

Eastern Florida State College

**ENGINEERING TECHNOLOGY PROGRAM ASSOCIATE IN
SCIENCE DEGREE (ETAS)**
PLUS College Credit Certificates in:
ENGINEERING TECHNOLOGY SUPPORT SPECIALIST (ESCC)
APPLIED TECHNOLOGY SPECIALIST (ATCC)
ALTERNATIVE ENERGY SPECIALIST (AECC)
COMPOSITE FABRICATION SPECIALIST (CFCC)
CNC MACHINIST (CNCC)
[2017-2018](#) College Catalog
META-MAJOR: Industry, Manufacturing, Construction (INMC)

PROGRAM CONTACTS:

Mr. Meer Almeer, Associate Professor
(321) 433-5220 or almeerm@easternflorida.edu
Mr. Bruce Heshel, Assistant Professor
(321) 433-5779 or hesherb@easternflorida.edu
For information go to:
www.easternflorida.edu/go/careertech

LEGEND:

◆ = Course is a pre-requisite for other course and "C" or better is needed. *These courses should be taken first.*
1st = Introductory Level Skills
2nd = Intermediate Level Skills
3rd = Advanced Level Skills
Only taught at specific campus: **B** = Palm Bay,
C = Cocoa,
T = Titusville and **e** = eLearning
ASC = Advanced Standing Credit (High School to College Credit)

Advising Notes:

It is important to register for technical courses when offered. *Many technical courses are only offered only once a year.* Improper planning may cause delay of graduation by three semesters! Technical courses should be taken in order of skill level as noted 1st, 2nd, and 3rd. *General Education courses are offered every term and on every campus*, including eLearning.

Bachelor's Degree at Eastern Florida – Courses in the certificate programs are **appropriate** for the 21 credit hours of the Technical Concentration component of the Bachelors of Applied Science degree at Eastern Florida State College.

ENGINEERING TECHNOLOGY AS Degree Requirements / 2017-18 Catalog / 60 TOTAL CREDITS					
GENERAL EDUCATION COURSES				Credits 15	
	SPC 2608	Fundamentals of Speech Communication		3	
	MAC 1105	College Algebra		3	
	ENC 1101	Composition I		3	
		Social/Behavioral Science Requirement		3	
		Humanities Requirement		3	
REQUIRED CORE COURSES				Credits 18	Level Campus
◆	EET 1084	Introduction to Electronics (MSSC certification credit option & ASC option)	3	1 st	B C
	ETDC 2364	SolidWorks Fundamentals (Industry certification credit option)	3	1 st	B C
	ETI 1701	Industrial Safety (MSSC certification credit option)	3	1 st	B C
	ETI 2110	Introduction to Quality Assurance (MSSC certification credit option)	3	1 st	B C
	ETIC 1830	Materials and Processes 1 (MSSC certification credit option)	3	1 st	B C e
◆	PMTC 1203	Introduction to Machining (ASC option)	3	1 st	B, C
ADVANCED TECHNOLOGY SPECIALIZATION / ETAS				Credits 27	
◆	EETC 1610	Through-Hole & Surface-Mount Soldering (Industry certification credit option)	3	1 st	B
	EETC 2620	Advanced Surface-Mount Soldering Technology (Prerequisite: EETC 1610) (Industry certification credit option)	3	2 nd	B
	ETIC 2121	Non-Destructive and Destructive Testing (Prerequisite: EET 1084)	3	2 nd	B
	ETIC 2460	Composites Fundamentals (Prerequisite: ETIC 2851 or PMTC 1203)	3	2 nd	B
	ETMC 1010	Mechanical Measurement	1	1 st	B
	ETS 1520	Instrumentation Fundamentals (Prerequisite: EET 1084)	3	2 nd	B
	ETSC 1240	Fiber Optic Technologies	3	1 st	B
		Technical Electives	9		
ELECTRONICS SPECIALIZATION / ETAS EO				Credits 25	
	CETC 1114	Digital Fundamentals (Prerequisites: EET 1084 and MAT1033 or MAC 1105)	4	2 nd	B
◆	EETC 1025	Circuit Fundamentals (Prerequisite: EET 1084)	4	2 nd	B
	EET 2324	Electronic Communications (Prerequisite: EETC 1025)	3	3 rd	B
◆	EETC 1141	Analog Devices (Prerequisite: EETC 1025)	4	3 rd	B
	EETC 1142	Analog Circuits (Prerequisite: EETC 1141)	4	3 rd	B
		Technical Electives	6		

