

THE FIELD OF ENGINEERING

Engineers are the designers of our modern society - designing everything from cars, planes, buildings, roads, cell phones, & TV's! There are numerous disciplines of engineering: civil, mechanical, electrical, biomedical, industrial, aerospace, & many others. Engineer's salaries are among the highest of all college graduates. Santa Ana College offers several degree options: certificate, associate degree, or university transfer.

Engineers ~ \$109k/yr*
Engineering technicians ~ \$67k/yr*
Drafters ~ \$63k/yr*
(www.labormarketinfo.edd.ca.gov, 2020)
(* Estimated median wages for CA are shown.
Actual salary will depend on experience and ability)

MECHANICAL/ELECTRICAL ENGINEERING

Mechanical & electrical engineers work mainly in the manufacturing sector, employed at companies that produce all of our goods and products (cars, planes, cell phones, TVs, etc.). We have programs that specialize in mechanical drafting/CAD (Solidworks, drafting practices, GD&T), mechatronics engineering technology (computer/electronically-controlled machines), and engineering transfer.

SAC PROGRAM HIGHLIGHTS

Multiple Degree/ Certificate Programs
Engineering Drafting & Design and Engineering Technology
University transfer programs
Day, evening, weekend, online classes, engineering club
CAD Lab – state-of-the-art computer facilities
Circuits lab – breadboarding, DMMs, oscilloscopes, trainers
Mechatronics & fabrication lab – 3D printing, laser cutting, micro-controllers, robotics, sensors, actuators
Solidworks, GD&T
Transfer courses – electric circuits, statics, dynamics

CONTACT US:

We strongly advise students to meet with SAC Engineering faculty & with their transfer institution to plan their course work.

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714-564-6306

Business Division Office 714-564-6750
(Engineering is part of the Business Division)

STARTING OUT

Which courses should you take first?

- Engr 100A – Introduction to Engineering
- Engr 051 – Introduction to Drafting & CAD
- Engr 131 – Introduction to Mechatronics
- Engr 122 – Engineering Drawing
- Engr 103 – Solidworks

SAC webpage
www.sac.edu

SAC Engineering web
www.sac.edu/engineering

Nondiscrimination Policy

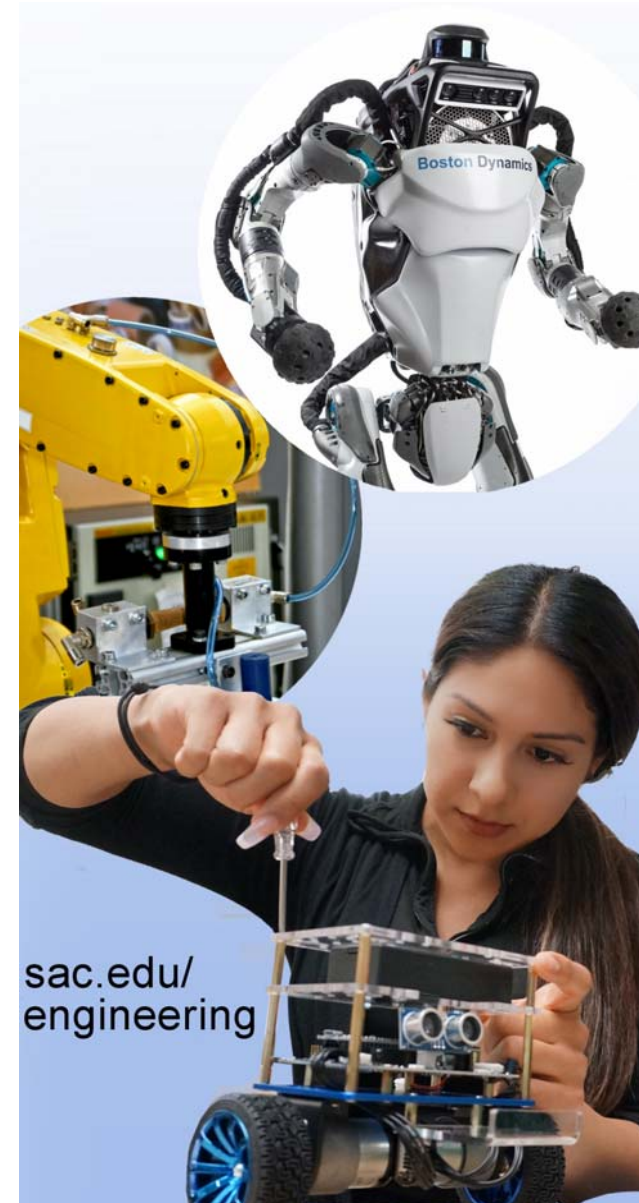
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Rancho Santiago Community College district
Title IX Officer and Section 504/ADA
John Didion, Coordinator
2323 N. Broadway
Santa Ana, CA 92706
714-480-7489



Santa Ana College
1530 West 17th Street
Santa Ana, CA 92706-3398

Santa Ana College Mechanical Engineering Programs



sac.edu/
engineering

ASSOCIATE DEGREE IN ENGINEERING

This degree provides a basic program of engineering courses for students planning to transfer to an engineering university program.

