# Biotechnology

*Director:* Leilani Miller

Biotechnology is revolutionizing the practice of medicine and agriculture and is having an impact on fields as diverse as human reproduction, forensics, manufacturing, and pollution control. The minor in biotechnology is designed for students interested in gaining insight into the scientific background of biotechnology, exploring its potential for the future, and obtaining practical experience in laboratory techniques used in biotechnology research and its applications. This course of study is most useful for students contemplating careers in the biotechnology industry and students who plan to pursue advanced degrees in related areas such as molecular biology, cell biology, or biochemistry. The minor will be most easily completed by students majoring in biology, public health science, or chemistry and biochemistry; other majors should consult with their advisors and begin the course of study as early as possible in order to complete the requirements in a timely manner. Twelve courses are required for the minor, at least seven of which must have laboratory components.

In addition to coursework, students are required to complete a research internship at a biotechnology company, a research institute, or an academic laboratory focusing on an area relevant to biotechnology (i.e., cell biology, molecular biology, biochemistry, genetics, microbiology, or genomics). Internships must be approved in advance by the director. The minimum length of the internship is 10 weeks of full-time work or 400 hours total time if done on a part-time basis. Students must prepare a written report on the project upon completion to be evaluated by the director.

## Requirements for the Minor

Students must complete the following requirements for a minor in biotechnology:

Scientific Foundations of Biotechnology

* BIOL 1A, 1B, 1C, 175
* CHEM 11, 12, 31, 32, 33

Ethical Issues

* BIOL 171

Advanced Laboratory Skills

* BIOL 176, 177, 191, or CHEM 143

Contemporary Topics in Biotechnology and Related Fields

* BIOL 189

One Elective Course

* BIOL 110, 113, 116, 172, 174, 178, or CHEM 141

Note: If BIOL 171 or 189 is not offered during the academic year, any SCU course focused on medical ethics may be used as a replacement, with the consent of the director of biotechnology.