(Options continued on next page)

ALTERNATIVE ENERGY SYSTEMS SPECIALIZATION/ ETAS AESO			Credits 25		
EETC 1025	Circuit Fundamentals (Prerequisite: EET 1084)	4	2 nd	B	
ETP 1400	Distributed Electric Power Generation & Storage	3	1 st	B	
ETP 1401	Alternative/Renewable Energy Technologies	3	1 st	B	
ETP 1420	Solar Thermal Technologies	3	1 st	B	
ETPC 2410	Photovoltaic Technology (Prerequisite: EET 1084)	3	2 nd	B	
	Technical Electives (see ↓)	9			
TECHNICAL ELECTIVES					
Students may use courses in the Options listed above ↑ as Technical Electives as long as these are not being used to fulfill an option requirement. Students may also select Technical Elective credit from the list below ↓ .					
CETC 1123	Microprocessor Fundamentals (Prerequisite: CETC 1114)	4	3 rd	B	
EETC 1611	Standard Testing and Certification (Prerequisite: EETC 1610)	2	2 nd	B	
EETC 2325	Electronic Communication Systems (Prerequisite: EETC 1142)	4	3 rd	B	
EETC 2724	Schematic Capture and Modeling	3	2 nd	B	
ETIC 2464	Advanced Composites (Prerequisite: ETIC 2460)	3	3 rd	B	
ETP 1550	Alternative Fuels and Electric Vehicle Technologies	3	1 st	B	
ETS 1810	Energy Efficient Buildings	3	1 st	B	
ETD 2941	Internship	3	1 st	B	
PMTC 1203	Introduction to Machining	3	1 st	C	
PMTC 2213	Advanced Machining 1 (Prerequisite: PMTC 1203)	3	2 nd	C	
PMTC 2214	Advanced Machining 2 (Prerequisite: PMTC 2213)	3	2 nd	C	
TOTAL credit hours for the AS degree in Engineering Technology (select <u>one</u> of three options) : AS Degree includes courses in General Education, Core, Option and Elective courses		60 credits			

Embedded College Credit Certificates within Engineering Technology Associate in Science Degree

Courses in the certificates will lead to the AS degree in Engineering Technology. Students may choose to start with certificate courses and build towards completing the A.S. degree in Engineering Technology. **No placement test required for College Credit Certificates (CCC)** and no General Education courses are part of CCC Programs. While no minimum mathematics placement score is required, *concepts in algebra* are embedded in most of the Engineering Technology courses.

ALTERNATIVE ENERGY SYSTEMS SPECIALIST (AECC) College Credit Certificate Requirements 18 TOTAL CREDITS					
<i>Financial Aid Eligible</i>					
EET 1084	Introduction to Electronics (MSSC certification credit option)	3	1 st	B C	
ETI 1701	Industrial Safety (MSSC certification credit option)	3	1 st	B C	
ETP 1400	Distributed Electrical Power Generation and Storage	3	1 st	B	
ETP 1401	Alternative/Renewable Energy Technologies	3	1 st	B	
ETP 1420	Solar Thermal Technologies	3	1 st	B	
ETPC 2410	Photovoltaic Technology (Prerequisite: EETC 1084)	3	2 nd	B	

