

ENGINEERING WITH EMPHASIS IN MECHANICAL ENGINEERING APPLICATIONS LEVEL - 2 (CERTIFICATE T0840)

Natural Science Division

The Engineering with Emphasis in Mechanical Engineering program concentrates on the development of mechanical devices and emerging technologies through the study of design principles, contextualized problem-solving, engineering materials, applied mechanics and industry standard tools. This degree program is for job seekers interested in mechanical engineering and mechanical engineering technology; as well as students interested in university programs in mechanical engineering and mechanical engineering technology.

The Engineering with Emphasis in Mechanical Engineering Applications Level 2 certificate incorporates the engineering, science, and communications skills needed by an entry-level mechanical engineering technology employee. Completion of this certificate will prepare graduates for multiple terminal technologist positions, including engineering technician, maintenance technician, facilities manager, manufacturing technician, operations technician, lab technician, technical sales and other endeavors related to mechanical components and systems. Through this program students will develop proficiency with mechanical systems, Microsoft Excel, oral communication, functional analysis, project management, developing presentations, laboratory analysis, computer aided design, geometric dimensioning and tolerances, programming, numerical methods and technical reporting. Completion of this certificate may facilitate transfer into B.S. programs in Electro-mechanical Systems Engineering Technology, Mechanical Engineering or other related fields.

Required Courses

Course Prefix	Course Name	Units
Completion of Engineering Fundamentals coursework		16-17
PLUS		
Completion of Engineering with Emphasis in Mechanical Engineering Applications - Level 1 coursework		12-13
PLUS		
Completion of Engineering with Emphasis in Mechanical Engineering Applications - Level 2 coursework		12
Total Units		40-42

Course Prefix	Course Name	Units
Completion of Engineering Fundamentals Coursework		
ENGL 1A	Freshman Composition	4
or ENGL 1AH	Freshman Composition - Honors	
or ENGL 1AM	College Composition for Non-Native English Speakers	
or AMLA 1A	College Composition for Non-Native English Speakers	
ENGR 1	Introduction to Engineering	2
ENGR 1C	Engineering Critical Thinking	3
MATH 150	Trigonometry	3
or MATH 160	Precalculus Mathematics	
or MATH 180	Calculus and Analytic Geometry	

PHYS 2AG	General Physics	4
Total Units		16 -17

Course Prefix	Course Name	Units
Completion of Engineering with Emphasis in Mechanical Engineering Applications - Level 1 Coursework		
CHEM 50	General Chemistry I	5
or CHEM 50H	General Chemistry I - Honors	
or CHEM 55	Chemistry for Engineers	
ENGR 8	Properties of Materials	4
or ENGR 18	Introduction to Engineering Graphics	
SPCH 1A	Public Speaking	4
or SPCH 1AH	Public Speaking - Honors	
Total Units		12-13

Course Prefix	Course Name	Units
Completion of Engineering with Emphasis in Mechanical Engineering Applications - Level 2 Coursework		
ENGR 6	Introduction to Engineering Programming Concepts and Methodologies	4
or ENGR 7	Programming Applications for Engineers	
ENGR 24	Engineering Graphics	4
MATH 181	Calculus and Analytic Geometry	4
Total Units		12

Please see the Mt. San Antonio College Engineering, Engineering Technology and Surveying Program Website (<https://www.mtsac.edu/engineering/>) for updated information on program courses, transfer help, extracurricular activities, faculty contact information and more.