Required core courses for degree*: **Tot: 30-32**

Engineering courses (select at least 9 units)

Engr 100A, Intro to Engineering (Engr)	3
Engr 125 – Engr Graphics	3
Engr 103, Basic Solidworks	3
Engr 183, AutoCAD I	4
Engr 235, Statics	3
Engr 240, Dynamics	3
Engr 250, Electric Circuits	3
Engr 250L, Electric Circuits Lab	1
Engr 280, Strength of Materials	3
Cmpr 120, Intro to Programming	3
Cmpr 121, Programming Concepts	3

Science & Math courses (21 units)

Math 180 (or Math 180H) Calculus I	4
Math 185, Calculus II	4
Physics 217, Engineering Physics I	4
Physics 227 or 237, Engineering Physics II or III	4
Chemistry 219 (or 219H), General Chemistry	5

ENGINEERING CAD DRAFTING

This program teaches engineering CAD (computer-aided design) software in either of 2 areas: Mechanical or Civil (select ONE). Suggested additional courses: for mechanical: Engr 114; for civil: Engr 118, 119

Core courses for degree* or certificate: **Tot: 21-24**

Common courses (9-10 units)

Engr 100A (Intro Engr) OR Engr 100B (Intro Civil)	2-3
Engr 122, Engr Draw'g), OR Engr 125 (Engr Graphics)	3
Engr 183, AutoCAD I	4

Mechanical option (12 units)

Engr 103, Basic Solidworks	3
Engr 104, Intermediate Solidworks	3
Engr 105, Advanced Solidworks	3
Mnfg 106, Solidworks Drawings	3

Civil option (14 units)

Engr 012, Civil/Architectural Blueprint Reading	2
Engr 183, AutoCAD I	4
Engr 184, AutoCAD II	4
Engr 185, Civil 3D	4
Engr 154, REVIT & Civil Drafting	4



ENGR MECHANICAL DRAFTING & DESIGN

This program prepares students for employment as a MECHANICAL DRAFTER or DESIGNER (or related fields like aerospace, biomedical, or industrial).

Suggested additional courses: Engr 184 (AutoCAD II), 131, 133, trigonometry

Core courses for degree* or certificate: **Tot: 28**

Engr 100A, Intro to Engr	3
Engr 122, Engr Draw'g), OR Engr 125 (Engr Graphics)	3
Engr 183, AutoCAD I	4
Engr 103, Basic Solidworks	3
Engr 104, Intermediate Solidworks	3
Engr 105, Advanced Solidworks	3
Mnfg 106, Solidworks Drawings	3
Engr 114, GD & T	3
Engr 158, Basic Machining Concepts/Operations	3

ENGR MECHANICAL 3D SOLID-MODELING

This program prepares students for employment as a MECHANICAL DRAFTER or DESIGNER with strong emphasis on mechanical solid-modeling CAD software used in mechanical, aerospace, industrial, & biomedical engineering fields.

Core courses for certificate: **Tot: 15**

Engr 122, (Engr Draw'g), OR Engr 125 (Engr Graphics)	3
Engr 103, Basic Solidworks	3
Engr 104, Intermediate Solidworks	3
Engr 105, Advanced Solidworks	3
Mnfg 106, Solidworks Drawings	3



ENGINEERING MECHATRONICS

This program prepares students for employment as an ENGINEERING TECHNICIAN in the mechanical, electro-mechanical, aerospace, industrial, or manufacturing areas, but with an emphasis on mechatronics systems.

Suggested additional courses: Cmpr 120 (programming), Cmpr 121, Engr 131, 104 (SW II), Weld 101, Engr 250L

Core courses for degree* or certificate: **Tot: 20**

Engr 100A, Intro to Engr	3
Engr 122, Engr Draw'g), OR Engr 125 (Engr Graphics)	3
Engr 103 (Solidworks)	3
Engr 132, Intro to Robotics	2
Engr 133, Mechatronics I	3
Engr 134, Mechatronics II	3
Engr 158, Basic Machining Concepts/ Operations	3

*The Associate degree also requires general education coursework per Plans A, B, or C of the college catalog. (~ 30 units).

