



## CURRICULUM GUIDE 2012-2013

### COMPUTER APPLICATIONS IN BIOTECHNOLOGY

Certificate of Accomplishment in Computer Applications in Biotechnology

#### Requirements for Certificate of Accomplishment:

- a) Complete satisfactorily the courses listed for the particular certificate.
- b) Complete at least 50% of the required units at Ohlone College.
- c) Maintain a 2.0 grade point average.

### COMPUTER APPLICATIONS IN BIOTECHNOLOGY

The field of computer applications in biotechnology is a complex hybrid of two distinct scientific disciplines-- computer technology and bioscience. This certificate is designed to provide an understanding of bioinformatics and other computer related subjects to students with some computer and/or life science background. This program is useful for students who desire to explore this new information science in which computers help to simulate, visualize, and analyze genetic and biological information. It also provides an introduction to the fundamental scientific and computational concepts, methods, and tools central to the growing field of computer applications in biotechnology.

#### Student Learning Outcomes

1. Examine cutting-edge biological concepts and computer technologies in biotechnology.
2. Operate main databases, tools, and methods for the storage, searching, and analysis of biological molecules.
3. Solve computational problems common to bioinformatics and apply classical computer science solutions to biotechnology.
4. Use statistical analysis software systems for data analysis.
5. Describe basic fundamentals of cells, major cellular components, DNA, and proteins.
6. Apply fundamental algorithms in biomolecular sequence analysis to problem solving in biotechnology.

BIOT-112	Introduction to Bioinformatics	2
BIOT-121	Biotechnology Careers	1
CS-131	Computing Concepts in Biotechnology	4
CS-133	Introduction to SAS Programming	3
BIOT-141B/CS-141B	SAS Graphing and ODS OR	2
BIOT-143/CS-143	Advanced SAS Programming OR	(3)
BIOT-133/CS-133A	Data Analysis Using SAS	(3)
		12-13