CURRICULUM GUIDE
2017-2018

COMPUTER SCIENCE

Associate in Science in Computer Science

The Associate in Science in Computer Science 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, Mathematics, and Physics required for this associate degree will fulfill the lower division major requirements at many 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 students' success with obtaining entry-level jobs that require two years of college-level computer science and math.

Since some curriculum requirements may vary among transfer universities, it is imperative that students entering Ohlone's associate degree program in Computer Science meet with a counselor at the start of their academic work. Counselors will assist students in preparing a comprehensive 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 50% of the Major Field courses at Ohlone College.
f) Complete at least three or more Computer Science courses at Ohlone College.

Student Learning Outcomes

1. Given a specification, design an algorithm and implement the pseudocode to solve the problem.

2. Given a program with logic errors, correct the code by applying debugging and data validation skills.

3. Demonstrate knowledge of fundamental computer science concepts (e.g. hardware, logic, discrete mathematics, software design, networks, and the Internet.)

MAJOR FIELD

CS-102	Introduction to Computer Programming Using C++	3
CS-116	Object-Oriented Programming Using C++	4
CS-118	Introduction to Assembly Language Programming	3
CS-124	Programming with Data Structures	3
CS Electives	Any Computer Science course not listed above	2-4
MATH-101A	Calculus with Analytic Geometry	5
MATH-101B	Calculus with Analytic Geometry	5
MATH-103	Introduction to Linear Algebra	3
MATH-163	Discrete Mathematics for Computers	3
PHYS-140	Mechanics AND	4
PHYS-141	Electricity and Magnetism OR	4

| CHEM-101A | General Chemistry AND | (5) |
| CHEM-101B | General Chemistry | (5) |

Total Required Units: 39-43

RECOMMENDED CS ELECTIVES
Computer Science is a very diverse field. Ohlone offers many courses that enhance students' knowledge as preparation for advanced studies. Please see the Ohlone College catalog for electives such as .NET Programming (CS-104A and CS-104B); Java Programming (CS-170); Servlets and JSP (CS-172); SQL (CS-137); XML (CS-178); TCP/IP and Internetworking (CS-157); Data Communications (CS-152); UNIX/Linux Shell Scripting (CS-147).

RECOMMENDED COURSES
To study programming, students must be familiar with computers and computer applications. To study calculus, students must have skills in algebra. The following course is recommended:

| CS-101 | Introduction to Computers and Information Technology | (3) |

RECOMMENDED CORE COURSES
The following courses are recommended because they are required in the lower division of some baccalaureate-granting universities.

MATH-101C	Calculus with Analytic Geometry	(5)
MATH-104	Differential Equations	(5)
PHYS-142	Optics, Heat, and Modern Physics	(4)