

ET Degree: New Energy Efficiency Specialization Under Development

By: Brandon Campus, FESC Project Manager

The Florida Advanced Technological Education Center (FLATE) and Florida Energy Systems Consortium (FESC) have been collaborating with the National Science Foundation-funded Energy Systems Technology Technicians (EST²) project team to

design a new specialization for the Engineering Technology (ET) Degree and associated College Credit Certificate. The EST² project team comprises individuals from Brevard Community College, Florida State College at Jacksonville, Tallahassee Community College and Hillsborough Community College.

Together with FLATE, FESC and experts from industry, government and academia, the team has been working on defining the new specialization from an industry perspective. Keith Zipper, President of Energy Reduction Solution, a company focused on increasing electrical energy efficiency on the plant floor, has been working closely with the EST² team. By opening up his plant to the team, he will provide them with an up-close, real-life opportunity to experience what kinds of skills are needed for future energy efficiency technicians in the industrial/commercial setting. Representatives from the Universities of Florida, Miami, Alabama and Rutgers have been invaluable in providing support from the academic realm. John Segal, a Technical Assistance Centers Deployment Specialist from the US Department of Energy, has also provided the EST² team with expertise and guidance. Jon Jensen, who heads up the Energy Conservation Group at SMC Corporation of America, has given the team a great deal of insight about what he has found in the field and what the industry is looking for as far as skills and knowledge.

The Industrial Energy Efficiency specialization tract 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 training necessary to teach manufacturing, industrial, and other appropriate technicians, such as HVAC technicians or electricians, to save energy costs on the plant floor. Hands-on courses will focus on how to identify and correct some of the energy inefficiency in industrial and/or commercial facilities. Courses will target major energy consumption areas including motors, hydraulics,



The new IEE specialization was one of the topics at the Engineering Technology Forum at Indian River State College in March

pneumatics, compressor, heat or cooling loss, and automated systems. Students will be required to demonstrate the ability to evaluate energy efficiency technologies and energy assessment methodologies. Analysis of energy consumption data for energy efficiency opportunities and the use of instrumentation for energy efficiency will also be covered. As a part of the curriculum, students will also receive content focused on training them how to address behavioral issues in industrial settings. The final course will be either a capstone course focused on integrating systems or work experience. 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.

A short survey was conducted in March 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. More than a third of survey respondents indicated that they were currently working on curriculum including energy efficiency in industrial/commercial settings components. These included consumption analysis and reduction factors, energy auditor tasks and energy management system protocols (e.g. ISO 50001), energy efficient HVAC and building construction. Air flow, pump/compressor/motor efficiency were also listed. Occupations respondents intend to train students for, included Energy Technicians, Environmental Technicians, Sustainability Planners, Smart Grid Technicians, Energy Auditors and any 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 EST² team plans to submit the framework to the Florida Department of Education in the fall of this year so colleges can implement it in the 2012-2013 academic year.