Wind Energy

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Undergraduate certificate: wind energy
Web site: http://www.engineering.uiowa.edu/mie/undergraduate-program/certificate-wind-energy

Wind energy has become a major source of clean energy and is expected to grow over the coming decades. That growth will create new jobs and a need for professionals who have diverse backgrounds and knowledge of wind energy fundamentals. The Certificate in Wind Energy introduces undergraduate students to wind energy. The program is interdisciplinary, integrating course work and faculty expertise from the Departments of Mechanical and Industrial Engineering, Civil and Environmental Engineering, and Electrical and Computer Engineering (College of Engineering) and the Department of Geographical and Sustainability Sciences (College of Liberal Arts and Sciences).

Undergraduate Program of Study
- Certificate in Wind Energy

Certificate
The Certificate in Wind Energy requires 18 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

College of Engineering students earning the certificate are advised by the Department of Mechanical and Industrial Engineering; College of Liberal Arts and Sciences students are advised by the Department of Geographical and Sustainability Sciences.

Students must apply to enter the certificate program by completing the Certificate in Wind Energy Application on the certificate's web site. The site also provides information about wind energy research at the University and graduate study in wind power management.

Work for the certificate focuses on energy, environment, and information science and includes core courses and electives. Mechanical engineering students may use the certificate as a tailored engineering focus area by adding an approved math/science elective.

Several certificate courses have prerequisites; students must complete all of a course's prerequisites before they may register for the course. Prerequisites do not count toward the 18 s.h. required for the certificate. Prerequisites for certificate courses are listed on the Certificate in Wind Energy web site.

The Certificate in Wind Energy requires the following course work.

CORE COURSES
Both of these:

- GEOG:3560 Spatial Analyses of Wind Energy 3 s.h.
- IE:4550 Wind Power Management 3 s.h.

ELECTIVES
Students complete 12 s.h. in courses chosen from these:

- CBE:2030 Energy and Society 3 s.h.
- CBE:3160 Engineering Analysis of Alternative Energy Systems 3 s.h.
- CBE:4410 Sustainable Systems 3 s.h.
- ECE:5620 Electric Power Systems 3 s.h.
- ECE:5630 Sustainable Energy Conversion 3 s.h.
- GEOG:2310 Introduction to Climatology 3 s.h.
- GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.
- GEOG:3520 GIS for Environmental Studies 3 s.h.
- GEOG:3540 Introduction to Geographic Visualization 3 s.h.
- GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
- GEOG:3780 U.S. Energy Policy in Global Context 3 s.h.
- GEOG:4010 Field Methods in Physical Geography 3 s.h.
- GEOG:4030 Senior Project Seminar (registration required for wind energy project credit) 3 s.h.
- GEOG:4500 Applications in Environmental Remote Sensing 4 s.h.
- GEOG:4520 GIS for Environmental Studies: Applications 3 s.h.
- GEOG:4580 Introduction to Geographic Databases 3 s.h.
- GEOG:4750 Environmental Impact Analysis 4 s.h.
- ME:4142 Wind Turbine Aerodynamics 3 s.h.
- ME:4164 Fundamentals of Wind Turbines arr.

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