QUINCY COLLEGE

BIOTECHNOLOGY & GOOD MANUFACTURING PRACTICE
Associate in Science Degree

Program Description
The Biotechnology Program is designed to prepare students for entry-level positions in the biomanufacturing industry. Students will develop a broad laboratory science-based background through courses focused in the life and chemical sciences, and will obtain industry-specific knowledge in the areas of quality control (QC), process development (PD), and upstream and downstream processing, while following current, good manufacturing practices (cGMP). In addition, students will learn valuable laboratory techniques and instrumentation, and develop critical thinking skills. Upon successful completion of the program, students may enter the workforce directly as entry-level laboratory technicians or research assistants, or may transfer to a four-year university to continue their studies at the baccalaureate level.

Please note
Some courses in the curriculum for the degree may require prior completion of a prerequisite course that is not specifically required for the degree. In such cases, the prerequisite course must be completed even though it is not part of the degree requirement.

Program Outcomes
At the completion of this program, the student should be able to:
- Practice ethical standards of integrity, honesty, and fairness in scientific practices and professional conduct
- Apply appropriate computer software and hardware skills to accomplish biotechnology lab tasks
- Demonstrate technical knowledge of specialized techniques and instrumentation relating to biomanufacturing
- Communicate thoughts, orally and in writing, in a clear well-organized manner that effectively informs scientific principles and lab techniques
- Perform basic molecular biology & biochemical techniques
- Apply GMP documentation to biomanufacturing
- Perform all aspects of upstream and downstream processing in biomanufacturing
- Develop critical thinking skills to solve complex scientific problems

The College Core Requirements
- BIO 111 General Biology w/lab 4 credits
- Computers Science Core 3 credits
- ENG 101 English Composition I 3 credits
- ENG 102 English Composition II 3 credits
- History/Government Core 3 credits
- IDS 167 First Year Seminar 3 credits
- MAT 103 College Algebra 3 credits
- Social Science/Psychology Core 3 credits

Program Requirements
- BIO 151 Microbiology w/lab* 4 credits
- BTC 101 Introduction to Biotechnology w/lab* 4 credits
- BTC 210 Biochemistry w/lab* 4 credits
- BTC 220 Biomanufacturing I* 4 credits
- BTC 230 Biomanufacturing II* 4 credits
- BTC 240 Seminar in Biotechnology* 1 credit
- BTC 250 Biomanufacturing III* 2 credits
- CHE 121 General Chemistry I w/Lab* 4 credits
- CHE 122 General Chemistry II w/Lab* 4 credits
- Math Elective2 3 credits
- PHL 103 Medical Ethics 3 credits
- Program Elective 3-4 credits

Total credits required for graduation 65-66 credits

Program Electives
- BTC 260 Chromatography I 4 credits
- BTC 270 Chromatography II* 4 credits
- BTC 297 Biotechnology Internship* 3 credits
- CHE 213 Organic Chemistry I w/lab* 4 credits
- ENV 101 Intro Environmental Studies w/lab 4 credits
- PHY 111 General Physics I w/lab* 4 credits

Additional Information
1. All Biotech courses should be taken sequentially; the Chair of Biotechnology & Good Manufacturing Practices Program should approve any changes. The Chair can be reached via phone (617) 984-1669.
2. Math Elective: Complete either MAT 106 or MAT 107.

*Indicates course requires the completion of a prerequisite.

9/01/2018