

Fall 2009 course at the  
University of Northern Iowa

# 330:059, 330:159g Wind Energy Applications in Iowa

2 credit hours

## Goal

To develop an understanding of wind energy with respect to environmental, political, economic and technological issues.

## Details

### Dates, times, location

Aug 25–Dec 15, 2009; Tuesdays, 4:00 – 5:50 pm  
Iowa Metal Spinners, 7314 Chancellor Dr, Cedar Falls

### Instructors

Recayi Pecen, Associate Professor in Industrial  
Technology along with other UNI faculty

### Credit, tuition, fees

\$480 for 2 hours undergraduate credit

\$748 for 2 hours graduate credit\*

Technology fees will also apply.

\*Additional work required for graduate level credit

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## Description

This course covers a wide variety of topics providing a substantial overview of wind energy, its use and the ramifications of this use, as well as a review of history and driving forces for the economic development of wind energy. Both large scale and small scale wind turbines are included, along with their locations and connections to power grids, and issues of power distribution and transmission.

Geospatial technology such as Geographical Information Systems (GIS) and Global Positioning System (GPS) assists in successful placement of turbines in accordance with meteorology, soil conditions and surrounding land uses. Relevant measurement systems assist in understanding a variety of wind's variable causes, cycles and contributing climatic factors.

Efficient and sustainable wind turbines require appropriate materials developed through an understanding of material characteristics, processes, properties and testing. Sustainable electric power generation involves data generation, instrumentation and monitoring of existing and developing equipment.

Growth in wind energy use has numerous political and economic implications including new and expanding career opportunities in the green energy future.