APPLIED TECHNOLOGY SPECIALST (ATCC) College Credit Certificate Requirements 16 TOTAL CREDITS					
EET 1084	Introduction to Electronics (MSSC certification credit option)	3	1 st	B C	
♦ EETC 1610	Through Hole & Surface Mount Soldering (Industry certification credit option)	3	1 st	B	
ETMC 1010	Mechanical Measurement	1	1 st	B	
ETS 1240	Fiber Optics Technologies	3	1 st	B	
PMTC 1203	Introduction to Machining (ASC option)	3	1 st	B C	
EETC 2620	Advanced Surface Mount Soldering (Prerequisite: EETC 1610) (Industry certification credit option)	3	2 nd	B	

COMPOSITE FABRICATION & TESTING (CFCC) College Credit Certificate Requirements 19 TOTAL CREDITS					
<i>Financial Aid Eligible</i>					
ETI 1701	Industrial Safety (<i>MSSC certification credit option</i>)	3	1 st	B C	
ETIC 1830	Materials & Processes (<i>MSSC certification credit option</i>)	3	1 st	B C	
ETIC 2121	Non-Destructive and Destructive Testing (<i>Prerequisite: EETC 1084</i>)	3	2 nd	B	
ETIC 2460	Composite Fundamentals (<i>Prerequisite: ETIC 2851</i>)	3	2 nd	B	
ETIC 2464	Advanced Composites (<i>Prerequisite: ETIC 2460</i>)	3	3 rd	B	
ETMC 1010	Mechanical Measurement	1	1 st	B	
PMTC 1203	Introduction to Machining (<i>ASC option</i>)	3	1 st	C	

CNC MACHINIST (CNCC) College Credit Certificate Requirements 12 TOTAL CREDITS					
ETDC 2364	SolidWorks Fundamentals (<i>Industry certification credit option</i>)	3	1 st	B C M	
PMTC 1203	Introduction to Machining (<i>ASC option</i>)	3	1 st	B C	
PMTC 2213	Advanced Machining 1 (<i>Prerequisite: PMTC 1203</i>)	3	2 nd	C	
PMTC 2214	Advanced Machining 2 (<i>Prerequisite: PMTC 2213</i>)	3	2 nd	C	

ENGINEERING TECHNOLOGY SUPPORT (ESCC) College Credit Certificate Requirements 18 TOTAL CREDITS					
<i>Financial Aid Eligible</i>					
EET 1084	Introduction to Electronics	3	1 st	B C	
ETDC 2364	SolidWorks Fundamentals (<i>Industry certification credit option</i>)	4	1 st	B C M	
ETI 1701	Industrial Safety (<i>MSSC certification credit option</i>)	3	1 st	B C	
ETI 2110	Introduction to Quality Assurance (<i>MSSC certification credit option</i>)	3	1 st	B C	
ETIC 1830	Materials and Processes 1 (<i>MSSC certification credit option</i>)	3	2 nd	B C	
PMTC 1203	Introduction to Machining (<i>ASC option</i>)	3	1 st	C	

It is the responsibility of the student to meet the established degree requirements for the degree or certificate being sought at Eastern Florida State College. Specific requirements (minimum grades, prerequisites, GPA, etc.) are indicated in the [2017 – 2018 College Catalog](#). Current students can view their degree progress at www.easternflorida.edu/academics/academic-support/mygps.

Internships

Internships are available for students in specific Career & Technical Programs. Students who have declared the Engineering Technology (ETAS) major and who have completed courses that demonstrate skills and knowledge in the technical area will be considered for internships. Contact the Program Specialist to learn more about the internship process.

Advance Standing Credit

Current or recent Brevard Public School students can get a jump-start in a Career & Technical Program at Eastern Florida State College through [Advance Standing Credit](#). Save time and money through free tuition and books for career and technical programs at the public school level. Advance Standing Credit allows you to continue with the skill sets you learned in high school and prepare for a rewarding career. Move to the next level and receive credit in the Engineering Technology career program at Eastern Florida State College. The web link to Assessment of Prior Learning and Articulated Credit Agreements is: www.easternflorida.edu/admissions/registrars-office/credit-evaluation/leap.

