



## **CURRICULUM GUIDE 2021-2022**

### **BIOENGINEERING**

#### **Associate in Science in Bioengineering**

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

This associate degree program in Bioengineering is designed to prepare students for entry-level positions in the bioengineering industry such as those in local national laboratories. Students will develop a strong foundation in the sciences (chemistry, biology, physics) and engineering. The theoretical knowledge and laboratory skills acquired by students in this program will enhance their success with obtaining entry-level jobs that require two years of college-level science and engineering.

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

- a) Complete Major Field courses and either Biomechanics Track or Statistical Track 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.

#### **Student Learning Outcomes**

1. Apply the scientific method, scientific reasoning, engineering principles, and/or formulas to problems related to biology, chemistry, physics, and engineering.
2. Demonstrate critical thinking, effective communication, and teamwork by contributing productively to the success of team-based science and engineering projects.
3. Demonstrate the proper techniques, safety procedures, and correct use of equipment used in science and engineering laboratories.

#### **MAJOR FIELD**

BIOL-101A	Principles of Biology - Molecular and Cellular Biology	5
BIOL-101B	Principles of Biology - Organisms and Systems	5
BIOT-113	GMP/GLP and Writing SOPs	1.5
BIOT-121	Biotechnology Careers	1
CHEM-101A	General Chemistry	5
CHEM-101B	General Chemistry	5
ENGI-101	Introduction to Engineering	3

ENGI-115	Engineering Graphics and Design	4
ETEC-107	Properties of Materials	<u>1.5</u>
		31
<b>Biomechanics Track</b>		
CS-102	Introduction to Computer Programming Using C++ <b>OR</b>	3
ETEC-106	Electronics for Technology	(3)
ENGI-111	Programming and Problem-Solving in MATLAB	3
MATH-101A	Calculus with Analytic Geometry	5
PHYS-140	Mechanics	<u>4</u>
		15
<b>Statistical Track</b>		
CS-133	Introduction to Statistical Software Programming	3
MATH-159	Introduction to Statistics	5
PHYS-120	Introduction to Physics I	<u>4</u>
		12

Total Required Units: 43-46