

# DEGREES & CERTIFICATES

## ENGINEERING ASSOCIATE OF SCIENCE (AS)

### About the Program

The Associates of Science in Engineering is offered to prepare students to transfer to a four-year institution as an engineering major. The core courses required for this degree will fulfill many of the lower division requirements for most campuses in the UC and CSU systems. This program will enable students to develop a strong foundational understanding in engineering, physics and mathematics that will be essential as they continue on the engineering pathway. In addition, students will benefit from hands-on laboratory experiences in their engineering and science courses allowing them to learn by doing. The LPC Engineering degree is intended for transfer, but some students may be able to obtain employment as an engineering technician or engineering technologist. Students are encouraged to meet with a counselor early on and refer to the catalog of the prospective transfer institution to determine specific major requirements required for transfer since they can vary from university to university. Finally, because this program is a high-unit major, counselors can also assist in determining appropriate general education courses to complete the degree requirements.

### Program Goals and Objectives

The goal of this program is to earn a local Associates of Science in Engineering, with the secondary goal of transferring to a four-year institution as an Engineering major. This program provides a guided path of courses to take for students who have not yet identified their specific career aspirations within the broader engineering field. Students will be able to develop a strong foundation in engineering, physics and mathematics, as well as gain critical hands-on laboratory skills that will help them to succeed in their future educational and career endeavors.

### Career Opportunities

Preparation for entry level jobs in Engineering generally requires a bachelor's degree in a specific engineering discipline. Engineering disciplines, or branches, include Aeronautical, Biomedical, Chemical, Civil, Computer, Electrical, Industrial, Manufacturing, and Mechanical Engineering. Engineering is an exciting, challenging and dynamic industry. Engineers use both scientific and mathematical principles to solve real world problems and to improve the lives of people around the globe. They can design everything from satellites that are used for global positioning systems (GPS) to biomedical devices such as stents and prosthetics, to more efficient processes to manufacture all-purpose household cleaner, and so much more.

### Program Outcomes

- Upon completion of the AS in Engineering, students are able to apply fundamental principles from mathematics, science and engineering to solve an engineering-related problem.
- Upon completion of the AS in Engineering, students are able to set up appropriate laboratory equipment, collect and analyze data, draw conclusions, and clearly communicate results.
- Upon completion of the AS in Engineering, students are able to use a variety of technological tools to solve engineering problems.

### Required Core: (33.5 units)

MATH 1 Calculus I.....	5
MATH 2 Calculus II.....	5
MATH 3 Multivariable Calculus.....	5
MATH 5 Ordinary Differential Equations.....	3.5
PHYS 1A General Physics I.....	5
PHYS 1B General Physics II.....	5
PHYS 1C General Physics III.....	5

### List A: Select Four (13-14 Units)

ENGR 23 Engineering Graphics.....	3
ENGR 26 Computational Methods for Engineers and Scientists.....	3
ENGR 35 Statics.....	3
ENGR 44 Introduction to Circuit Analysis.....	4
ENGR 46 Materials of Engineering.....	4

### List B: Select Two (5-9 Units)

CHEM 1A General College Chemistry I.....	5
CS 1 Computing Fundamentals I.....	4
ENGR 1 Introduction to Engineering.....	2
MATH 7 Elementary Linear Algebra.....	3.5
PHYS 1D General Physics IV.....	3

**Total Units in the Major.....51.5-56.5**

### Program-Based GE: Select One (3 units)

CMST 1 Fundamentals of Public Speaking.....	3
CMST 10 Interpersonal Communication.....	3

**Additional General Education..... 10**