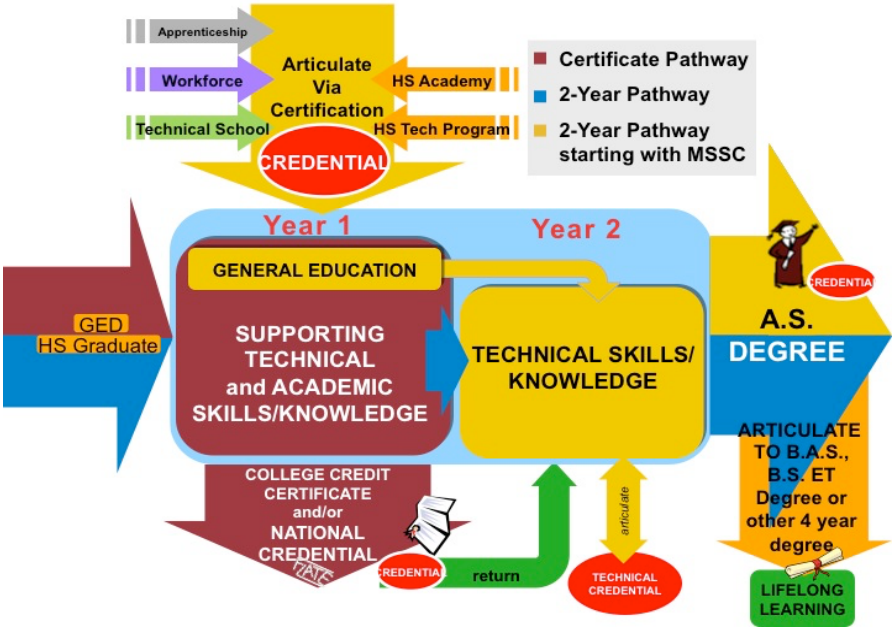
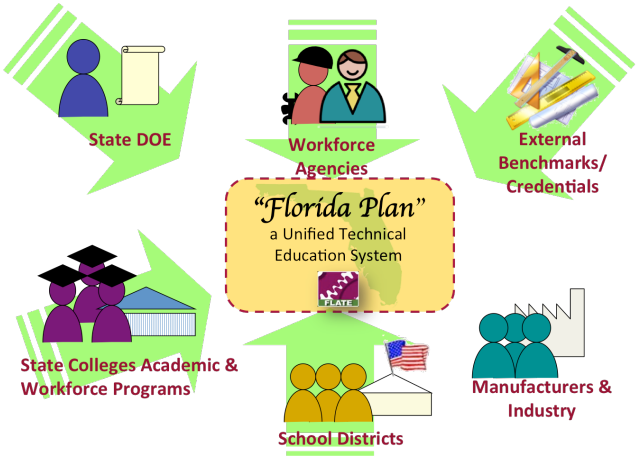
FLORIDA'S ENGINEERING TECHNOLOGY A.S. DEGREE

(Supporting Florida's Manufacturing and High-Tech 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 (FDOE) Career and Technical Education team, Florida colleges, and Florida industries defined an A.S. degree program in Engineering Technology (ET) currently with 10 specialization tracks and 18 technical college certificates. The FDOE 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 Career and Technical Education programs every three 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; measurement; electronics; safety; instrumentation; quality; materials; and processes. Year-two of the ET degree focuses on a specialization track. Each college is free to adopt any or all of the specialization tracks and certificates depending on their local industry needs. The currently approved specialized tracks are listed in Table 1. As of January 2021, twenty-three (23) Florida colleges offer the A.S. ET degree, with others planning to transition or add the program in the near future.





The A.S. Engineering Technology degree is the "lynch pin" of a much larger statewide, unified pathway that includes the high school technology programs and career academies, technical college programs, incumbent worker training, bachelor degree programs and a path to Professional Engineer Licensure. 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 also provides acceleration to completion and recognized "stop out" points. The model has been endorsed by the Manufacturing Institute of National Association of Manufacturers (NAM).

