

## 2019-2020 Associate of Science in Engineering: Civil Engineering

Complete the following program of study (Major #C.3011.AS). Major requirements (42 units minimum).

A student earning this degree will have completed the lower division coursework necessary to transfer into a bachelor's degree program in Civil Engineering. In addition, a student earning this degree will be prepared for engineering internship opportunities.

**Name:** \_\_\_\_\_ **Student ID:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Course Overview and Selection

#### Required Core Courses:

Course	Course Description	Units	Completed	In Progress	Planned
<b>ENGR 10</b>	Introduction to Engineering	<b>2</b>			
<b>MATH 5A</b>	Math Analysis I	<b>5</b>			
<b>MATH 5B</b>	Math Analysis II	<b>4</b>			
<b>MATH 6</b>	Math Analysis III	<b>5</b>			
<b>MATH 17</b>	Differential Equations and Linear Algebra	<b>5</b>			
<b>PHYS 4A</b>	Physics for Scientists and Engineers	<b>4</b>			
<b>PHYS 4B</b>	Physics for Scientists and Engineers	<b>4</b>			

\*Select a minimum of four courses from the following:

Course	Course Description	Units	Completed	In Progress	Planned
<b>ENGR 2</b>	Engineering Graphics	<b>4</b>			
<b>ENGR 4</b>	Engineering Materials	<b>3</b>			
<b>ENGR 6</b>	Electric Circuits Analysis with Lab	<b>4</b>			
<b>ENGR 8</b>	Statics	<b>3</b>			
<b>**ENGR 40 or **ENGR 5 or **CSCI 40</b>	Programming for Scientists and Engineers <i>or</i> Programming and Problem-Solving in MATLAB <i>or</i> Programming Concepts and Methodology I	<b>4 or 3 or 4</b>			
<b>***CHEM 3A or ***CHEM 1A</b>	Introduction to General Chemistry <i>or</i> General Chemistry	<b>5</b>			
<b>PHYS 4C</b>	Physics for Scientists and Engineers	<b>4</b>			

#### Notes:

\*Student should carefully plan which of these courses to take based on their specific major and intended transfer institution(s). Some transfer institutions will have minimum requirements for transfer that will necessitate choosing more than 4 courses from this section.

\*\*Student should complete the programming course specifically required by his or her transfer institution of choice. The choices are ENGR 40 Programming for Scientists and Engineers (4 units), ENGR 5 Programming and Problem Solving in MATLAB (3 units), and CSCI 40 Programming Concepts and Methodology I (4 units).

\*\*\*Students should check the minimum chemistry transfer requirements for his or her intended transfer institution.

#### Program Learning Outcomes:

1. Apply knowledge of mathematics, science, and engineering fundamentals.
2. Conduct experiments as well as analyze and interpret the data resulting from these experiments.
3. Make basic design decisions concerning appropriate level engineering problems.
4. Communicate effectively, orally, in writing, and graphically.
5. Understand the impact of engineering solutions in a global and societal context.
6. Use the techniques, skills, and modern engineering tools necessary in engineering practice.

#### Comments: