INDUSTRY QUOTES

Massachusetts Life Sciences Center
“The workforce training you provide is top notch, high value, and deeply respected by the biomanufacturing community in Massachusetts and beyond.”
- Travis McCready, President & CEO

Shire
“As a hiring manager, I look for prospective employees who are both technically competent and who possess the skills required to learn on the job. Working in a highly technical and strictly regulated field requires employees who are able to follow precise procedures but also to think critically about the task. The Quincy College Biotechnology program consistently produces graduates that are prepared for this competitive marketplace.”
- Shawn Fitzpatrick, Bioreactor Operations Leader, MFG

Repligen
“The training programs that Quincy College has created, enables their students to enter the biopharmaceutical manufacturing industry with both the theoretical and hands on experience required by the industry.”
- Don King, Senior Director Manufacturing

MassBiologics
“MassBiologics of the University of Massachusetts Medical School has hired several graduates from the Quincy College Biotechnology & GMP Program. Those graduates have been hired directly into several departments in our cGMP environment including: Manufacturing, Supply Chain, Quality Control, and Quality Assurance. Without exception, each of those graduates has developed into a high performing member of their respective team. MassBiologics hiring managers now regard credentials from the Biotechnology & GMP programs to be a differentiator in the applicant screening process.”
- Frank Fazio, Deputy Director

QUINCY COLLEGE PARTNERS

Massachusetts Life Sciences Center
AMRI
Biogen
Takeda
MassBiologics
Shire
Ironwood
Repligen
MassBioEd
Investing in the State of Innovation
Quincy College
QC
quincycollege.edu/btc

BIOTECHNOLOGY AND GMP
GOOD MANUFACTURING PRACTICE

Associate of Science Degree
2 years

Certificate
10 months

Professional Development & Custom Short Courses
1-5 days
Areas of training include:

- **Regulatory**
  - GMP, cGMP, FDA, and ICH
- **Process Control**
  - Operation of Automated Systems
- **Upstream Bioprocessing**
  - Cell Culture, Wave Rockers, Bioreactors
- **Validation**
  - Equipment and Final Product
- **Quality Control**
  - Bioburden, Endotoxin, Air Sampling
- **Downstream Bioprocessing**
  - Filtration TFF/UF/DF, AKTA Protein Purification

Students learn the theory and instrumentation behind upstream and downstream manufacturing processes for both traditional and single-use technologies.

**Training Program and Industry Collaboration**
This program is designed to equip students with specific skills for employment in the Biopharmaceutical and Biotechnology industry.

Curriculum for this training program was established eight years ago with industry professionals. This program was established eight years ago with industry collaboration to ensure students are equipped with the required skills for the biomanufacturing industry. Curriculum is updated periodically with industry partner’s participation (Shire, GE, Biogen, MassBiologics, RA Pharmaceuticals, and Takeda).

**Associate Degree & Certificate Program Outcomes**
450 hours of hands-on training and the practical experience that will allow them to excel in the biomanufacturing industry. Class size is restricted to a maximum of 16.

**Virtual Lab - Upstream Processing**
https://atelearning.com/qcbio/
Login: Your email address | Password: qcbtc

**Instrumentation** (Lecture 25%/Lab 75%)
- AKTA pure system (Unicorn software)
- HPLC Agilent
- GC Agilent
- TFF UF/DF
- Packing and validation of small columns (HTP; Asymmetry)
- Quality Control (Bioburden, Endotoxin, Air Sampling (Viable/nonviable)

**Upstream & Downstream Processing** (Lecture 20%/Lab 80%)
- Microbial (Applikon 3L Traditional bioreactor and Controller)
- Mammalian (CHO Cells) (Single-use systems: shake flask, wave reactor, XDR-10 bioreactor); Harvest & Clarification; Concentration; Protein Purification

**Laboratory Techniques** (Lecture 10%/Lab 90%)
- Aseptic techniques: biosafety cabinets etc.
- Cell count: automated, hemocytometer
- Pipetting Skills: Serial dilutions and Standard plots
- Spectrophotometry: UV/Vis (Protein/DNA concentration; Protein spectra)
- Electrophoresis: Protein and DNA

**Science for the non-Scientist**
How biotechnology impacts your daily life (50% hands-on)
- Gene Therapy, GMO’s, Pollution, Cell Therapy, etc.

**Customizable Courses Available Upon Request**

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**For more info please contact**
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