



ELECTRICAL ENGINEERING

Program Objectives

Electrical engineering is a challenging profession concerned with the design, development, fabrication, and control of electrical and electronic devices and systems. Students with a particular interest in the design and application of computer hardware and software systems should elect the computer engineering concentration. An electrical engineering minor is also available.

The undergraduate program is built on a foundation of physics, chemistry, and mathematics. It is broad-based but there are opportunities to specialize, particularly in digital systems, signal and image processing, robotics and controls, and in microelectronics including VLSI and semiconductor technology. Computer usage is integrated throughout the curriculum. The goal of the program is that students will be technically competent, will have good communications skills, be able to work as part of a team or independently, function well in a multi-skills setting, and be prepared for a lifetime of learning and professional growth.

Degrees & Concentrations Offered

Graduation Planner: usm.maine.edu/advising/degreeplanning

Degree Offered: Bachelor of Science

Majors Offered: Electrical Engineering, Mechanical Engineering

Concentrations Offered: Computer Engineering

Minors Offered: Electrical Engineering, Mechanical Engineering

Department of Engineering

Gorham Campus, 149 John Mitchell Center
(207) 780-5287

Web Address: usm.maine.edu/engineering

Department News: usm.maine.edu/engineering/news

Career Possibilities*

Associate Engineer
Broadcast Engineer
Circuits Engineer
Design Engineer
E&I Maintenance Supervisor
Electrical Controls Engineer
Electrical Design Engineer
Electrical Engineer
Electrical Project Engineer
Hardware Design Engineer
Integrated Systems Engineer
Power Systems Engineer
Project Engineer
Test Engineer

* Additional education, training or experience may be required.

Acquired Transferable Skills

Active Listening
Complex Problem Solving
Critical Thinking
Judgment & Decision Making
Mathematics
Monitoring
Operations Analysis
Reading Comprehension
Speaking
Time Management
Writing

For more information on transferable skills go to:
usm.maine.edu/community-engagement-career-development/career-tools

What can I do with this major?*

AREA	EMPLOYERS	INFORMATION/STRATEGIES
Automatic Controls	Industries including: Aerospace, automotive, computer & electronics manufacturers, transportation, telecommunications, guidance & control systems, defense, electric power & energy, semiconductor, electronics, environmental, medical equipment, chemical, pharmaceutical, computer, pulp, paper, textile, metal	<ul style="list-style-type: none"> • Broad discipline applies engineering principles to the design and production of electronic systems and electrical devices. • Prepare for a course load including engineering fundamentals, math, science and electrical engineering. • Pursue design projects and laboratory experience throughout college career.
Bioelectronics		
Digital Systems		
Electromagnetics		
	Scientific service companies	
Analog Electronics	Technical service companies (intelligence, information systems, defense)	<ul style="list-style-type: none"> • Seek related experience through research, internships, co-ops or part-time employment.
Power & Energy Systems	Federal government: Armed forces National Institute of Standards & Technology Dept. of Defense, Energy, & Transportation National Institutes of Health	<ul style="list-style-type: none"> • Join student chapters of industry organizations such as Institute for Electrical and Electronics Engineers (IEEE) to develop communication and leadership skills, to participate in competitions and to take advantage of professional networking opportunities.
Communications & Signal Processing		

*To learn about these areas and much more visit: whatcanidowiththismajor.com/major • © 2011 What Can I Do With This Major

Enrichment Opportunities

Internships

For more information contact the Department of Engineering.
usm.maine.edu/cecd

Study Abroad

For more information contact the USM Office of International Programs.
usm.maine.edu/international/study-abroad

Clubs & Organizations

Leadership Development Board
Student Senate. For a complete list of student organizations:
webapp.usm.maine.edu/pathways/list

USM Corporate Partners

The USM Corporate Partners are over 350 business people, from nearly 100 companies. usm.maine.edu/corporatepartners

Helpful Career Links

USMCareerConnections:

USM's career network for job and internship searches. usm.maine.edu/community-engagement-career-development/usmcareerconnections

O*NET OnLine:

Learn more about a career opportunity by researching it with O*NET. onetonline.org

Occupational Outlook Handbook:

Learn more about a career opportunity by researching it with OOH. bls.gov/oooh

PROFESSIONAL ASSOCIATIONS To name a few...

[TSA – Technology Student Association](#)

[ASME – American Society of Mechanical Engineers](#)

[NSPE – National Society of Professional Engineers](#)

[NAE – National Academy of Engineering](#)

[EWB-USA – Engineers Without Borders USA](#)



PORTLAND • GORHAM • LEWISTON • ONLINE

Office of Community Engagement and Career Development • usm.maine.edu/cecd

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