

ENGINEERING WITH EMPHASIS IN SOFTWARE ENGINEERING APPLICATIONS LEVEL - 1 (CERTIFICATE T0842)

Natural Science Division Certificate T0842

The Engineering with Emphasis in Software Engineering Applications program concentrates on the design of complex computing systems through the applications of computing languages, contextualized problem-solving, control systems, and applied mathematics. This degree program is for job seekers interested in software engineering technology as well as students interested in university programs in software engineering and software engineering technology.

The Engineering with Emphasis in Software Engineering Applications Level 1 certificate incorporates the engineering, science, and communications skills needed by an entry-level software engineering technology employee. Completion of this certificate will prepare graduates for multiple terminal technologist positions, including engineering technician, software engineering technician, application developer, assistant engineer, technical sales, technical consultant and other endeavors related to electrical systems. Through this program, students will develop proficiency with electrical systems, mechanical systems, Microsoft Excel, oral communication, functional analysis, project management, developing presentations, laboratory analysis, programming, numerical methods, software development, and hardware interface tools. Completion of this certificate may facilitate transfer into B.S. programs in Engineering Technology, Software Engineering or Computer Science related degree programs.

Required Courses

Course Prefix	Course Name	Units
	Completion of Engineering Fundamentals coursework	16-17
	PLUS	
	Completion of Engineering with Emphasis in Software Engineering Applications - Level 1	15.5
Total Units		31.5-32.5

Course Prefix	Course Name	Units
Engineering Fundamentals Coursework		
ENGL 1A or ENGL 1AH or ENGL 1AM or AMLA 1A	Freshman Composition Freshman Composition - Honors College Composition for Non-Native English Speakers College Composition for Non-Native English Speakers	4
ENGR 1	Introduction to Engineering	2
ENGR 1C	Engineering Critical Thinking	3
MATH 150 or MATH 160 or MATH 180	Trigonometry Precalculus Mathematics Calculus and Analytic Geometry I	3
PHYS 2AG	General Physics	4
Total Units		16-17

Course Prefix	Course Name	Units
Engineering with Emphasis in Software Engineering Applications - Level 1 Coursework		
CSCI 110	Fundamentals of Computer Science	3.5
CSCI 190	Discrete Mathematics Applied to Computer Science	4
ENGR 6	Introduction to Engineering Programming Concepts and Methodologies	4
SPCH 1A or SPCH 1AH	Public Speaking Public Speaking - Honors	4
Total Units		15.5

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.

Program Learning Outcomes

Review Student Learning Outcomes (SLOs) (<http://www.mtsac.edu/instruction/outcomes/sloinfo.html>) for this program.