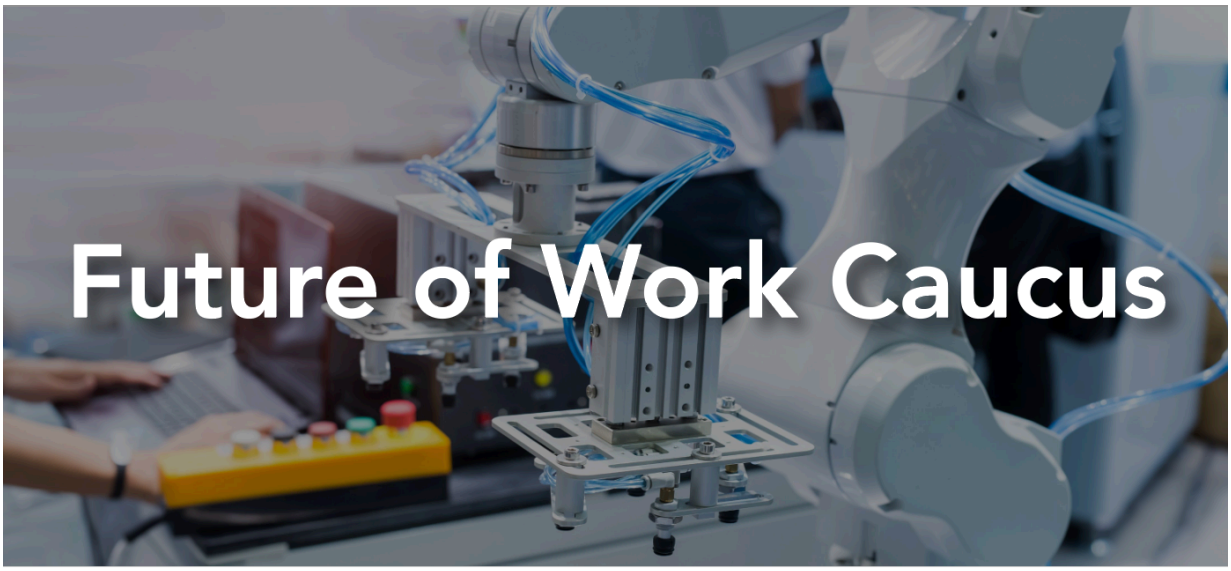

This handout contains information about the AS Engineering Technology (ET) Degree Program in Florida. #1 is the Florida Department of Education Framework (Standards only) for the advanced manufacturing specialization. It is a list of competencies that students will have after completing the A.S. program. II is what these standards look when offered in courses of the AS degree program.

I. Excerpts from the FDOE Framework of Standards and Benchmarks

Florida Department of Education
Curriculum Framework 2020-2021
Link to FDOE Framework Engineering Technology (AS - 1615000001)

Program Title:	**Engineering Technology**
Career Cluster:	**Manufacturing**
CIP Number	1615000001
Program Type	College Credit
Standard Length	60 credit hours
CTSO	SkillsUSA

STANDARDS FOR ET TECHNICAL CORE COURSES
After successfully completing this program, the student will be able to perform the following:
01.0. Demonstrate an understanding of industrial processes and material properties.
02.0 Generate and interpret computer-aided design/drafting.
03.0. Demonstrate a fundamental understanding of electricity and electronics.
04.0. Demonstrate an understanding of industrial safety, health, and environmental requirements.
05.0. Demonstrate proficiently in the use of quality assurance methods and quality control concepts.
06.0. Demonstrate proficiency in using tools, instruments and testing devices.
07.0. Demonstrate basic troubleshooting skills.

08.0. Demonstrate appropriate communication skills.
09.0. Demonstrate appropriate math skills.
10.0. Demonstrate an understanding of modern business practices and strategies.
11.0. Demonstrate employability skills and identify career opportunities.

STANDARDS for ADVANCED MANUFACTURING SPECIALIZATION

After successfully completing this program, the student will be able to perform the following:

12.0 Understand, operate, troubleshoot, and maintain pneumatic, hydraulic, and electromechanical components and/or systems.
13.0 Identify lean and six sigma concepts in manufacturing environments.
14.0 Understand, operate, and maintain industrial automation systems.
15.0 Troubleshoot industrial automation systems.
16.0 Apply the principles of robotics to automated systems.
17.0 Create and operate human machine interfaces to control automated systems.
18.0 Identify, implement and/or interpret supply chain and operations management concepts and techniques.

