



THE ENGINEERING TECHNOLOGY A.S. /A.A.S. DEGREE PROGRAM

(SUPPORTING FLORIDA'S DIVERSE MANUFACTURING SECTOR)

The Florida Advanced Technological Education (FLATE) Center's review and reform of the statewide Curriculum Frameworks has redefined the manufacturing and related curriculum in Florida at the state level. FLATE, working with the Florida Department of Education's Career and Technical Education team, Florida community colleges, and Florida industries has recently completed the first phase of this project. A new A.S. / A.A.S. degree program in Engineering Technology (ET) with 7 specialization tracts and 11 specialization certificates was approved by the FL DOE in March 2007.



The premise of this degree is a “one-plus-one” approach where in year-one a student takes general education courses and a technical core curriculum that aligns with the Manufacturing Skills Standards Council (MSSC) Certified Production Technician (CPT) credential. The 18 credit hour “ET Core” covers introductory computer aided drafting, electronics, instrumentation and testing, quality, safety, and processes and materials. Year-two of the ET degree focuses on a specialization tract, each of which has some required and some elective topics. Each community college is free to adopt any or all of the specialization tracts and certificates depending on their local industry needs. The currently approved tracts are: Advanced Manufacturing, Advanced Technology, Electronics, Mechanical Design & Fabrication and Quality. Several additional specialization tracts are under development including Digital Design and Modeling; Biomedical Systems; Alternative Energy Production and Power Operations. Most of these will have frameworks approved for adoption by the community colleges in the fall of 2010. Nine community colleges have adopted the new degree as of June 2009, and several others have recently started their own internal curriculum processes to get the degree program approved for offering in 2010.

This community college Engineering Technology degree is part of a much larger statewide unified curriculum project that reaches the high school technology programs and career academies, incumbent worker training and bachelor degree programs. Embedding the MSSC Skill standards into the ET Core provides an industry-relevant articulation pathway from secondary programs that address these same industry skills. It also provides a pathway for incumbent workers to gain college credit by experience through certification. To accomplish these articulations, FLATE has crafted the first-of-its-kind Statewide Articulation Agreement based on Industry Certification. This agreement has been ratified by

the community college partners and was approved by the FLDOE. This statewide agreement based on industry certification is a model for other career programs.

To ensure the success of this unified curriculum plan, FLATE, in partnership with the FLDOE, has drafted a new curriculum framework for secondary and PSAV programs that also aligns with the MSSC CPT. This framework was approved in January 2009 and is now available for adoption by Florida high schools and Tech Schools. In the next phase of the project, FLATE will develop needed curriculum for the ET Core and provide professional development for high school teachers and community college faculty to ensure that students wishing to become MSSC certified are successful. FLATE will also be aligning existing secondary frameworks for pre-engineering programs in the state with the MSSC Certifications. FLATE also provides support for colleges during their institutional implementation phase, as well as providing the foundation and individual college support of a statewide promotional campaign for the unified curriculum aimed at educational communities (student, parents, counselors, teachers, etc.) and manufacturing industries.

All Engineering Technology Associate in Science (A.S.) Degree holders can transfer seamlessly to a number of Bachelor of Applied Science (B.A.S.) Degrees offered in Florida's universities, state colleges and community colleges. The 2 + 2 agreements apply 60 credit hours of an A.S. Degree directly to the 4-year bachelor's degree. The number of B.A.S. degree offerings across the state is growing rapidly. Alternatively, A.S. degrees in Engineering Technology will articulate to the B.S.A.S. in Operations Management at USF Polytechnic in Lakeland. This degree is a gateway to post baccalaureate degrees, requires additional general education and has technical prerequisite courses that may require an additional semester to complete. A third option is for graduates to transfer to a B.S.E.T. degree granting institution, including the University of West Florida and Florida A & M. Several opportunities for degree specializations are available at each university. To transfer to a B.S.E.T. degree may require additional general education as well as technical prerequisite courses.

A.S. / A.A.S. Engineering Technology Degree Specializations and related Certificates

SPECIALIZATION	CERTIFICATES
Advanced Manufacturing	Automation (12 credit hours) Lean Manufacturing (12 credit hours) Pneumatics, Hydraulics & Motors for Manufacturing (12 credit hours)
Advanced Technology	Applied Technology Specialist (16 credit hours)
Biomedical Systems	Medical Quality Systems (12 credit hours)
Digital Design and Modeling	Computer Aided Design and Drafting (12 credit hours)
Electronics	Electronics Aide (12 credit hours)
Mechanical Design & Fabrication	CNC Machinist (12 credit hours) Computerized Woodworking (12 credit hours)
Quality	Lean Six Sigma Green Belt (12 credit hours) Six Sigma Black Belt (12 credit hours)
Non-specific:	
ET Core (MSSC CPT aligned)	Engineering Tech. Support Specialist (18 credit hours)

The Engineering Technology Curriculum Frameworks and supporting documentation as well as the statewide articulation agreement are posted on FLATE website: <http://www.fl-ate.org/projects/degree-reform.html>. Information about the specific degree programs at colleges in Florida can be found on the made in Florida website at: www.madeinflorida.org/ET_degree.

FLATE serves the entire state of Florida and is one of over 37 Advanced Technological Education (ATE) Centers funded by the National Science Foundation (NSF) to enhance and promote the technician workforce for advanced technologies in the United States. To achieve this mission, all NSF-ATE Centers conduct activities in three areas: curriculum reform and/or development; student recruitment and retention into these technical programs (outreach); and professional development for technical secondary and post-secondary faculty. FLATE's leadership is a partnership among Hillsborough Community College (HCC), St. Petersburg College (SPC), and the USF College of Engineering (USF COE). For more information about FLATE, please visit www.fl-ate.org and www.madeinflorida.org.