CURRICULUM GUIDE
2017-2018

BIOENGINEERING

Associate in Science in Bioengineering

Bioengineering is at the interface of medical sciences, basic sciences, and engineering, and has emerged internationally as an established engineering discipline. Bioengineers in the 21st century will solve problems in biology and medicine by applying biological principles and principles of physical sciences and engineering to create new engineering paradigms, such as biomimetic materials, DNA computing, and neural networking. 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 basic 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	1.5
		31

Biomechanics Track

CS-102	Introduction to Computer Programming Using C++ OR	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	4
		15

Statistical Track

CS-133	Introduction to Statistical Software Programming	3
CS-133A	Data Analysis Using Statistical Software OR	3
CS-143	Advanced Statistical Software Programming	(3)
MATH-159	Introduction to Statistics	5
PHYS-120	Introduction to Physics I	4
		15

Total Required Units: 46