Engineering

Award Type: Associate in Arts

The associate degree in engineering provides lower-division coursework that can serve as the basis for a bachelor's degree offered by a four-year college or university. Students who intend to transfer should check the lower-division requirements in the catalog of the college or university to which they intend to transfer, create a Student Educational Plan with an academic counselor, visit www.assist.org, and consult the engineering faculty. The engineering program provides a general background suitable for a variety of engineering fields including mechanical, civil, aerospace, electrical, computer and biomedical engineering.

The graduate of the Associate in Arts in Engineering will:

- Apply fundamental concepts of mathematics (through calculus), science and engineering.
- Identify, formulate, and solve basic engineering problems.
- Conduct experiments and analyze and interpret data.
- Make basic design decisions concerning appropriate-level engineering problems.
- Communicate effectively both orally and in writing, using symbols, graphics and numbers.
- Recognize the need for, and an ability to engage in, lifelong learning.
- Function professionally and ethically as an individual and within diverse teams.
- Use techniques, skills and modern engineering tools necessary in engineering education and practice.

Program Requirements

A major of 32 units is required for the degree. Required core courses (17 units):

Course Number	Course Title	Units
CHEM 150	General Chemistry 1	5.0
MATH 182	Calculus 2	4.0
PHYS 161	Engineering Physics 1	4.0
PHYS 162	Engineering Physics 2	4.0
	or	
PHYS 163	Engineering Physics 3	4.0

Category A - Engineering: Select a minimum of 6 units from Category A and 9 units from selected from Category A and/or Category B.

Course Number	Course Title	Units
ENGR 152	Statics	3.0
ENGR 154	Dynamics	3.0
ENGR 156	Strength of Materials	4.0
ENGR 161	Materials Science	3.0
	and	
ENGR 162	Materials Science Lab	1.0
ENGR 170	Electric Circuit Analysis	3.0
	and	
ENGR 171	Electric Circuit Lab	1.0

Category B - Engineering Support

Course Number	Course Title	Units
CHEM 151	General Chemistry 2	5.0
CS 111	Fundamentals of Programming 1	4.0
ET 140	Engineering Drawing	3.0
ET 145	Advanced Engineering Drawing	3.0

MATH 183	Multivariable Calculus	4.0
MATH 184	Linear Algebra/Differential Equations	5.0
PHYS 162	Engineering Physics 2	4.0
	or	
PHYS 163	Engineering Physics 3	4.0

Recommended electives:

Course Number	Course Title	Units
ENGR 100	Introduction to Engineering	1.0
ENGR 124	Excel for Science and Engineering	1.0
ENGR 126	MATLAB for Science and Engineering	1.0