



Carnegie Mellon University

GRADUATE STUDY IN ENERGY, ENVIRONMENT, & SUSTAINABILITY



Architecture

Art

Chemical Engineering

Chemistry

Civil & Environmental Engineering

Electrical and Computer Engineering

Energy Science, Technology & Policy

Engineering and Public Policy

Engineering and Technology

Innovation Management

History

Materials Science & Engineering

Mechanical Engineering

Public Policy and Management

Carnegie Mellon's Interdisciplinary Approach

Carnegie Mellon University takes a unique interdisciplinary approach to teaching and research - encouraging collaboration among students and faculty across departments and colleges. This unique perspective fosters the growth of innovative discoveries that provide solutions to real-world problems in a variety of disciplines.

Several interdisciplinary programs for graduate study have grown from this approach. This brochure provides an overview of graduate programs offered at Carnegie Mellon that focus on energy, the environment and sustainability. We encourage you to visit the websites listed. Additional research opportunities exist with the research centers listed on the back page.

Funding for Graduate Study

Doctoral programs at Carnegie Mellon usually provide tuition and stipends for their students. Master's programs are typically not funded, but partial departmental assistance may be available. Additionally, various types of financial aid are available for master's and Ph.D. programs.

For more information, contact the individual departments or Enrollment Services at:
www.cmu.edu/finaid/graduate

Admissions to Graduate Programs

Admission to graduate programs is handled by the individual academic departments and requirements and deadlines vary from department to department. For detailed information on the individual programs, refer to the department website provided at the end of each section.

ARCHITECTURE

Focus on sustainable design and technology with a unique emphasis on sustainable urbanism, committed to improving the quality of life and environmental sustainability.

M.S. in Architecture-Engineering-Construction Management (AECM)

M.S. in Building Performance and Diagnostics

M.S. in Computational Design

M.S. in Sustainable Design

Master's of Urban Design

Ph.D. in Architecture

Ph.D. in Architecture-Engineering-Construction Management (AECM)

Ph.D. in Building Performance and Diagnostics

Ph.D. in Computational Design

www.cmu.edu/architecture/programs/graduate

ART

Work in this area offers many opportunities for environmentally focused study and expression.

M.F.A. in Art

www.cmu.edu/art/programs/mfa

CHEMICAL ENGINEERING

Focus on problems in bioengineering, catalysis and surface science, envirochemical engineering, process systems engineering, energy science and engineering, and complex fluids engineering. Energy research is carried out in collaboration with the National Energy Technology Laboratory (NETL), a Department of Energy National Laboratory.

M.S. in Chemical Engineering and Colloids, Polymers and Surfaces

www.cheme.cmu.edu/prospective/mscps

Master of Chemical Engineering (M.Ch.E.)

M.S. in Chemical Engineering

Ph.D. in Chemical Engineering

www.cheme.cmu.edu/prospective/grad_index.htm

CHEMISTRY

Focus on sustainable chemistry to replace polluting technologies with nontoxic products and processes; renewable energy; polymerization in environmentally friendly media; and the influence of organic oxidation mechanisms on the atmosphere, human health and global climate.

Ph.D. in Chemistry

www.chem.cmu.edu/grad

CIVIL & ENVIRONMENTAL ENGINEERING

Focus on air and water quality engineering, science, and modeling, environmental nanotechnology, environment-energy studies, environmental sensing, green design and construction, industrial ecology, life cycle assessment, remediation, risk assessment, sustainable engineering, and climate change.

M.S. in Civil and Environmental Engineering

M.S. in Advanced Infrastructure Systems

M.S. in Environmental Engineering

M.S. in Environmental Management and Science

Ph.D. in Advanced Infrastructure Systems

Ph.D. in Civil and Environmental Engineering

Ph.D. in Civil and Environmental Engineering and Engineering and Public Policy

Ph.D. in Environmental Engineering

Ph.D. in Environmental Management and Science

www.ce.cmu.edu/graduate

ELECTRICAL AND COMPUTER ENGINEERING

Research addresses challenges in the evolving electric power sector using fundamentals from engineering, computer science, economics, policy and business with a focus on large-scale systems modeling and simulation, power systems control and pricing algorithms, and critical infrastructures/interdependencies.

