



WIND ENERGY SYSTEMS DESIGN AND INSTALLATION

Course Number	RE 207
Course Name	WIND ENERGY SYSTEMS DESIGN AND INSTALLATION
Credit Value (Breakdown of theory and lab credits)	4, 2T+2S
Catalog Course Description	In this course you will study and discuss electrical energy production from the wind, including mechanical windmill water pumps; generator types from propeller driven units on towers to vertical axis turbines and emerging designs; the installation and maintenance of systems and safety concerns. Classes will take place on- and off-campus. Prerequisites: ENG 108N, MATH 100N, RE 103, and ECET 160. Recommended Co-requisite: ELEC 190. (4, 2T+2S)
Student Learning Outcomes/Objectives /Competencies of the Course	<p>Students will</p> <ul style="list-style-type: none"> • develop historical and societal perspectives regarding the demand for mechanical and electrical power generation from the renewable wind using land and offshore turbines. • identify and mathematically model the wind turbine components, calculate the available wind power, predict mechanical loads based on design, and discuss the generation of electrical power. • numerically simulate the wind turbine dynamic system behavior with integration of components, sensors, and control for given application. • evaluate the environmental, political, and economic issues associated with wind energy.
College-Wide Student Learning Outcomes	Communication