SOC (Standard Occupational Classification)
Codes (all applicable) aligned to A.S. Engineering Technology

11-9111 – Medical and Health Services Managers
17-2031 – Biomedical Engineers
17-2051 – Civil Engineers
17-3012 – Electrical and Electronics Drafters
17-3013 – Mechanical Drafters
17-3019 – Drafters, All Other
17-3023 – Electrical and Electronic Engineering Technicians
17-3024 – Electro-Mechanical Technicians
17-3026 – Industrial Engineering Technicians
17-3027 – Mechanical Engineering Technicians
17-3029 – Engineering Technicians, Except Drafters, All Other
19-4021 – Biological Technicians
27-1029 – Designers, All Other
29-2012 – Medical and Clinical Laboratory Technicians
29-2071 – Medical Records and Health Information Technicians
31-9092 – Medical Assistants
51-4012 – Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic
51-4061 – Model Makers, Metal and Plastic
51-9082 – Medical Appliance Technicians
13-1199 – Business Operations Specialists
49-2094 – Electrical and Electronics Repairers, Commercial and Industrial Equipment
49-2095 – Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
49-9041 – Industrial Machinery Mechanics

II. **TYPICAL Florida A.S. Engineering Technology - Advance Manufacturing Degree Plan (College of Central Florida)**

Advanced Manufacturing Specialization Courses (18 credit hours)

ETM 2401	Mechanical Devices and Systems	3
ETS 1700	Hydraulics and Pneumatics	3

ETS 1540	Industrial Applications Using PLCs and Robotics	3
ETI 1843	Motors and Controls	3
ETS 1542	Introduction to PLCs	3
ETS 1535	Automation Process Control	3

Program Core Courses (21 credit hours)

CGS 1100	Microcomputer Applications	3
EGN 1111	Engineering Graphics	3
ETI 1411	Manufacturing Processes I	3
EET 1084	Survey of Electronics	3
ETI 1117	Introduction to Quality Control	3
ETI 1720C	Industrial Safety	3
ETI 1151	Instrument Techniques and Measurement	3

Program Electives (6 Credit Hours) *Choose 6 credits from the courses listed:*

CGS 2103	Spreadsheet Applications	3
EGS 1949	Work Experience I	3
ETI 1622	Concepts of Lean Manufacturing and Six Sigma	3
ETI 1628	Developing and Coaching Self-Directed Work Teams	3
ETI 2610	Six Sigma for the Expert	3
ETI 2623	Lean Enterprise for the Expert	3
MAN 2021	Principles of Management	3
MAN 2582	Introduction to Project Management	3
MAC 1105	College Algebra**	3
MAC 1114	Trigonometry	3
MAC 1140	Precalculus (Algebra)**	3
MAC 1147	Precalculus Algebra/Trigonometry**	5
MAC 2311	Calculus I with Analytic Geometry**	5
MAC 2312	Calculus II with Analytic Geometry**	5
OST 1100	Introduction to Word	3
ETD 2364	3-D Modeling with Solid Works	3
EGS 1006	Introduction to the Engineering Profession	1
EGN 1007C	Engineering Concepts and Measures	1

General Education Courses (15 credit hours)

ENC 1101	Freshman Composition Skills I**	3

One of the following

MAC 1105	College Algebra**	3
MAC 2311	Calculus I with Analytic Geometry**	5
MGF 1106	Liberal Arts Mathematics**	3
MGF 1107	Mathematical Explorations**	3
STA 2023	Elementary Statistics**	3
STA 2023H	Honors Elementary Statistics**	3

One of the following:

ARH 1000	Art Appreciation	3
HUM 1020	Introduction to the Humanities	3
HUM 1020H	Honors Introduction to the Humanities	3
LIT 1000	Introduction to Literature	3
MUL 1010	Music Appreciation	3
PHI 2010	Introduction to Philosophy	3
THE 1000	Theatre Appreciation	3

One of the following:

AMH 2020	United States History Since 1877	3
ANT 2000	Introduction to Anthropology	3
ECO 2013	Principles of Economics - Macro	3
ECO 2013H	Principles of Economics - Macro Honors	3
POS 2041	American National Government	3
PSY 2012	General Psychology	3
PSY 2012H	Honors General Psychology	3
SYG 2000	Introductory Sociology	3

One of the following:

PHY 1020	Elementary Physics for the Nonscience Majors	3
PHY 1053C	General Physics I with Lab	4
PHY 2048C	General Physics with Calculus I with Lab	5

TOTAL CREDIT HOURS: 60