ENGINEERING: AEROSPACE AND MECHANICAL SPECIALTY (A.S.)

ASSOCIATE OF SCIENCE

An associate of science degree in engineering with a specialty in either aerospace or mechanical engineering provides students with an introductory knowledge of physics, chemistry, and math, and provides the skills necessary to pursue upper-division coursework at a four-year university as well as the experience needed for undergraduate research and entry-level internships. The degree program is composed of some common courses that are consistent with the transfer requirements to both UC and CSU systems and some elective and specialty courses that allow the student to tailor the degree to match some of the specific requirements of his or her transfer institution. This enables efficient completion of the A.S. degree while simultaneously completing transfer requirements, thus promoting timely completion of a bachelor's degree in either mechanical or aerospace engineering.

Program Student Learning Outcomes

- Ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.
- Ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Ability to communicate effectively with a range of audiences.
- Ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- Ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- Ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program Requirements

Code Number	Course Title	Units
Core Requirements		
CHEM 111	General Chemistry	5.0
MATH 170	Analytic Geometry and Calculus I	4.0
MATH 190	Analytic Geometry and Calculus II	4.0
MATH 225	Calculus III	5.0
PHYS 201	Engineering Physics	4.0
PHYS 202	Engineering Physics	4.0
Subtotal		26
Specialty Requirements		
Select three of the following:		8.0-14.5
CHEM 112	General Chemistry (5)	
CIS 180	Programming in C/C++ (3.5)	
ENGR 110	Introduction to Engineering (2)	
ENGR 112	Engineering Graphics (3)	
ENGR 210	Materials Science and Engineering (4.5)	
ENGR 220	Programming and Problem-Solving in MATLAB (3)	
ENGR 235	Statics (3)	
ENGR 240	Dynamics (3)	
ENGR 245	Strength of Materials (3)	
ENGT 131	Design Fundamentals Including 3D Modeling (3)	
ENGT 138	Introduction to Engineering Design Using Autocad (4)	
MATH 250	Linear Algebra and Differential Equations (5)	
PHYS 203	Engineering Physics (4)	
Total Units		**34-40.5**

ASSOCIATE OF SCIENCE DEGREE REQUIREMENTS

Completion of a minimum of 60 semester units to include (1) the courses listed above, (2) the A.A. degree general education requirements, and (3) a grade of "C" or better in all courses required for the major.