



COLLEGE OF
ENGINEERING

Department of Electrical & Computer Engineering
Michigan State University
2120 Engineering Building
East Lansing, MI 48824-1226

electrical
and computer
engineering



AT A GLANCE
2010

MICHIGAN STATE
UNIVERSITY

ELECTRICAL & COMPUTER ENGINEERING

The electrical and computer engineering profession is dynamic and ever changing. Before today's graduates celebrate ten years in the profession, advances in nanoscale technologies, computation, ubiquitous communications, biological and biomedical engineering, energy technology, and materials processing — and technical fields that have not yet been conceived — will require leadership and innovation from ECE specialists. An ECE degree also offers an excellent background for advanced training in medicine, law, business, and other analytical disciplines.



With an eye to the future and the challenges and excitement it holds, we strive at MSU to continually improve program quality — in classroom instruction, laboratory research, industrial internship experiences, international exchange programs, and project teaming.

Our students acquire a solid foundation in electrical and computer engineering theory. They gain experience in critical thinking and explore new and innovative ways to address advanced engineering problems. The undergraduate capstone class engages students in cross-functional teaming and open-ended problem solving. As a result, our students learn how to work with people from other science or engineering fields and are prepared for true-to-life work environments.

Visit our Web site, or visit us in person to see the possibilities available in a growing, research-centered, student-oriented department. You will be among world-class researchers and students who are leading the evolution of the profession.

UNDERGRADUATE PROGRAM

Undergraduates receive excellent support at MSU, including easy access to our faculty and the use of state-of-the-art facilities.

- All faculty members are actively involved with undergraduate students.
- The capstone course, where all seniors participate in a major engineering design project, involves 10 faculty members.
- Each year, students have the option of spending a semester in Kaiserslautern, Germany, and the University of Cassino in Italy through the Engineering Study Abroad program.
- The department's support of experiential education options has resulted in more students participating in pre-approved co-op, internship, and/or independent study experiences facilitated by faculty mentors.
- Each year, approximately 450 undergraduates are enrolled and more than 100 are awarded degrees.
- The average starting salary for ECE graduates in 2009 was \$60,000.





Electrical and computer engineering students have gone on to careers in manufacturing, research, and service in the following industries: automotive, semiconductors, aerospace, energy and electric power, telecommunications, and computers.

GRADUATE PROGRAM

The ECE graduate program is built on the quality of our faculty and their research. Each year approximately 200 students are enrolled in our program.

- The Engineering Sloan Scholars Program — in combination with other programs, including the GE Fund Faculty for the Future Program — continues to support a strong minority student recruitment effort.
- Currently, ECE has the largest number of under-represented minority graduate students among the Big Ten engineering schools.
- Most graduate students receive financial support through teaching or research assistantships.



RESEARCH PARTNERS

- The Alfred P. Sloan Foundation
- The Boeing Company
- Boston Advanced Technologies, Inc.
- Consumers Energy
- Defense Advanced Research Projects Agency and other defense agencies, including the Office of Naval Research, Air Force Office of Scientific Research, and Multidisciplinary University Research Initiative (MURI)
- Delphi Automotive Systems
- DENSO Corp.
- Electric Power Research Institute
- Electronics and Telecommunications Research Institute (ETRI)
- Fraunhofer USA
- General Electric Company
- General Motors Corporation
- Herrick Foundation
- Li Creative Technologies, Inc.
- Michigan Economic Development Corporation
- Microsoft Corporation
- NASA
- National Institutes of Health
- National Science Foundation
- PPG Industries, Inc.
- PICOAL Inc.
- Science Applications International Corp.
- Toyota
- U.S. Civilian Research Development Foundation
- U.S. Department of Education
- Universal Technology Corporation
- Zhuzhou Electric Locomotive Research Institute–MSU Center (ZELRI-MSU) / Zhuzhou Times Electric Group

RESEARCH

Our department is home to one of the fastest-growing research programs in the country. Sponsored research expenditures for 2008-09 totaled \$10.4 million. While our faculty are continually investigating new areas of research, our focus remains on the following:

Computer Engineering

- Computer Architecture
- Computer Networks
- VLSI/Microelectronics

Electrosciences

- Electromagnetics
- Electronic Materials and Devices
- Nondestructive Evaluation

Systems

- Biomedical Engineering
- Control and Robotics
- Power
- Signal Processing and Communications



FACULTY AND STAFF

ECE comprises 40 faculty members and 14 academic specialists and support staff.

- Several faculty members have authored books and research monographs.
- Most of our senior faculty members are fellows of national professional societies.
- Ten of our faculty members have received NSF CAREER Awards.
- Professor Percy Pierre was elected to the National Academy of Engineering in 2009.



RESEARCH CENTERS

- The Fraunhofer USA Center for Coatings and Laser Applications
- The ZELRI-MSU Research Center for Power Electronics Systems
- The Engineering Research Center for Wireless Integrated MicroSystems
- Collaborations with MSU's High Performance Computing Center (HPCC)

FOR MORE INFORMATION

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