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: $78,190[1] per year

Electrical and Electronic Engineering Technologists and Technicians: $72,170[1] per year

Industrial Engineering Technologists and Technicians: $69,103[1] per year

Mechanical Engineering Technologists and Technicians: $68,188[1] per year

[1] Source: texaswages.com (http://texaswages.com/), median salary Gulf Coast region, 2021

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. 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

3ENGR

First Year		
First Term		**Credits**
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	
ENGL 1301	Composition I	3
ELPT 1311	Basic Electrical Theory	3
MATH 1314	College Algebra	3
ENTC 1271 or ENGR 1201	Introduction to Engineering Technology or Introduction to Engineering	2
	Credits	**14**
Second Term		
DFTG 1313 or ENGR 1304	Drafting for Specific Occupations or Engineering Graphics I	3
Social and Behavioral Sciences		3
RBTC 1305	Robotic Fundamentals	3
MATH 1316	Plane Trigonometry	3
Select one of the following:		4
SCIT 1418	Applied Physics	
PHYS 1301 & PHYS 1101	College Physics I (lecture) and College Physics I (lab)	
PHYS 2325 & PHYS 2125	University Physics I (lecture) and University Physics I (lab)	
	Credits	**16**
Second Year		
First Term		
INTC 1307	Instrumentation Test Equipment	3
Language, Philosophy and Culture (Humanities) or Creative Arts (Fine Arts)		3
ENTC 1347	Safety and Ergonomics	3
METL 1401	Introduction to Metallurgy	4
ENTC 1343 or ENGR 2301	Statics or Engineering Mechanics - Statics	3
	Credits	**16**
Second Term		
ENTC 2380	Cooperative Education - Engineering Technology, General	3
QCTC 1243	Quality Assurance	2
ENTC 2331	Manufacturing Materials	3
ENTC 1349	Reliability and Maintainability	3
ENTC 1323	Strength of Materials	3
	Credits	**14**
	Total Credits	**60**

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