

# ENGINEERING WITH EMPHASIS IN SOFTWARE ENGINEERING APPLICATIONS (AS DEGREE S0841)

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## Natural Sciences Division

### Degree S0841

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

Engineering with Emphasis in Software Engineering Applications AS degree incorporates the engineering, science, and communications skills needed by an entry-level software engineering technology employee. Completion of this degree 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 degree 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
ENGR 1	Introduction to Engineering	2
ENGR 1C	Engineering Critical Thinking	3
ENGR 6	Introduction to Engineering Programming Concepts and Methodologies	4
ENGR 16	Introduction to Digital Electronics with FPGA Programming	4
CSCI 110	Fundamentals of Computer Science	3.5
CSCI 150	Assembly Language/Machine Architecture	3.5
CSCI 220	Data Structures I	3.5
or CSCI 240	Data Structures and Algorithms	
MATH 160	Precalculus Mathematics	4
or MATH 180	Calculus and Analytic Geometry I	
<b>Total Units</b>		<b>27.5 -29</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.

## Program Learning Outcomes

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