M.S. in Electrical and Computer Engineering

Ph.D. in Electrical and Computer Engineering

www.ece.cmu.edu/programs-admissions

ENERGY SCIENCE, TECHNOLOGY & POLICY

A multidisciplinary program within the College of Engineering which will position graduates to develop creative and sustainable solutions to solve world-wide energy science and technology problems from harvesting and conversion of energy to distribution, demand and usage with attention to policy and economics.

M.S. in Energy Science, Technology and Policy

<http://estp.materials.cmu.edu>

ENGINEERING AND PUBLIC POLICY

Research addresses topics such as climate change, life-cycle analysis, the electricity system, clean coal, renewables, particle air pollution, water supply and quality, technical and policy innovation, and both the technical and social aspects of sustainability.

Ph.D. in Engineering & Public Policy

Joint PhDs are available between EPP and all engineering departments, Computer Science, and Statistics
www.epp.cmu.edu/graduate/index.html

ENGINEERING AND TECHNOLOGY INNOVATION MANAGEMENT

Prepares students for meaningful careers as leaders in innovation and the strategic management of technology in areas including nanotechnology, critical infrastructure, biomedical engineering, the environment, energy, and information technology.

M.S. in Engineering and Technology Innovation Management

www.cit.cmu.edu/etim

HISTORY

Research areas include the environmental history of cities and the impact of their technological systems; the social and environmental impacts of export commodities; and the interdisciplinary exploration of environmental technologies, which abate or eliminate the negative environmental effects of other technologies.

Ph.D. in History

www.history.cmu.edu/graduate

MATERIALS SCIENCE & ENGINEERING

Research in this area is conducted in a number of environmentally related fields, with a focus on energy efficient systems and alternate energy production and storage, including research on efficient generation of electricity, efficient steelmaking, solid oxide fuel cells, batteries, and photocatalysts.

M.S. in Materials Science

M.S. in Materials Science and Engineering

Ph.D. in Materials Science and Engineering

www.materials.cmu.edu/grad

MECHANICAL ENGINEERING

Focus on areas such as energy technologies, air quality and global change, energy consumption and environmental impact of buildings, green design and the impact of environmental regulation on product design.

M.S. in Mechanical Engineering

Ph.D. in Mechanical Engineering

www.cmu.edu/me/graduate

PUBLIC POLICY AND MANAGEMENT

Allows students to develop leadership, quantitative analysis and technology skills with a focus on environmental policy.

M.S. in Public Policy and Management

www.heinz.cmu.edu/msppm

Special Opportunities

For centralized information about opportunities in environmental sustainability at Carnegie Mellon University go to: www.cmu.edu/environment

The Steinbrenner Institute for Environmental Education and Research was formed to demonstrate Carnegie Mellon University's commitment to environmental innovation. The Institute provides funding through fellowship programs and grants to talented graduate school students, promotes and supports environmental initiatives on campus, and facilitates connections and coordinates new research initiatives. For more information on the Institute visit

www.cmu.edu/environment/steinbrenner/

The Wilton E. Scott Institute for Energy Innovation is focused on developing and demonstrating the technologies, systems and policies needed to make the transition to a sustainable energy future. Using Carnegie Mellon University's expertise in integrated systems—which includes problem solving—and an understanding of the intersection of energy and public policy, the institute concentrates on energy efficiencies and reliability, as well as smart operations, materials and processes.

<http://www.cmu.edu/energy/>

Detailed information can be found through each department. General information regarding graduate education can be found at: www.cmu.edu/graduate

General inquiries can be directed to: grad-ed@cmu.edu.

