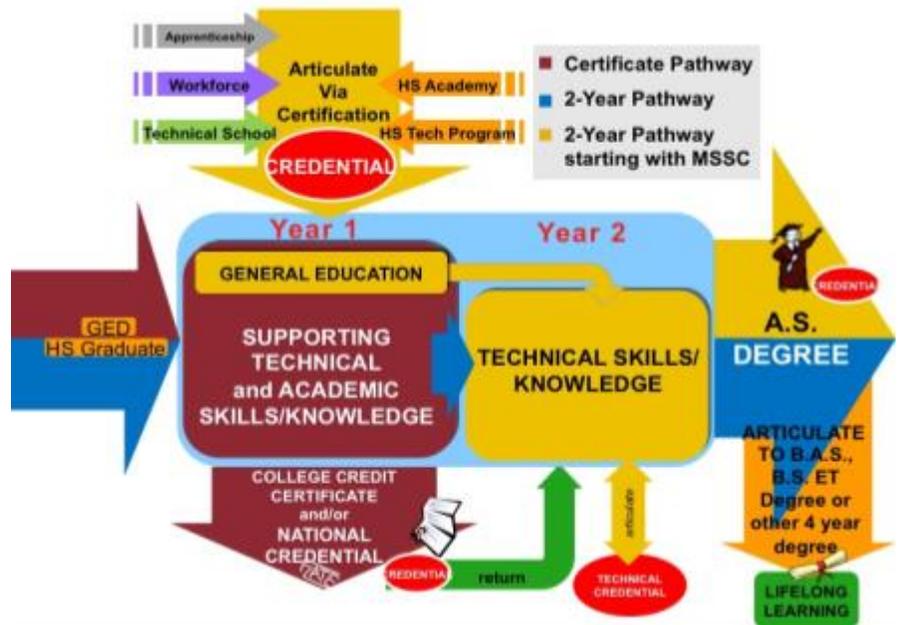


# FLORIDA'S ENGINEERING TECHNOLOGY A.S. DEGREE PROGRAM (SUPPORTING FLORIDA'S DIVERSE MANUFACTURING AND HIGH TECHNOLOGY INDUSTRIES)

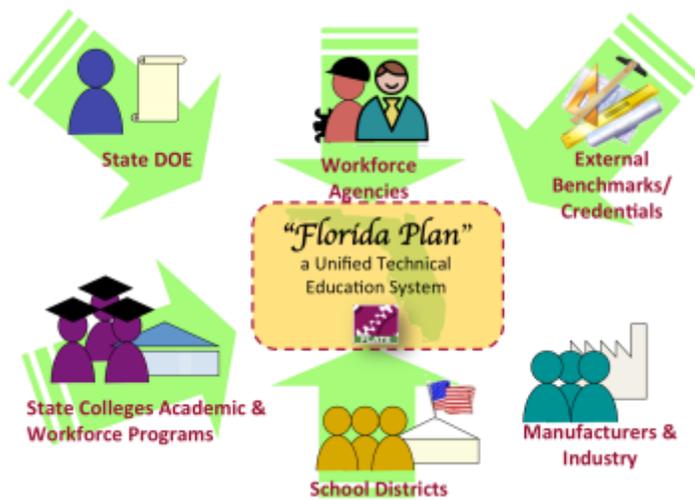


The Florida Advanced Technological Education (FLATE) Center's review and reform of the statewide Curriculum Frameworks has redefined the manufacturing and related curriculum in Florida at the state level. FLATE, working with the Florida Department of Education's Career and Technical Education team, Florida colleges, and Florida industries defined a new A.S. degree program in Engineering Technology (ET) currently with 11 specialization tracks and 20 technical college certificates. The FLDOE approved the degree in March 2007. The degree program with embedded industry and academic credentials, offers students a variety of technical specializations pathways built upon a common technical core that supports a wide range of manufacturing and high technology industries. Educator and industry panels review all Florida A.S. degrees every 3 years.

The structure of this degree is a "one-plus-one" approach in which a student takes general education courses and a strong technical core curriculum that aligns with the Manufacturing Skills Standards Council (MSSC) Certified Production Technician (CPT) credential in year one. The 18 credit hour "ET Technical Core" covers introductory CAD; electronics; safety; measurement, and instrumentation; quality; and processes and materials. Year-two of the ET degree focuses on a specialization track. Each college is free to adopt any or all of the



specialized tracks and certificates depending on their local industry needs. The currently approved specialized tracks are listed in Table 1. Eighteen Florida colleges now offer the A.S. ET degree as of June 2015, with others planning to transition or add the program in coming years.



