

ENGINEERING TECHNOLOGY (A.S.), MECHANICAL DESIGN AND FABRICATION SPECIALIZATION

Previous Degree Required: HS Diploma

Eligible for Financial Aid: Yes

Delivery Method(s): On-Campus, Hybrid

Location(s): Cocoa, Palm Bay

Limited Access: No

Program Testing Requirements: Assessment in Reading, Writing, and Math

Academic Community: INMC Industry/Manufacturing and Construction

Program Code: ETASMDF

Classification of Instructional Programs (CIP) Code: 15.000

Florida Department of Education CIP Code: 1615000001

This is a specialization of the Engineering Technology Associate in Science degree.

The Specialization in Mechanical Design and Fabrication prepares students with the skills to support the automated manufacturing processes and be competitive as an Engineering Technician, Mechanical Designer, CNC Operator/Setup Technician and/or CNC Programmer. Through course work and hands-on lab exercises, students understand and develop skills in CAD/CAM software, Computer Numerical Control (CNC) programming, and machine setup and operation of both manual and CNC Mill & Lathe machining centers used by today's manufacturing industries.

Refer to the [Engineering Technology \(A.S.\) overview](#) to find information about this degree, including imbedded College Credit Certificates.

Students should work with an advisor to determine the courses best suited to their plan of study.

Visit the [program page](#) for more information.

Program of Study

Code	Title	Credit Hours
General Education Courses		
ENC 1101	Composition 1	3
	Humanities Core Requirement	3
	Mathematics Core Requirement	3
	Natural Science Core Requirement	3
	Social/Behavioral Science/Core-Civic Literacy Requirement	3
Major Courses		
EET 1084	Introduction to Electronics	3
ETDC 2364	SolidWorks Fundamentals	3
ETI 1420	Manufacturing Processes and Materials	3
ETI 1701	Industrial Safety	3
ETI 2110	Introduction to Quality Assurance	3
ETIC 2001	Applied Manufacturing Mechanics	3
Mechanical Design & Fabrication Specialization Courses		
ETIC 2414	Computer Aided Manufacturing 1	3

ETIC 2419	Computer Aided Manufacturing 2	3
PMTC 1203	Introduction to Machining	3
PMTC 2213	Advanced Machining 1	3
PMTC 2214	Advanced Machining 2	3
PMTC 2216	Advanced Machining 3	3
Technical Electives		9
Select 9 credits from the list below.		
CETC 1123	Microprocessor Fundamentals	
EET 2621	Soldering Inspections and Processes	
EETC 1610	Through-Hole and Surface-Mount Soldering	
EETC 1611	Standard Testing and Certification	
EETC 1612	Cabling and Wire Harness Assembly	
EETC 2724	Schematic Capture and Modeling	
ENC 2210	Technical Writing	
ETD 2941	Internship	
ETDC 2320	AutoCAD Fundamentals	
ETDC 2322	Creo Parametric	
ETDC 2371	Introduction to 3D Printing & Rapid Prototyping	
ETIC 2460	Composites Fundamentals	
ETIC 2464	Advanced Composites	
ETS 1520	Instrumentation Fundamentals	
ETSC 1603	Fundamentals of Robotics and Simulation	

Total Hours: **60**

Note: In accordance with Florida Statute and Florida Administrative Code, students must satisfy the [Civic Literacy Graduation Requirement](#).

Course Sequence

Below is the recommended sequence for taking courses in this degree. Using this guide and meeting with your assigned advisor each term is the key to successful program completion.

Please note that course prerequisites, including required developmental math, reading, or writing, need to be completed to continue on to the more advanced course. Courses followed by "&" have prerequisites that are not part of this program. Click on the course number to see the requirements.

Code	Title	Credit Hours
ENC 1101	Composition 1	3
Technical Elective ¹		3
EET 1084	Introduction to Electronics	3
ETI 1701	Industrial Safety	3
PMTC 1203	Introduction to Machining	3
Mathematics Core Requirement		3
PMTC 2213	Advanced Machining 1	3
ETDC 2364	SolidWorks Fundamentals	3
ETI 1420	Manufacturing Processes and Materials	3
ETI 2110	Introduction to Quality Assurance	3
ETIC 2001	Applied Manufacturing Mechanics	3
Social/Behavioral Science/Core-Civic Literacy Requirement		3
PMTC 2214	Advanced Machining 2	3
ETIC 2414	Computer Aided Manufacturing 1	3
Humanities Core Requirement		3

<u>Natural Science Core Requirement</u>	3
PMTC 2216 Advanced Machining	3
ETIC 2419 Computer Aided Manufacturing	3
Technical Elective ¹	3
Technical Elective ¹	3
Total Hours:	60

¹ Select nine technical elective credits. See the program of study page for courses.

Learning Outcomes

1. Demonstrate proficiency using engineering drafting software
 - *Core Ability Supported: Think Critically and Solve Problems*
2. Demonstrate industrial safety, health, and environmental requirements.
 - *Core Ability Supported: Process Information*
3. Demonstrate methods of quality assurance in manufacturing.
 - *Core Ability Supported: Process Information*
4. Demonstrate modern industrial processes and materials.
 - *Core Ability Supported: Process Information*
5. Demonstrate proficiency using tools, instruments and testing devices
 - *Core Ability Supported: Think Critically and Solve Problems*