This work is based upon work developed with funding from the National Science Foundation and revised, updated and disseminated with support from the funds available under the Florida Department of Education Strengthening Career and Technical Education for the 21st Century Act of 2018. Revised 04/2021.

FLATE, in partnership with the FLDOE, also developed a secondary curriculum framework program and post-secondary Career Credentials that align with the MSSC CPT. These frameworks were first approved in January 2009 and are now available for adoption by Florida high schools and Technical Colleges. In addition to the Advanced Manufacturing program, other high school programs are aligned to the MSSC CPT with their own statewide articulation agreements.

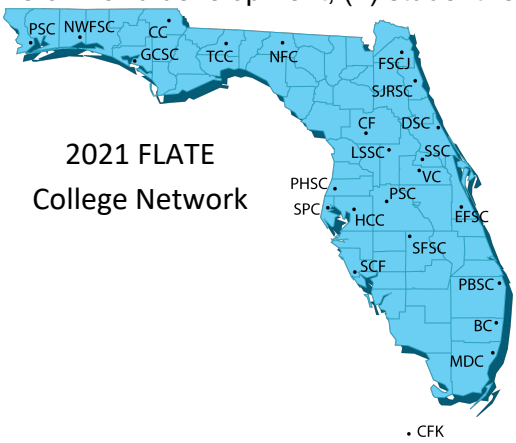
All Engineering Technology A.S. Degree holders can transfer seamlessly to a number of Bachelor of Applied Science (B.A.S.) Degrees offered in Florida's universities and state colleges. The state mandated 2 + 2 agreements apply 60 credit hours of all A.S. degrees directly to any of these 4-year B.A.S. A second academic option for A.S. ET graduates is transfer to one of several B.S.E.T. or B.S.E.E.T. degrees at several of the state colleges. Some of these four-year programs are also ABET accredited with a path to Professional Engineering Licensure in Florida. These bachelor degrees require additional general education credits and may require technical prerequisite courses for some options.

A.S. Engineering Technology Degree Specializations and related Certificates (2020-21)

SPECIALIZATION (11)	CERTIFICATES (20)
Advanced Manufacturing	Automation (12 credit hours) Lean Manufacturing (12 credit hours) Mechatronics (30 credit hours) Pneumatics, Hydraulics & Motors for Manufacturing (12 credit hours)
Advanced Technology	Applied Technology Specialist (16 credit hours) 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)
Electronics	Electronics Aide (12 credit hours)
Mechanical Design & Fabrication	CNC Composite Fabricator/Programmer (12 credit hours) CNC Machinist /Fabricator (12 credit hours) CNC Machinist Operator/Programmer (12 credit hours) Mechanical Designer and Programmer (12 credit hours)
Protection and Control Technology	
Quality	Lean Six Sigma Green Belt (12 credit hours) Six Sigma Black Belt (12 credit hours)
Supply Chain Automation	
Non-specific:	
ET Core (MSSC CPT aligned)	Engineering Technology 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 all of Florida and is a National Science Foundation (NSF) Advanced Technological Education (ATE) Center of Excellence supporting and promoting 2-year technician workforce education programs for manufacturing and advanced technologies. To achieve this mission, FLATE partners with industry across the state to support program capacity building with four kinds of initiatives: (1) curriculum reform and development; (2) student recruitment and outreach; (3) technician education research; and (4) educator professional development. FLATE works closely with the FDOE and its educational and industry partners to provide assistance for all aspects of program building at various stages.



2021 FLATE College Network

FLATE is part of the FloridaMakes Network. FloridaMakes is the NIST MEP (National Institute for Science and Technology Manufacturing Extension Partnership) Center in Florida which supports small and medium manufacturers. For more information about FLATE, visit www.flate.org and www.madeinflorida.org or contact Dr. Marilyn Barger, FLATE Director.

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