



*Introducing Specialization in
“Sustainable Energy Systems”
for Under-Graduate Students in Engineering at the
University of West Florida*

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About the specialization

- Objective : To introduce a specialization in “Sustainable Energy Systems” for Undergraduate Engineering students at University of West Florida (UWF) that could be used to educate
 - Industry professionals towards workforce development and
 - Non-engineering majors in sustainable energy.
- Courses have been designed from the perspective of energy system planning
 - Energy System Planning - always been complex and evolving rapidly during the past 10-15 years to accommodate dramatic changes in the industry - changes include the ongoing transformation of the nation’s generation portfolio from being heavily dependent on fossil fuels to one that is heavily dependent on renewables (especially wind and solar) and the need for operating competitive electricity markets.
 - Will assist professionals – to understand the limitations of present energy systems and lead us to a future in which we can continue to provide reliable and secure energy resources for improved human quality of life.
 - Coursework takes a systems level and interdisciplinary approach to solving seemingly intractable sustainable energy problems, as opposed to single disciplinary and locally optimized approaches destined to yield marginal positive impacts.
 - Electrical engineering-based but also covers a wider range of topics including economics, sustainability and environmental studies.

About the Department of ECE at UWF

- The Department of Electrical and Computer Engineering at UWF offers
 - Undergraduate degrees in Electrical and Computer Engineering (ABET accredited) and
 - Professional development courses in Power and Energy Engineering to Gulf Power, an electric utility owned by Southern Company.
The management and supervisors at Gulf Power are very pleased with the technical content and delivery of these courses and are eager to partner with UWF on this venture in sustainable energy systems engineering.
- With UWF's strong network of area partners in technology, military and other educational institutions, and with an expanding regional presence, the impact of this proposed program will be widely felt.
- Specialization on "Sustainable Energy Systems" will
 - Cater to the needs of working professional in the public or private sector, including public agencies, utilities involved with energy conservation, energy consultants, business owners and sustainability managers.
 - Educate students about sustainable energy management
 - Be offered through Continuing Education as certificate course and also as a minor for non-engineering students.

Courses under “Sustainable Energy Systems”

The proposed courses in this specialization are listed below

Required courses:

- Future energy systems
- Renewable energy systems
- Sustainable power systems-Planning, operation and markets
- Power electronics and drives

Elective course:

- Environmental law

Year-1	Fall	Future Energy Systems
	Spring	Renewable Energy Systems
Year-2	Fall	Sustainable Power Systems: Planning, Operation, and Markets
	Spring	Power Electronics and Drives
Elective	Fall/Spring	Environmental Law

Materials to be Developed and Used in the Courses

- As UWF is already conducting online classes for students from all over the country; the infrastructure for conducting online classes already exists at UWF.
- The University has electronic media and information and communication technology service called “elearning”. Course material will be distributed to the students for each of the above mentioned courses through eLearning.
- Audio and video recordings of lectures will be made available so that the students can listen to them during anytime from anyplace.
- Quizzes will be embedded in online course materials along with a system for grading them and notifying the student of his grades. Simulations, lecture notes and exams will be posted through eLearning.

Timeline for Development and Delivery of the Curricula:

For courses taught during Fall 2014 and Spring 2015

Month/Year	Activities
May-June/2014	Lecture presentations and study material preparation
July /2014	Lecture notes preparation
August/2014	Courses uploaded online for the fall semester
Dec 2014	Courses uploaded online for the spring semester

For courses taught during Fall 2015 and Spring 2016

Month/Year	Activities
May-June/2015	Lecture presentations and study material preparation
July/2015	Lecture notes preparation
August/2015	Courses uploaded online for the fall semester
Dec /2015	Courses uploaded online for the spring semester