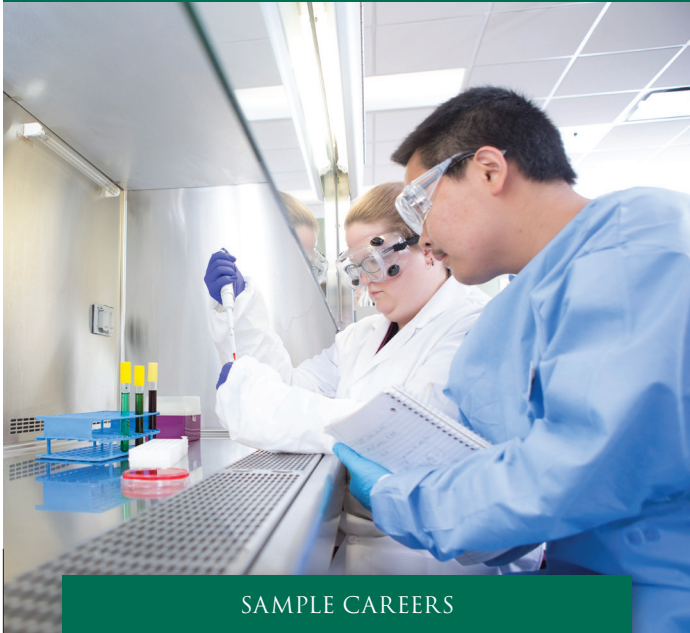


# BIOTECHNOLOGY



## SAMPLE CAREERS

- *Laboratory Technician*
- *Quality Control Technician*
- *Research Associate*
- *Quality Assurance Associate*
- *Manufacturing Associate*
- *Process Development Associate*
- *Calibration Technician*
- *Documentation Technician*
- *Inspector*
- *Production Technician,*
- *Regulatory Affairs Clerk*
- *Regulatory Affairs Technician*
- *Quality Investigator*

## Biotechnology Overview:

Biotechnology encompasses a wide range of industries that use living organisms to make beneficial products for humanity. Various natural sciences including cell and molecular biology, microbiology, genetics, physiology, and biochemistry, as well as medicine, engineering, and computer science are subdisciplinary areas of biotechnology. In the last two decades we have seen remarkable advances in many aspects of biotechnology; new diagnostic procedures for diseases such as cancer, genetic alterations of plants and animals, and production of bacteria that clean up toxic waste.

In the 21st century, we have tremendous potential to advance the field of biotechnology in order to improve the quality of all life. Rapid expansion of the biotechnology industry in central Indiana demands a highly-trained workforce.

## Biotechnology Degrees:

### Associate of Applied Science (AAS) Degree

The Associate of Applied Science program concentrates on technical and professional development courses that are directly applicable to the field of biotechnology. You can tailor your degree in:

- **Regulatory Affairs Focus**

Regulatory affairs is an area within certain industries, such as food, pharmaceutical and medical device industries, that ensures company compliance with mandated governmental regulations. Regulatory Affairs professionals work with federal (FDA or EMA), state, and local regulatory agencies and personnel on specific issues affecting their business. This Associate of Applied Science program emphasizes teaching students applications such as food and drug law, product life cycles, clinical trials, post market issues, technical writing and risk management.

- **Biotechnology Technical Focus**

This focus emphasizes teaching students applications such as analysis of biological molecules, recombinant DNA technology, cell culture skills using bioreactors and fermentors, and small and large scale biomolecule purification. Key program objectives include practicing within full compliance of the biotechnology regulatory environment, and practicing good documentation, and laboratory and plant safety skills.

### Associate of Science (AS) Degree

The Associate of Science program incorporates general education requirements such as math, English, foreign language and natural and social science courses, providing a strong foundation for advanced study of biotechnology at Indiana University in Bloomington. The complete Ivy Tech Associate of Science Degree in Biotechnology transfers seamlessly to Indiana University Bloomington. Many other four-year institutions accept credits from the Ivy Tech Biotechnology program.

## Biotechnology Certificates:

### Regulatory Affairs

This 18 credit certificate prepares students for entry level careers associated with regulatory affairs.

### Biopharmaceutical Manufacturing Certificate

This 18 credit, financial aid eligible certificate prepares students for entry level careers associated with bioprocessing.

## Indiana Center for the Life Sciences

The Ivy Tech Bloomington Biotechnology program is housed in the Indiana Center for the Life Sciences, a multi-faceted facility that houses labs, classrooms and industry training space.

Both certificates lead to an Associate of Applied Science in Biotechnology.

## CERTIFICATES

### Biopharmaceutical Manufacturing

BIOT 100	Survey of Biotechnology
BIOT 102	Survey of Biotechnology Manufacturing
BIOT 103	Safety and Regulatory Compliance
BIOT 104	Quality Practices
BIOT 105	Survey of Regulatory Affairs
BIOT 110	Pharmaceutical Product Manufacturing
<b>TOTAL CREDIT HOURS = 18</b>	



## DEGREES

### Biotechnology, AAS

COMM 101 or 102	Fund. of Public Speaking or Intro. to Interpersonal Communication
ENGL 111	English Composition
CHEM 105	General Chemistry I
MATH 136	College Algebra
IVYT 113	Student Success in Technology
BIOT 101	Intro. to Biotechnology
BIOL 121 or BIOL 105	General Biology I or Molecular and Cellular Processes
BIOT 103	Safety and Regulatory Compliance
BIOT 211	Analytical Methods I
BIOT 212	Analytical Methods II
XXX*	Humanities/ Social Science
BIOT 201	Cell Culture
BIOT 279	Biotechnology Capstone
BIOT 280 or BIOT 281	Biotechnology Internship or Independent Research and Development
CHEM 106	General Chemistry 2
<b>TOTAL CREDIT HOURS = 63</b>	

### Regulatory Affairs

ENGL 111	English Composition
ENGL 211	Technical Writing
BIOT 214	Food and Drug Law
BIOT 215	Clinical Trials
BIOT 216	Risk Management
BIOT 218	Product Life Cycle
<b>TOTAL CREDIT HOURS = 18</b>	



### Biotechnology, AAS

COMM 101 or 102	Fund. of Public Speaking or Intro. to Interpersonal Communication
CHEM 105	General Chemistry I
MATH 136	College Algebra
IVYT 113	Student Success in Technology
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\* XXX indicates an elective course chosen by the student