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ENGINEERING TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE



Program Information

If you enjoy working on a project from initial plans to completion and want to work in a growing field, then our Engineering Technology degree might be a great fit for you.

San Jacinto College's Associate of Applied Science (AAS) in Engineering Technology purpose is to provide students with a fundamental, insightful, and practical-based education centered around the knowledge, skills, and abilities of existing and new developments emphasizing the application of specific engineering techniques. Graduates will develop the theoretical and practical understanding of the safety, processes, systems, tools, and techniques necessary to construct, refine, operate, and maintain an engineering design.

The differences between engineering and engineering technology are not always obvious. Engineering technicians apply basic engineering principles and technical skills to support engineers engaged in various projects. This field includes multiple engineering support functions for research, production, operations, and applications to specific engineering specialties calling for the practical application of science, math, and engineering to many problems. Engineering technicians and technologists work in partnership with engineers or scientists to bring humanity-benefitting designs from the realm of pure theory into reality, developing improvements to existing processes or creating entirely new technologies.

Though engineering technicians work alongside engineers, they have markedly different responsibilities. An engineering technician works alongside a qualified team of engineers and technologists to ensure all equipment used to bring a design to life remains functional and working. Specific duties include collecting materials, running tests, recording data, providing all available equipment, and working throughout the development process. Engineers tend to focus on the theoretical aspects of mathematics, science, and engineering principles. Their process revolves around identifying solutions to real-world problems and conducting the analysis needed to confirm it is a viable idea. Engineers must obtain a bachelor's degree or higher for employability and may require additional licenses and certifications to advance. In contrast, engineering technicians must obtain a certificate, associate degree, and industry certifications to advance.

At San Jacinto College, the engineering technology curriculum will cover topics in:

- General Engineering
- Safety and Tools
- Electricity/Electronics
- Material Science/Composites
- · Computer Aided Design
- · Additive and Subtractive Manufacturing
- Quality Assurance/Reliability

Career Opportunities

Graduates are prepared to become engineering technicians working in a wide range of fields such as aerospace, aviation, phones, highway and bridge construction, manufacturing systems, piping systems for chemical plants, computers, and even toy making.

The need for qualified engineering technicians is greater than ever. As various types of engineering projects get off the ground, the demand grows more every year. According to the Bureau of Labor Statistics (BLS) and JobsEQ, mechanical engineering technologists and technicians will enjoy a national job growth of 6% between 2020 and 2030.

Earning Potential

Aerospace Engineering and Operations Technologists and Technicians: $$139,463^{1}$ per year

Electrical and Electronic Engineering Technologists and Technicians: \$71,436¹ per year

Industrial Engineering Technologists and Technicians: \$83,998¹ per year

Mechanical Engineering Technologists and Technicians: \$65,459¹ per year

¹ Source: texaswages.com (http://texaswages.com/), median salary Gulf Coast region, 2023

For more information, students may contact Department Chair Roger Watkins, at roger.watkins@sjcd.edu or 281-929-4603.

Campus

South Campus

Information

Students in this program must participate in an external learning experience course called ENTC 2380 Cooperative Education - Engineering Technology, General. Students enrolling into San Jacinto College programs with external learning experiences (i.e., clinical, practicum, externship, cooperative, etc.) will be required to comply with the immunization requirements and policies of the clinical/external learning sites to engage in all clinical/external learning experiences. Vaccination requirements at clinical/external learning sites are implemented pursuant to the independent authority of such facilities and are not mandated by San Jacinto College. Failure to meet the immunization requirements mandated by clinical/external learning sites may limit a student's ability to complete the program and/or may delay the student's graduation date. San Jacinto College does not process exemptions, and students should address potential vaccination exemptions directly with the clinical/ external learning site.

Plan of Study

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First Year

First Term		Credits
ENGL 1301	Composition I	3
ELPT 1311	Basic Electrical Theory	3
or CETT 1302	or Electricity Principles	
ENTC 1271	Introduction to Engineering Technology	2
ENTC 1347	Safety and Ergonomics	3
MATH 1314	College Algebra	3
	Credits	14
Second Term	2	
DFTG 1313	Drafting for Specific Occupations ²	3
INTC 1307	Instrumentation Test Equipment	3
RBTC 1305	Robotic Fundamentals	3
MATH 1316 or MATH 2412	Plane Trigonometry or Pre-Calculus Math	3
Social and Behav	ioral Sciences	3
	Credits	15
Summer Year One	e Term	15
Select one of the	following:	4
SCIT 1418	Applied Physics	
PHYS 1301	College Physics I (lecture)	
& PHYS 1101	and College Physics I (lab)	
PHYS 2325	University Physics I (lecture)	
& PHYS 2125	and University Physics I (lab)	
	Credits	4
Second Year		
First Term	2	
ENTC 1343	Statics ³	3
METL 1401	Introduction to Metallurgy	4
INMT 1319	Manufacturing Processes	3
QCTC 1243	Quality Assurance	2
	Credits	12
Second Term		
ENTC 1323	Strength of Materials	3
ENTC 2380	Cooperative Education - Engineering Technology, General	3
MFGT 1302	Introduction to Automated Manufacturing	3
Select one of the following:		3
SPCH 1311	Introduction to Speech Communication	
SPCH 1315	Public Speaking	
SPCH 1318	Interpersonal Communication	
SPCH 1321	Business and Professional Speech	
Language. Philos	ophy and Culture (Humanities) or Creative	3
Arts (Fine Arts)		
	Credits	15
	Total Credits	60

Capstone Experience: ENTC 2380 Cooperative Education – Engineering Technology, General

- ¹ Students who have successfully completed ENGR 1201 Introduction to Engineering may use ENGR 1201 Introduction to Engineering to fulfill this requirement.
- ² Students who have successfully completed ENGR 1304 Engineering Graphics I may use ENGR 1304 Engineering Graphics I to fulfill this requirement.
- ³ Students who have successfully completed ENGR 2301 Engineering Mechanics - Statics may use ENGR 2301 Engineering Mechanics -Statics to fulfill this requirement.