



## **CURRICULUM GUIDE 2021-2022**

### **ENGINEERING**

#### **Associate in Science in Engineering**

#### **INTEREST AREA: SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)**

The Associate in Science in Engineering offered by Ohlone College is designed to prepare students for studying Engineering at most universities. The core courses required in the Associate in Science in Engineering will fulfill the lower division requirements for most campuses of the UC and CSU systems. This program will enable students to develop a strong foundation in engineering, physics, and mathematics. Furthermore, the theoretical knowledge and laboratory skills acquired by students in this program will also enhance their success with obtaining entry-level jobs that require two years of college-level science and math. Since some curriculum requirements may vary among transfer universities, it is imperative that students entering Ohlone's Associate in Science degree program in Engineering meet with a counselor at the start of their academic work. Counselors will assist students in preparing a Student Education Plan that will prepare them to transfer to the university of their choice. Counselors will also advise students on the general education plan that best prepares them for future transfer.

#### **Requirements for Associate in Science Degree:**

- a) Complete Major Field courses with a grade of C or better.
- b) Complete Ohlone College General Education (Plan A), CSU GE (Plan B), or IGETC (Plan C) requirements. These requirements are specified in the Ohlone College catalog.
- c) Complete at least 60 degree-applicable units with a 2.0 grade point average.
- d) Complete at least 12 units at Ohlone College.
- e) Complete at least two of the following courses at Ohlone College: ENGI-120, ENGI-130, and ENGI-140.

#### **Student Learning Outcomes**

1. Employ general principles, theories, concepts, and/or formulas in the solution of problems.
2. Conduct engineering lab project; use laboratory materials properly and safely; carefully note results in an engineering project report; and describe the results clearly for others.
3. Participate effectively as team members in group projects: working cooperatively with others, accepting diverse views, encouraging active participation of others, dealing productively with conflict, and taking leadership roles as the need arises to accomplish the group's objective.
4. Demonstrate the ability to use modern engineering tools necessary for engineering practice.
5. Demonstrate an understanding of the engineering profession.

#### **MAJOR FIELD**

CS-116	Object-Oriented Programming Using C++	4
ENGI-101	Introduction to Engineering	3
MATH-101A	Calculus with Analytic Geometry	5
MATH-101B	Calculus with Analytic Geometry	5
MATH-101C	Calculus with Analytic Geometry	5
MATH-104	Differential Equations	5
PHYS-140	Mechanics	4

PHYS-141	Electricity and Magnetism	4
PHYS-142	Optics, Heat, and Modern Physics	<u>4</u>
		39

Complete two of the following Engineering courses:

ENGI-120	Engineering Mechanics - Statics	3
ENGI-130	Electric Circuit Analysis	4
ENGI-140	Materials Engineering	<u>4</u>
		7-8

Total Required Units: 46-47

**RECOMMENDED COURSES**

CHEM-101A	General Chemistry	(5)
CHEM-101B	General Chemistry	(5)
ENGI-115	Engineering Graphics and Design	(4)
MATH-103	Introduction to Linear Algebra	(3)