

ENGR 4604: Distributed Generation & Smart Grids

3 Credit Hours

Prerequisite: Engineering Standing Requirements

The main objective of this course is to provide up-to-date knowledge about the technical and economic issues relating to the distribution generation. In addition to an introduction to various generating technologies, the course will include detailed discussions on the impacts of distributed generation to the power distribution system. The focus will be on electrical issues such as grid connection, control, and power quality. In addition, the economic and regulatory issues will be addressed. The course also introduces the smart grid, both supply-side and demand-side technologies, including advanced metering infrastructure, technologies for better control of the grid and interactions with loads that can be controlled to accommodate variations in supply-side resources.

ENGR 4801: Aircraft Propulsion

3 Credit Hours

Prerequisite: ENGR 3801 & Engineering Standing

This course involves preliminary design, subject to specifications, of an air-breathing engine for aircraft propulsion. This course discusses cycle calculations, installed performance and engine sizing information. Design and integration of components and support systems are explored. Propeller theory is introduced.

ENGR 4802: Helicopter Theory

3 Credit Hours

Prerequisite: ENGR 3801 & Engineering Standing

The course is designed for students interested in helicopter theory as an application of large scale complex system. It presents a comprehensive introduction to rotorcraft technology, covering a range of disciplines from design, aerodynamics and propulsion points of view. It teaches what a helicopter engineer or enthusiast needs to know to analyze an existing design or participate in the development of a new one. The course covers all aspects of hover, vertical flight and forward flight.