

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

### **Progress Report May 2014**

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#### *Project Description*

The objective of this proposal is to introduce a specialization in “Sustainable Energy Systems” for Undergraduate Engineering students at the University of West Florida (UWF) that could also be used to educate industry professionals towards workforce development. University of West Florida in Pensacola is in the panhandle region and is home to Southern Company’s Gulf Power, an investor owned electric utility industry with nearly \$400,000 customers. Gulf Power offers internships and Co-Op opportunities for students studying at UWF. Due to the significance of sustainable energy in the power industry and with the smart grid evolution taking over the conventional electric grid, it is critical for the undergraduate students to learn about sustainable energy and how their integration into the grid would impact the economy, efficiency of transmission and distribution, and environment in the US. Hence the courses for specialization in “Sustainable Energy Systems” have been designed from the perspective of energy system planning, a subject that has always been complex and evolving rapidly during the past 10-15 years to accommodate dramatic changes in the industry. With this effort, a new certificate course on Sustainable Energy Systems will also be offered by Continuing Education Department of UWF.

*Budget:* \$92,169

#### *Progress Report*

The Department of Electrical and Computer Engineering at UWF proposes to introduce a specialization in “Sustainable Energy Systems” for Undergraduate Engineering students at UWF. The courses designed under this specialization will assist professionals in understanding the limits of our present energy systems and lead us to a future in which we can continue to provide reasonable energy resources for human quality of life. The specialization program focuses on electrical engineering sources and systems that are non-polluting, conserving of energy and natural resources, economically viable and safe for workers, communities and consumers. 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. A unique feature of the course is its broad approach to the development of sustainable routes to the generation and supply of energy within which renewable energy is a key theme. Students will be able to create study programs suited to their interests and aspirations through their choice of electives and design projects. The course is electrical engineering-based but also covers a wider range of topics including economics, sustainability and environmental studies. The program 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.

The proposed scheme is to introduce this specialization from fall of 2014 for a 2 year cycle ending spring 2016. All courses listed under this program are to be offered as online courses to enable working industry professionals to enroll in this course. The courses will be developed as asynchronous modules which will enable a widespread audience in the community. Preparation of study material and lecture presentations for online classes will be carried out during summer of 2014. The preliminary setting up of computer equipment for teaching is being performed presently. The courses will be taught by the PI, Co-PI and a faculty from the Department of Ethics, Law and Policy. Each of the faculty will have a student assistant to help them with researching topics and study material. Hiring of student is presently being carried out by the faculties.