



## **CURRICULUM GUIDE 2013-2014**

### **BIOTECHNOLOGY**

#### **Associate in Science in Biotechnology**

The Associate in Science in Biotechnology is a program designed to train students in the methods and techniques used in biotechnology. Courses in this program train students in standard biotechnology laboratory techniques and record keeping. The program prepares students for entry-level positions in bio-manufacturing and pharmomanufacturing positions.

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

- a) Complete the Biotechnology Core 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 Biotechnology Core Courses at Ohlone College.
- f) Complete BIOT-115A, BIOT-115B, BIOT-117, and BIOT-119 at Ohlone College.

#### **Student Learning Outcomes**

1. Apply industrial standards in recording laboratory procedures and results in a laboratory notebook.
2. Demonstrate the use of common laboratory equipment such as micropipetters, spectrophotometers, electrophoretic equipment, pH meters, thermocyclers, bioreactors, etc.
3. Prepare buffers and other laboratory stock and working solutions to proper specifications.

#### **BIOTECHNOLOGY CORE COURSES**

BIOT-105	Introduction to Cell and Molecular Biology	4
BIOT-110A1	Introduction to DNA Techniques	1
BIOT-110A2	PCR I and DNA Sequencing	1
BIOT-110A3	Protein Isolation and Assays	1
BIOT-111A	Genomic and cDNA Library Construction and Analysis	1
BIOT-111B	PCR Primer Design and Optimization and Reverse Transcription	1

BIOT-112	Introduction to Bioinformatics	2
BIOT-113	GMP/GLP	1
BIOT-115A	Mammalian Cell Culture Techniques	1
BIOT-115B	Bioreactor Cell Culture Techniques	1
BIOT-117	Immunology	1
BIOT-119	Clean Room Operations	.5
BIOT-121	Biotechnology Careers	1
BIOT-123	Writing SOPs	.5
BIOT-101	Environmental Biotechnology Research Projects OR	3
BIOT-114	Introduction to Plant Biology OR	(3)
BIOT-122	Introduction to Nanotechnology OR	(3)
BIOT-133	Introduction to SAS Programming	(3)
CAOT-148	Computer Applications in Biotechnology	.5
CHEM-109	Biochemistry for Health Science and Biotechnology	4
ENGL-156	Introduction to Report and Technical Writing	3
MATH-159	Introduction to Statistics	<u>5</u>
	Total Required Units:	32.5