Green Engineering

Issues of sustainability are of increasing concern for the developed and the developing nations of the world. Engineers have to take a central role in providing the needed solutions and associated leadership to address those issues. Engineers make fundamental decisions in the design, implementation and use of products, processes and systems that impact all facets of our lives. Those decisions can either contribute to an exacerbation of the negative impact of human endeavors on the environment, or they can be the means to reduce that impact.

Synergies among engineering and science disciplines at Stevens Institute of Technology have presented the opportunity to develop new programs, and Stevens is proud to introduce a new minor in Green Engineering, which takes a holistic look at how man interacts with the environment.

Objectives and Coursework

The minor in Green Engineering is used to relate how engineers do their work to improve the environment as they develop or manufacture products or build electrical systems. Significant interest is growing in determining the carbon footprint of any process. The Stevens program will:

- Provide you with a holistic, systems perspective to the impact of human activity on the environment, including the role of engineering.
- Educate you in the concepts of sustainable development and industrial ecology.
- Provide insight into sustainability tools and metrics such as life cycle analysis and ecological footprint.
- Show you how engineering decisions, particularly with regard to design, can support sustainability goals.
- Develop awareness of the ethical, economic, social and political dimensions that influence sustainability.

The minor will consist of six courses – two core courses, two technical electives, and two contextual courses. Some topics that may be covered include:

- Sustainability in environmental engineering
- Green construction
- Environmentally sustainable chemicals
- Fuel cells
- Alternative energy

As a component of your Senior Design Project, the capstone project in which you take what you have learned in the classroom and apply it to a major design project, sustainable engineering will be key. Currently a “green building” project incorporates the fields of civil, mechanical and electrical engineering.

At Stevens, you will also have the opportunity to take your interest in sustainability into your extracurricular activities. Our chapter of Engineers Without Borders, for example, is planning a project to create bio-fuel from a local crop in the Dominican Republic.

Sustainability in Action

- A group of Stevens students received an Honorable Mention designation from the U.S. Environmental Protection Agency (EPA) for their project submitted for the 2007 "People, Prosperity and the Planet Student Design Competition for Sustainability (P3)." They are developing a process to turn ocean wave energy into electricity. The process produces no greenhouse gases and may become part of a worldwide sustainable energy resource.
- A new fuel cell design that would convert methanol into hydrogen could provide 50 hours' worth of juice to laptops and other portable electronics. The compact device – unveiled by Ronald Besser, a professor of chemical engineering at Stevens – could be instantly recharged by swapping in a fuel pack.
- Professor Zhenqi Zhu of Stevens' Department of Mechanical Engineering has received funding to study the processes and systems used for producing clean coal energy and renewable energy.
- The Center for Science Writings has held a number of events dedicated to issues of sustainability, including green engineering, global warming, and a lecture by Edward O. Wilson regarding conservation issues.

Office of Undergraduate Admissions

Castle Point on Hudson

Hoboken, NJ 07030

ph: 800.458.5323

fax: 201.216.8348

email: admissions@stevens.edu

www.stevens.edu

STEVENS
Institute of Technology