Students completing **Engineering Technology 1, 2 & 3 at a Brevard Public High School** with grade average of “B” or higher who declare the Engineering Technology as their EFSC major **can receive college credit for EET 1084 Introduction to Electronics and PMTC 1203 Introduction to Machining**. Students must complete EETC 1025 Circuit Fundamentals and ETS 1520 Instrumentation Fundamentals with grades of “C” or higher in order to qualify for accelerated credit.

College Credit for Industry Certification

Students who have earned the Manufacturing Skills Standards Council – Certified Production Technician ([MSSC-CPT](#)) Certification can receive credit for EET 1804, ETI 1701, ETI 2110, ETIC 1830 and PMTC 1203.

Students who have earned the [Certified SolidWorks](#) Associate or Professional (CSWA or CSWP) version 2015 certificate can receive credit for ETDC 2364.

IPC standard Soldering Courses and Certificate, Plus “Testing Out” (aka Credit by Institutional Exam) option

The following courses can lead to an industry certification in Soldering. Students who have soldering experience, can pass the credit by exam and have an IPC 7711/21 certificate may be able to receive college credit. Contact the program faculty manager for more information.

Soldering skills courses at EFSC / Engineering Technology degree:

EETC 1610 Through-Hole & Surface-Mount Soldering

EETC 2620 Advanced Surface Mount Soldering Technology - Upon successful completion of EETC 1610 and EETC 2620 and examination student can receive an IPC-7711/IPC-7721 Rework and Repair Certified IPC specialist (CIS) certificate.

Employment in the Field

The TOL for Region 13 (Brevard County) lists the following jobs that are related to the Engineering Technology degree program:

Computer-Controlled Machine Tool Operators Metal & Plastic

Electrical and Electronic Equipment Assemblers

Electrical and Electronic Repairers

Electrical and Electronics Engineering Technicians (HSHW)

Electromechanical Equipment Assemblers

Electronic Home Entertainment Equipment Installers and Repairers

Fiberglass Laminators and Fabricators (Composites)

Machinists

Manufacturing Production Technicians

Mechanical Engineering Technicians

Solar Photovoltaic Installers

Solar Thermal Installers & Technicians

Read more about careers in Engineering Technology at Career Coach (<https://easternflorida.emsicareercoach.com/>).

You can also explore careers and make a plan for education at www.floridashines.org/find-a-career/mycareershines.

Brevard Public School students may view Career & Technical Education programs of study at [http://www.edline.net/pages/Brevard County Schools/Departments/Departments A-J/Career and Technical Education/Programs of Study](http://www.edline.net/pages/BrevardCountySchools/Departments/Departments A-J/Career and Technical Education/Programs of Study). See how to prepare for careers and college.

Eastern Florida State College is dedicated to providing a nondiscriminatory environment which promotes equal access, equal educational opportunity and equal employment opportunity to all persons regardless of age, race, national origin, color, ethnicity, genetics, religion, sex, gender preference, pregnancy, disabilities, marital status, veteran status, ancestry or political affiliation in its programs, activities, or employment.

Development and printing of this document is funded by the Carl D. Perkins Career & Technical Education Act of 2006 (Perkins IV).

