

# ENGINEERING WITH EMPHASIS IN CHEMICAL AND MATERIAL ENGINEERING APPLICATIONS - LEVEL 2 (CERTIFICATE T0831)

## Natural Science Division

The Engineering with Emphasis in Chemical and Materials Engineering Applications program concentrates on the application of chemistry in an industrial setting through the study of design principles, contextualized problem-solving, engineering materials, applied mechanics and industry standard tools. This program is for job seekers interested in chemical engineering, materials engineering, chemical engineering technology and materials engineering technology; as well as students interested in university programs in material engineering technology, chemical engineering technology, chemical engineering and materials engineering.

The Engineering with Emphasis in Chemical and Materials Engineering Applications - Level 2 certificate incorporates the engineering, science, and communications skills needed by an entry-level chemical engineering technology and materials engineering technology employee. Completion of this certificate will prepare graduates for multiple terminal technologist positions, including quality control technician, lab technician, engineering technician, project analyst, engineering assistant. Through this program students will develop proficiency with data acquisition, mechanical systems, Microsoft Excel, oral communication, functional analysis, project management, developing presentations, laboratory analysis, materials testing, programming, numerical methods and technical reporting. Completion of this certificate may facilitate transfer into B.S. programs in Engineering Technology, Chemical Engineering, Materials Engineering or other related programs.

## Required Courses

Course Prefix	Course Name	Units
Completion of Engineering Fundamentals coursework		16-17
PLUS		
Completion of Engineering with Emphasis in Chemical and Material Engineering Applications - Level 1 coursework		13
PLUS		
Completion of Engineering with Emphasis in Chemical and Material Engineering Applications - Level 2 coursework		8
<b>Total Units</b>		<b>37 - 38</b>

Course Prefix	Course Name	Units
<b>Engineering Fundamentals</b>		
ENGL 1A	Freshman Composition	4
or ENGL 1AH	Freshman Composition - Honors	
or ENGL 1A	Freshman Composition	
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
<b>Total Units</b>		<b>16-17</b>

Course Prefix	Course Name	Units
<b>Completion of Engineering with Emphasis in Chemical and Material Engineering Applications - Level 1 coursework</b>		
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
SPCH 1A	Public Speaking	4
or SPCH 1AH	Public Speaking - Honors	
<b>Total Units</b>		<b>13</b>

Course Prefix	Course Name	Units
<b>Completion of Engineering with Emphasis in Chemical and Material Engineering Applications - Level 2 coursework</b>		
ENGR 6	Introduction to Engineering Programming Concepts and Methodologies	4
or ENGR 7	Programming Applications for Engineers	
MATH 181	Calculus and Analytic Geometry	4
<b>Total Units</b>		<b>8</b>

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.