



## **CURRICULUM GUIDE 2017-2018**

### **COMPUTER ENGINEERING**

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

The Associate in Science in Computer Engineering offered by Ohlone College is designed to prepare students for pursuing studies at the university level in computer science and engineering. The core courses in Computer Science, Engineering, Mathematics, and Physics required in this associate degree will fulfill the lower division major requirements at many universities. Students are advised, however, to meet with their counselor to assess the course requirements for specific universities. This program will enable students to develop a strong foundation in the computer and engineering sciences as well as a thorough training in applying their mathematical skills. In addition, students completing this program will acquire valuable cognitive skills (logic and common sense, reasoning and problem-solving skills) and practical laboratory skills. The theoretical and practical knowledge acquired through this program will enhance their success with obtaining entry-level jobs that require two years of college-level computer engineering and math.

#### **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 50% of the Major Field courses at Ohlone College.
- f) Complete two or more Computer Science courses plus ENGI-101 and ENGI-130 at Ohlone College.

#### **Student Learning Outcomes**

1. Design and conduct engineering-related experiments, then follow up to analyze and interpret the data.
2. Do a presentation of a project using effective oral and multimedia skills.
3. Research, analyze, and write about engineering and science-related topics.
4. Develop engineering drawings using current technologies.
5. Identify, analyze, and formulate solutions to engineering problems using skills obtained in mathematics, physics, chemistry, and engineering-related courses.

#### **MAJOR FIELD**

CS-102	Introduction to Computer Programming Using C++	3
CS-116	Object-Oriented Programming Using C++ OR	4
CS-118	Introduction to Assembly Language Programming	(3)
ENGI-101	Introduction to Engineering	3
ENGI-130	Electric Circuit Analysis	4
MATH-101A	Calculus with Analytic Geometry	5
MATH-101B	Calculus with Analytic Geometry	5
MATH-101C	Calculus with Analytic Geometry	5

MATH-103	Introduction to Linear Algebra	3
MATH-104	Differential Equations	5
MATH-163	Discrete Mathematics for Computers	3
PHYS-140	Mechanics	4
PHYS-141	Electricity and Magnetism	4
PHYS-142	Optics, Heat, and Modern Physics	<u>4</u>
Total Required Units:		51-52

### **RECOMMENDED COURSES**

To study computer engineering, students must be familiar with computers and computer applications. To study calculus students must have skills in algebra. The following courses are recommended:

CHEM-101A	General Chemistry	(5)
COMM-111	Introduction to Public Speaking	(3)
CS-101	Introduction to Computers and Information Technology	(3)
ENGI-115	Engineering Graphics and Design	(4)
ENGI-140	Materials Engineering	(4)
ENGL-101B	Reading and Composition (Introduction to Literature)	(4)
MATH-188	Pre-Calculus	(5)