The A.S. Engineering Technology degree is part of a much larger statewide, unified pathway that includes 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 through this credential. These articulation pathways were crafted by FLATE as the first-of-its-kind Statewide Articulation Agreement based on an Industry credential. The

agreement was approved by the FLDOE and has been ratified and reaffirmed (2015) by the colleges and

their industry partners. This statewide articulation agreement and tight alignment of academic programs and industry credentials provides also provides acceleration to completion. The model is endorsed by the National Association of Manufacturers (NAM) in their Skill Certification System (SCS) and has been identified as a national model for successful career pathways. All of Florida's ET offering colleges are members for NAM's M-List because they offer MSSC CPT as well as other NAM Manufacturing Institute (MI) endorsed credentials.

To ensure the success of this unified curriculum plan, FLATE, in partnership with the FLDOE, also developed a new curriculum framework for secondary and Post Adult Secondary Vocational (PSAV) programs that 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 addition to the Automation and Production program, at least 2 other high school programs are aligned to the MSSC CPT with their own statewide articulation agreements.

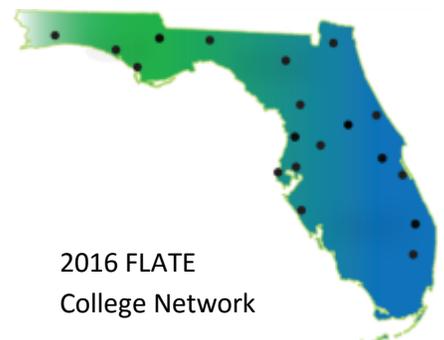
All Engineering Technology A.S. Degree holders can transfer seamlessly to a number of Bachelor of Applied Science (B.A.S.) Degrees offered in Florida's universities and colleges. The state mandated 2 + 2 agreements apply 60 credit hours of all A.S. degrees directly to any of these 4-year B.A.S. A second option is for A.S. ET graduates to transfer to Daytona State College's ABET accredited B.S.E.T. degree, which articulate 59-62 credits. The B.S.E.T. requires additional general education credits and may require technical prerequisite courses for some options.

**A.S. Engineering Technology Degree Specializations and related Certificates (2015)**

| SPECIALIZATION                    | CERTIFICATES (20)   |
|-----------------------------------|---|
| Advanced Manufacturing            | Automation (12 credit hours)<br>Lean Manufacturing (12 credit hours)<br>Mechatronics (30 credit hours)<br>Pneumatics, Hydraulics & Motors for Manufacturing (12 credit hours)                                       |
| Advanced Technology               | Applied Technology Specialist (16 credit hours)<br>Composite Fabrication and Testing (12 credit hours)  |
| Alternative Energy Systems        | Alternative Energy Systems Specialist (18 credit hours)   |
| Biomedical Systems                | Medical Quality Systems (12 credit hours)   |
| Digital Design and Modeling       | Computer Aided Design and Drafting (12 credit hours)  |
| Digital Manufacturing             | Rapid Prototyping Specialist (12 credit hours)<br>Digital Manufacturing Specialist (24 Credit Hours)  |
| Electronics                       | Electronics Aide (12 credit hours)  |
| Industrial Energy Efficiency      | Industrial Energy Efficiency Specialist (21 credit hours)   |
| Mechanical Design & Fabrication   | CNC Machinist /Fabricator (12 credit hours)<br>CNC Composite Fabricator/Programmer (12 credit hours)<br>CNC Machinist Operator/Programmer (12 credit hours)<br>Mechanical Designer and Programmer (12 credit hours) |
| Protection and Control Technology |   |
| Quality                           | Lean Six Sigma Green Belt (12 credit hours)<br>Six Sigma Black Belt (12 credit hours)   |
| <b>Non-specific:</b>              |   |
| ET Core (MSSC CPT aligned)        | Engineering Tech. Support Specialist (18 credit hours)  |

The Engineering Technology Curriculum Frameworks, supporting documentation and the statewide articulation agreement are posted on FLATE's website: <http://fl-ate.org/programs/stackable-credentials/>. Information about the specific degrees at Florida colleges can be found on the Made in Florida website: <http://madeinflorida.org/engineering-technology-degree/e-t-overview/>.

FLATE serves Florida and is an Advanced Technological Education (ATE) Centers of Excellence funded by the National Science Foundation (NSF) to enhance and promote the 2-year technician workforce education programs for advanced technologies in the United States. To achieve this mission, all NSF-ATE Centers partner with industry and work in four major areas: curriculum reform and development; student recruitment/outreach; technician education research; and professional development. FLATE works closely with its educational and industry partners to provide assistance for all aspects of program building at various stages. 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](http://www.fl-ate.org) and [www.madeinflorida.org](http://www.madeinflorida.org) or contact Dr. Marilyn Barger, FLATE Executive Director: [barger@fl-ate.org](mailto:barger@fl-ate.org))