

Florida Advanced Technological Education Center (FLATE)
Education - Technician Based Workforce
2012 May Progress Report

Florida Advanced Technological Education Center (FLATE). By Dr. Marilyn Barger

Background

FESC partnered with Florida Advanced Technological Education Center (FLATE) to develop statewide curriculum frameworks for technical A.S./A.A.S. degree programs supporting existing and new energy business sectors. FLATE is in the process of developing and processing through the FLUS DOE the industry-validated student competencies of the frameworks. FLATE will also develop new courses required for each new program of study. Additionally FLATE will help state and community colleges implement the new frameworks in their institutions.

Progress

The development of the process for the Florida State College System to respond to FESC's long term strategy to bring energy related technologies out of the Florida University System is well underway. FLATE has the college contacts and process in place to respond to any FESC and/or regional economic development authority request to provide assistance to a designated State College because of a technician workforce development need as identified or triggered by a new or expanding energy related company's operations in the State.

Since October 1, 2011 FLATE achieved several milestones. Together with the National Science Foundation-funded Energy Systems Technology Technicians (EST²) project team, FLATE has been developing a new Industrial Energy Efficiency specialization for the Engineering Technology (ET) Degree and associated College Credit Certificate. Experts from industry, government and academia have been very involved in this collaborative effort and instrumental in ensuring that the new specialization is directly aligned with current industry needs. The first draft is now complete and the framework will be submitted to the Florida Department of Education in the fall of this year so colleges can implement it in the 2012-2013 academic year.

In March, a short survey was administered to gather data to ensure the new framework is comprehensive and covers all areas necessary to produce the skilled workforce needed in this area. In addition, it provided an opportunity to identify individuals interested in collaborating to work on the new curriculum framework. Occupation respondents intend to train students for included Energy Technicians, Environmental Technicians, Sustainability Planners, Smart Grid Technicians, and Energy Auditors. Generally all individuals involved in developing and implementing Energy Management Programs for their company. The vast majority of respondents were very interested in collaborating to craft the new curriculum framework.

The Industrial Energy Efficiency specialization track comes at a time when interest in reducing operating costs through energy efficiency maximization is growing significantly both in Florida and throughout the nation. The new specialization will be designed to provide the necessary training for technicians in the areas of manufacturing, industrial processing, or any other appropriate area, such as HVAC technicians or electricians, to save energy costs on the plant floor. Upon completion of the program students will be armed with the knowledge and skills necessary to implement energy efficiency strategies in industrial processes/systems, and as a result impact the bottom line.

In October 2011, Nina Stokes joined the team as Project Manager, taking over from Jorge Monreal who left to pursue his education at the University of South Florida.

Last September FLATE and FESC sponsored an energy workshop for high school and college educators at the Center for Innovation and Economic Development at Santa Fe College in Gainesville, FL. Following the success of last year's event, FLATE will be coordinating a second workshop in conjunction with the Florida Energy Summit in August.

Finally, FLATE regularly updates / presents information about energy curriculum and training issues at the statewide Florida Engineering Technology Forum that meets twice per year at various colleges across the state. Many of these schools are looking to add "energy" curriculum and/or programs and are requesting guidance on what industry is asking for across the state and what and how other colleges are implementing credit programs. The goal of these activities is to keep colleges working together and sharing curriculum rather than develop independent programs not properly aligned to statewide frameworks.

Activities for the 2011-2012 year are listed below.

- Worked on Researching and defining energy career pathways. Created and published flowchart illustrating pathways.
- Researched an identified current energy related course articulations.
- Researched and identified all High Schools, Colleges and Universities offering energy-related courses/programs, building on the "Survey of Colleges Offering Energy Programs" administered in January 2011.
- Attended 2011 Beyond Sustainability 36th Annual Conference at Hillsborough Community College, Plant City in November.
- Participated in Sustainability Education & Economic Development (SEED) Webinar- Alternative Fuel Vehicles: New Technology, Refined Workforce Programs in November 2011.
- Attended Sustainability Education & Economic Development (SEED) Webinar-Community Colleges Leading Rural-Based Green Economy Initiatives (December 2011).
- Updated FESC Web Education pages.
- Planning is underway to host a second summer energy program for under-represented middle school students and an Energy-related Professional Development Workshop for middle and high school teachers, in conjunction with the EST2 grant partners (BCC, TCC and FSCJ).
- FLATE hosted the Engineering Technology (ET) Forum in Ft. Pierce in March. (Energy Efficiency Specialization was discussed)
- Participated (remotely) in the FEWC State and National Outreach Meeting (March 2012)
- Attended Train-the-Trainer Energy Workshop at Florida State College, Jacksonville in May, to prepare for Summer Energy Camps.
- FLATE took a delegation of eight students, five faculty members and two administrators from Florida's community and state colleges on a 21 day international technician training program to

Spain. The three week program provides students with an outstanding technical and cultural learning experience. For the second year, students enrolled in the engineering technology A.S. degree program and faculty members at Hillsborough Community College, Polk State College, State College of Florida, and Brevard Community College, will participate in a structured technical education and training experience at IEFPS Usurbil GLBHI—a technical college in the Basque region of Spain.

- From previous reporting period (included in case the link needed): Completed upload onto FLATE's Wiki of course curriculum EST1830 Introduction to Alternative and Renewable Energy made up of 16 individual instructional “modules”. Course content is made freely available to self- learners, students and educators. Material is available here: <http://flate.pbworks.com/w/page/35326400/EST1830-Introduction-to-Alternative-Energy- Course-Content>

Funds leveraged/new partnerships created: FLATE has leveraged its NSF and FESC resources to help Brevard Community College to apply for and be awarded a very competitive NSF grant, \$ 500,000, implement two energy related specialization within the A.S. Engineering Technology Degree. In addition, FLATE was able to secure a \$ 100,000 award from NSF to develop a faculty/student interchange that will allow Florida to benefit from the well advanced energy related technology educations practices at technology colleges in Spain.

FLATE External Collaborators: Brevard Community College; Tallahassee Community College; Daytona State College; Central Florida Community College; Polk State College; Florida State College at Jacksonville; Valencia Community College; School District Hillsborough County; Florida Department of Education – Division of Adult and Career Education; West Side Technical School; WFI Banner Center for Energy; Advanced Technology for Energy and Environment Center (ATEEC); University of West Florida, Dept. of Construction Technology; WFI Banner Center for Construction; WFI Banner Center for Clean Energy; USF College of Engineering; Madison Area Technical College ATE project for Alternative Energy certifications; Milwaukee Area Technical College Energy Conservation and Advanced Manufacturing Center (ECAM); Florida Energy Workforce Consortium (FEWC); TECO; Progress Energy; ISTE (Ibero Science and Technology Education Consortium), Usurbil GLBHI (Spain); TKNKA - Innovation Institute for Vocational Training (Spain); Center for Energy workforce Consortium (CEWD); UF Industrial Assessment Center; CREATE NSF Center for Alternative Energy; EST2 NSF ATE Grant project; DOE's Office of Energy Efficiency & Renewable Energy; Gulf Coast State College; Palm Beach State College; University of South Florida's College of Engineering; University of Miami; University of Alabama; Rutgers University; Energy Reduction Solution, SMC Corporation of America, Energy Conservation Group; Florida Solar Energy Consortium.