EE 231: CIRCUITS AND SYSTEMS I
EE 232: CIRCUITS AND SYSTEMS II
EE 251: DIGITAL DESIGN
EE 271: ELECTRONICS
EE 352: MICROPROCESSORS

Year 3: Breadth and Depth in Electrical Engineering

EE 321: RANDOM SIGNAL AND NOISE
EE 333: CIRCUITS AND SYSTEMS III
EE 361: ELECTROMAGNETIC FIELDS I
EE 362: ELECTROMAGNETIC FIELDS II
EE 372: ELECTRONICS II
EE 373: ELECTRONICS III
EE 395: MICROPROCESSOR LABORATORY

Year 4: Electrical Engineering Technical Specialization Track

TECHNICAL TRACK SEQUENCE:

2 COURSES, 1 LAB AND 3 TECHNICAL ELECTIVES IN AN AREA OF SPECIALIZATION

EE 415: ELECTRICAL ENGINEERING SENIOR DESIGN PROJECT

■ The B.S. in Computer Engineering Curriculum includes

Year 2: Computer Engineering Fundamentals

EE 231: CIRCUITS AND SYSTEMS I
EE 232: CIRCUITS AND SYSTEMS II
EE 251: DIGITAL DESIGN
COE 225: ELECTRONICS
COE 252: MICROPROCESSORS

Year 3: Software and Hardware Concepts

COE 353: COMPUTER ORGANIZATION AND ARCHITECTURE
COE 394: DIGITAL DESIGN LABORATORY
COE 395: MICROPROCESSOR LABORATORY
CIS 280: PROGRAM LANGUAGE CONCEPT
CIS 332: PRINCIPLES OF OPERATING SYSTEMS

The electrical and computer engineering undergraduate programs are carefully crafted to provide students a rich blend of state-of-the-art education and real-world experience.



Year 4: Computer Engineering Technical Specialization Track

TECHNICAL TRACK SEQUENCE:

3 COURSES, 1 LAB AND 2 TECHNICAL ELECTIVES IN AN AREA OF SPECIALIZATION

COE 485: COMPUTER ENGINEERING DESIGN LABORATORY

COE 495: COMPUTER ENGINEERING PROJECT

WHAT OTHER WAYS ARE THERE TO SHAPE MY ACADEMIC PROGRAM?

NJIT offers a variety of ways to help you design an educational program that suits your career goals and interests:

■ Albert Dorman Honors College

Students who demonstrated superior levels of achievement in high school can continue on a challenging leadership track at NJIT's Albert Dorman Honors College.

honors.njit.edu

■ Cooperative Education

Many students elect for one or more semesters of Cooperative Education, earning academic credit and salary while gaining real-world experience at area businesses.

www.njit.edu/CDS/StudentServices/Coop.htm

■ Research Opportunities

Undergraduates have access to NJIT's engineering and computing laboratories. Faculty encourage undergraduate participation on research teams through the University Research Experience Program.

■ Collaboration Programs with Rutgers-Newark

NJIT students may enrich their educational experience by enrolling in courses at nearby Rutgers University-Newark in such disciplines as art, music, languages, biological sciences, and geology.

rutgers-newark.rutgers.edu/

IS FINANCIAL AID AVAILABLE?

The Office of Student Financial Aid Services helps NJIT students to obtain funding to support their educational costs. The university encourages all students to apply for financial aid.

<http://www.njit.edu/Directory/Admin/Admissions/finaid.html/>

FOR FURTHER INFORMATION

Contact: Professor Edwin Hou
Department of Electrical
and Computer Engineering
New Jersey Institute of Technology
University Heights
Newark, New Jersey 07102-1982
E-mail: hou@njit.edu
Phone: (973) 596-3521
www.njit.edu/ece

Office of University Admissions
New Jersey Institute of Technology
University Heights
Newark, New Jersey 07102-1982
E-mail: admissions@njit.edu
Phone: (973) 596-3300
www.njit.edu/Admissions/

NJIT does not discriminate on the basis of sex, sexual orientation, race, age, religion, national or ethnic origin, veteran's status or handicap in its educational programs, activities or employment policies. Campus facilities are accessible to the disabled.