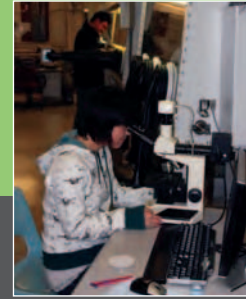


UB Department of Electrical Engineering (EE) BS in Electrical Engineering



Hands-on laboratory experience is an essential component of our educational program.

Facts about EE@UB

Stats

Full-time faculty: 26

Average starting salary:
\$61,021

News & Events

News and seminars in the Department are posted on the departmental webpage. Events run by the School and various engineering student organizations are open for undergraduate participation.

Opportunities for Students

Research is available to undergraduates on-campus through programs such as those offered by the Center for Undergraduate Research & Creative Activities.

Degrees offered

BS, MS, MEng, PhD
A five-year BS EE + MBA degree is also available

Electrical Engineers: Make Life Enjoyable

Electrical engineers benefit society by implementing electrical, electronic, and optoelectronic devices and systems. A few examples are:

- Biomedical sensors, instruments, & imaging
- Computers & networking
- Energy conversion & storage
- Fiber-optic & wireless communications
- Global positioning & guidance
- Handheld electronic gadgets
- Lasers & light-emitting devices
- Multimedia entertainment & games
- Power generation & control
- Radio-frequency identification (RFID) devices
- Robotic Systems

Electrical Engineers: Lead to a Better Future

Electrical engineers manipulate electrons and photons to develop better, faster, and more efficient electrical, electronic, and optoelectronic devices and systems. Examples of contemporary challenges include:

- Efficient and renewable energy systems
- Every day applications of new technologies
- Fast access, storage, efficient transport, and logical use of information
- Health care and environmental concerns

Placement Opportunities for Electrical Engineers

Electrical engineers find employment opportunities in a variety of fields, including research, design, technical sales, and even law. Our graduates have been hired by Cisco, Hewlett-Packard, Intel, AMD, IBM, Ford, General Electric, General Motors, Lockheed Martin, Alcatel-Lucent, Moog, Micron, Motorola, National Grid, Nokia, Qualcomm, Rockwell, Sun Microsystems, and Texas Instruments, and many others.

Curriculum Overview

Freshman – Sophomore

The first two years build the basic engineering and mathematics skills needed for the practice of electrical engineering. Suggested introductory courses are chemistry for engineers, engineering solutions, two semesters of calculus, one semester of circuit analysis, digital principals, and signals and two to three semesters of physics.

Junior

The third year develops the foundation of electrical engineering. Students learn communications, computers and systems, semiconductors and electronics through courses in electronics, labs, microprocessors, microcomputers, probability, and communications.

Senior

The material from the first three years forms a solid foundation for exploring specific applications. Hands-on laboratory and project experiences allow our seniors to gain real-world experience and to prepare for the job market or further study.

Specialization

By selecting technical electives, students can specialize in one of five areas:

- Digital and Analog Electronics & Instrumentation
- Communications and Signals
- Energy Systems
- Nanoelectronics and Photonics
- RF/Microwave and Communications Electronics



Barbara & Jack Davis Hall, a new home of the EE and CSE departments



A new 130,000-sq.-foot. building will soon be open to house EE. Credit: Renderings by Perkins + Will.

Did You Know?

Majors that complement electrical engineering include Business Administration, Computer Engineering, and Engineering Physics. For example, students can have a double major in Electrical Engineering and Computer Engineering. A student in EE can also get an MBA in addition to a BS in EE by following the EE/MBA path through our partnership with the School of Management.

UB Department of Electrical Engineering (EE) BS in Electrical Engineering

Did You Know?

In the US, there are more than two million engineers. More than 25% of engineering jobs are in electrical engineering, which is one of the top 10 bachelor's degrees in demand, according to the National Association of Colleges and Employers (NACE) 2008 Job Outlook.

Student Excellence

Claire Lochner and Christopher Llop were awarded prestigious national scholarships during the 2008-09 academic year. Llop was one of 80 students selected from 510 applicants for the Morris K. Udall Scholarship and Lochner was one of 320 students selected from nearly 1,100 applicants for the Barry M. Goldwater Scholarship.



Scholarship winners Claire Lochner and Christopher Llop.

student employment programs: please see the School's Engineering Career Institute and internship list for further information.

Undergraduate Research

Undergraduates are encouraged to become involved in meaningful research with distinguished EE faculty. Such research can add impressive experience to a resume and teach lessons that will last a lifetime. Many EE undergraduates are supported by on-campus programs, such as CSTEP (Collegiate Science and Technology Entry Program), The Honors College, McNair Program, Acker Scholars, University Scholars, or externally-funded scholarships and fellowships. The EE department can assist students in locating research opportunities.



"Research in the Energy Systems Institute has been a significant learning experience for me, professionally and personally. It has supplemented my knowledge gained from classes and also prepared me for the work force. In my academic journey, research has been one of my greatest milestones and has placed me on the right path to set even higher goals and aspirations."

- Antonio Upia (Class of 2011)

Did You Know?

UB Engineering can name Research Professor Wilson Greatbatch (MS EE 1957, Hon ScD 1984) as an alumnus. Greatbatch is the inventor who advanced the development of early battery-operated implantable cardiac pacemakers. Greatbatch holds over 220 patents, and among the many distinctions he holds, he is a member of the National Inventors Hall of Fame and the National Academy of Engineering.



Engineers for a Sustainable World.

with an opportunity to augment their educational experience and get the most out of their engineering degree.

One of the fastest growing engineering student activities, Engineers for a Sustainable World (ESW), works actively within our university and our community to implement projects that contribute to sustainability, while also striving to incorporate sustainability into the study and practice of all engineers. In addition to their ongoing projects, which include work on alternative power sources and creating sustainable food sources on UB's campus, this group hosted the 2009 National Convention for their organization.

In addition to ESW, there are many other student organizations available to our undergraduates. Other student chapters and groups include: Institute of Electrical and Electronics Engineers, Society of Women Engineers, Society of Hispanic Professional Engineers, UB Robotics, and several engineering honor societies.



Successful Alumni

Christopher Scolese (BS EE '78) was honored with the Clifford C. Furnas Memorial Award, presented to a graduate with distinguished achievements in engineering or science. Scolese is NASA chief engineer, leading a technical team of 30,000 responsible for the direction, oversight, and assessment for all of the agency's programs. Scolese has received several prestigious awards, including two Presidential Rank Awards of Meritorious Service, the AIAA National Capital

Section Young Engineer of the Year Award, and two NASA Outstanding Leadership Medals.



Award-Winning Faculty

The Electrical Engineering department has recently grown to 26 faculty members, recognized worldwide for their research and teaching accomplishments. One example is Greatbatch Professor Esther S. Takeuchi, whose research in lithium batteries for implantable devices saves lives through its numerous biomedical applications. She holds nearly 150 patents—more than any other woman in the U.S.—and was presented

with the National Medal of Technology by President Obama in 2009.

To apply, please visit admissions.buffalo.edu.

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