Affiliated Research Centers

Carnegie Mellon encourages collaboration across departmental, college and institutional boundaries, continuing the university's strong tradition of interdisciplinary research. Many faculty members have joint appointments, and adjunct faculty members complete the wide array of expertise available to students. Through research, coursework and seminars, students enjoy opportunities to expand their knowledge in interrelated areas. The centers listed here also provide opportunities for students to broaden their study.

Center for Atmospheric Particle Studies
<http://caps.web.cmu.edu/>

Center for Building Performance and Diagnostics
www.cmu.edu/architecture/research/cbpd/absic-cbpd.html

Climate Decision Making Center
www.cdmc.epp.cmu.edu/

Design Decisions Laboratory
www.cmu.edu/me/ddl/

Electricity Industry Center
<http://wpweb2.tepper.cmu.edu/ceic/>

Center for the Environmental Implications of Nanotechnology (CEINT)
www.ices.cmu.edu/ceint/

Center for Ethics and Policy
www.hss.cmu.edu/cep/

Green Design Institute
www.ce.cmu.edu/GreenDesign/

The Institute for Green Science
www.chem.cmu.edu/groups/Collins/

Center for International Corporate Responsibility
<http://wpweb2.tepper.cmu.edu/cicr>

Center for Iron and Steelmaking Research
<http://neon.memc.cmu.edu/cisr/index.html>

Living Environments Lab
www.living-environments.net/

National Energy Technology Laboratory (NETL)
www.netl.doe.gov/rua/index.html

Remaking Cities Institute
www.cmu.edu/rci/

Center for Risk Perception and Communication
<http://sds.hss.cmu.edu/risk/Home.htm>

Scott Institute for Energy Innovation
www.cmu.edu/energy/

Center for Sensed Critical Infrastructure Research (CenSCIR)
www.ices.cmu.edu/censcir/

Smart Grid Research Center
www.src.org/program/eri/sgrc/

Steinbrenner Institute for Environmental Education and Research
www.cmu.edu/environment/steinbrenner/

STUDIO for Creative Inquiry
www.cmu.edu/studio/

Center for Sustainable Engineering
<http://www.cit.cmu.edu/research/centers/cse.html>

Center for Water Quality in Urban Environmental Systems (WaterQUEST)
www.ce.cmu.edu/~wquest/

Western Pennsylvania Brownfields Center
www.cmu.edu/steinbrenner/brownfields/

Carnegie Mellon University

Carnegie Mellon University is a private, internationally ranked research university with programs in areas ranging from science, technology and business, to public policy, the humanities and the fine arts. More than 12,000 students in the university's seven schools and colleges benefit from a small student-to-faculty ratio and an education characterized by its focus on creating and implementing solutions for real problems, interdisciplinary collaboration and innovation. A global university, Carnegie Mellon's main campus in the United States is in Pittsburgh, Pa. It has campuses in California's Silicon Valley and Qatar, and degree granting programs in Africa, Asia, Australia, Europe, and Latin America.

www.cmu.edu

Carnegie Mellon University does not discriminate in admission, employment, or administration of its programs or activities on the basis of race, color, national origin, sex, handicap or disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. Furthermore, Carnegie Mellon University does not discriminate and is required not to discriminate in violation of federal, state, or local laws or executive orders. Inquiries concerning the application of and compliance with this statement should be directed to the vice president for campus affairs, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-2056.

Carnegie Mellon University publishes an annual campus security and fire safety report describing the university's security, alcohol and drug, sexual assault, and fire safety policies and containing statistics about the number and type of crimes committed on the campus and the number and cause of fires in campus residence facilities during the preceding three years. You can obtain a copy by contacting the Carnegie Mellon Police Department at 412-268-2323. The annual security and fire safety report is also available online at www.cmu.edu/police/annualreports.

For more information regarding the statement of assurance please visit: www.cmu.edu/policies/documents/SoA.html.
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