



## CURRICULUM GUIDE 2014-2015

### BIOTECHNOLOGY: BIOTECHNOLOGY RESEARCH ASSOCIATE

#### Certificate of Achievement in Biotechnology: Biotechnology Research Associate

The Certificate of Achievement in Biotechnology: Biotechnology Research Associate is designed to train students in methods and techniques used in research settings. Courses in this program train students in DNA and protein laboratory techniques and assays, laboratory record keeping, sterile techniques, advanced PCR procedures, and genomic/cDNA library construction and analytical skills. The program prepares students for entry-level positions in biotechnology/pharmaceutical companies as research assistants and laboratory assistants/technicians.

#### Requirements for Certificate of Achievement:

- a) Complete Major Field courses as indicated below.
- b) Complete at least six units at Ohlone College.
- c) Maintain a 2.0 grade point average in Major Field courses.

#### 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 micropipettors, spectrophotometers, electrophoretic equipment, pH meters, thermocyclers, bioreactors, etc.
3. Prepare buffers and other laboratory stock and working solutions to proper specifications.
4. Analyze and interpret data from experiments.

#### MAJOR FIELD

BIOT-101	Biotechnology Research Projects	3
BIOT-104A	HPLC	.5
BIOT-105	Introduction to Cell and Molecular Biology	4
BIOT-110A	DNA and Protein Purification and Analysis	3
BIOT-111A	Genomic and cDNA Library Construction and Analysis	1
BIOT-111B	PCR Primer Design and Optimization and Reverse Transcription PCR	1
BIOT-113	GMP/GLP and Writing SOP's	1.5
BIOT-115A	Mammalian Cell Culture Techniques	1
BIOT-117	Immunology	1
BIOT-121	Biotechnology Careers	1
CAOT-148	Computer Applications in Biotechnology	.5
CHEM-109	Biochemistry for Health Science and Biotechnology	4
ENGL-156	Introduction to Report and Technical Writing	<u>3</u>

Total Required Units: 24.5