Engineering Technology as of Fall 2015

— pre-requisite
credit hours / contact hours

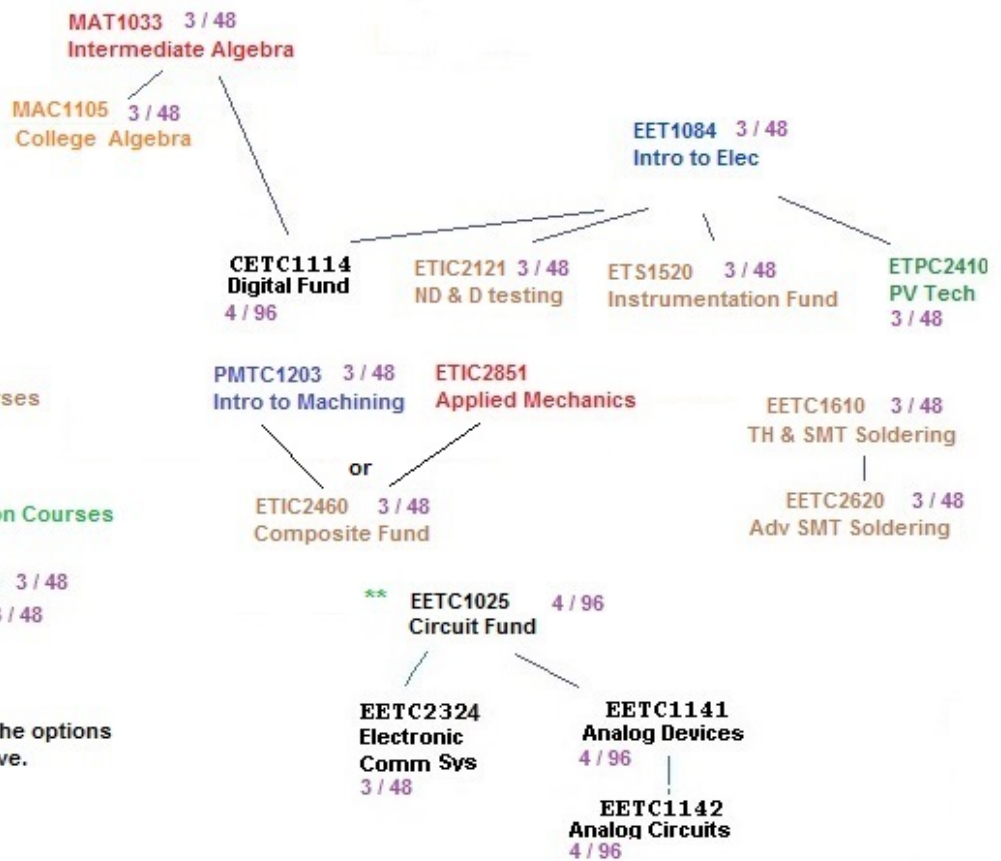
General Education Requirements

(See catalog for complete list)

Courses not listed in program but are prerequisites for courses that are !!

Major Courses

- ETDC2364 3 / 48
Solidworks Fund
- ETI1701 3 / 48
Industrial Safety
- ETI2110 3 / 48
Intro to Quality
- ETIC1830 3 / 48
Materials & Processes 1



Advanced Technology Option Courses

- ETS1240 Fiber Optic Tech 3 / 48
- ETMC1010 Mech Meas 1 /

Alternative Energy Systems Option Courses

- ETP1400 DEPG&S 3 / 48
- ETP1401 Alt/Renewable Energy 3 / 48
- ETP1420 Solar Thermal Tech 3 / 48

Electronics Option Courses

Any course required for one of the options can be used as a technical elective.
(See catalog for complete list)

Engineering Technology AS

60 Credits

Courses are guaranteed to be offered in the designated term. Full time students who follow the prescribed plan of study below should complete the program within two years. This plan does not include any required developmental education or prerequisite courses.

FALL 1

Course	Course Title	Subject Area	Credits	Notes:
MAC 1105	College Algebra	General Ed	3	
EET 1084	Introduction to Electronics	Major Course	3	
ETI 1701	Industrial Safety	Major Course	3	
PMTC 1203	Introduction to Machining	Major Course	3	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	

SPRING 1

Course	Course Title	Subject Area	Credits	Notes:
ENC 1101	Composition 1	General Ed	3	
ETDC 2364	SolidWorks Fundamentals	Major Course	3	
ETI 2110	Introduction to Quality Assurance	Major Course	3	
ETIC 1830	Materials and Process 1	Major Course	3	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	

SUMMER 1

Course	Course Title	Subject Area	Credits	Notes:
SPC 2608	Fundamentals of Speech Communication	General Ed	3	
	Social/Behavioral Science Requirement	General Ed	3	

FALL 2

Course	Course Title	Subject Area	Credits	Notes:
	Humanities Requirement	General Ed	3	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	

SPRING 2

Course	Course Title	Subject Area	Credits	Notes:
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	
	Technical Elective or Degree Specialization	Elective/Specialization	2-4	