

BIOTECH INNOVATION AND ENTERPRISE, B.S.

About this major

The biotechnology and pharmaceutical industries are large and growing industries in the Philadelphia region and throughout the country. Companies developing, manufacturing, and marketing cutting-edge life science technology desire employees with knowledge and skill in both business and science, and who can work effectively in interdisciplinary teams to develop, manufacture and deliver their complex, life-saving products. These businesses need team members fluent in both science and business to oversee supply chains, manage finances and market their products. This major trains students in the foundational skills in biotechnology and business to prepare them for careers that require both, such as product development management and marketing, regulatory compliance, quality control, and clinical research coordination. This program combines strengths of the La Salle School of Business and Department of Natural Sciences within the School of Arts & Sciences to prepare students for interdisciplinary careers in the biotech sector.

This major is a great complement to minors such as the *Translational Science* and *Medical Device Sales* minors, in addition to other majors in the Natural Sciences department and Business School.

Why choose this major?

This major will prepare students for careers at the intersection of business and the life sciences. This major is specifically designed for students interested in working in areas such as pharmaceuticals, medical devices, or health industries. If you are thinking of a career that integrates both science and business, this is an excellent opportunity!

Degree Earned

Bachelor of Science (B.S.)

Required for Graduation

- Courses – Total 20
 - 5 Biology
 - 6 Business
 - 1 Chemistry
 - 1 Economics
 - 1 Environmental Science
 - 1 Math
 - 1 Capstone
 - 4 Concentration electives
- Credits
 - 120+ overall (Students must complete at least 120 credits)
 - 69-73 in major
- GPA
 - 2.0 overall
 - 2.0 in major courses

Student Learning Outcomes

By the end of the program, graduates will be able to:

- Apply the scientific method, design experiments, collect & analyze data to support bringing technology to market and inform business decision making.
- Communicate scientific and business information effectively to technical and non-technical audiences through written, visual, and oral formats.
- Design and assess innovation processes that integrate scientific discovery, business strategy, and ethical considerations to advance new products or technologies.

Code	Title	Credits
Level One - Core Courses		
<i>Universal Required Courses</i>		
Students must complete the following 4 courses.		
ILO 8.1: Written Communication (https://catalog.lasalle.edu/undergraduate/ilo/)		
ENG 110	College Writing I: Persuasion	3
ILO 5.1: Information Literacy (https://catalog.lasalle.edu/undergraduate/ilo/)		
ENG 210	College Writing II: Research	3
ILO 1.1: Understanding Diverse Perspectives (https://catalog.lasalle.edu/undergraduate/ilo/)		
FYS 130	First-Year Academic Seminar ¹	3
ILO 2.1: Reflective Thinking and Valuing (https://catalog.lasalle.edu/undergraduate/ilo/)		
REL 100	Religion Matters	3
<i>Elective Core Courses</i>		
Students must complete 1 course in each of the following 4 ILOs.		
ILO 3.1 a: Scientific Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		
BIO 205	Scientific Discovery: Phage Hunting I	4
ILO 3.1 b: Quantitative Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		
MTH 114	Applied Business Calculus	4
ILO 6.1: Technological Competency (https://catalog.lasalle.edu/undergraduate/ilo/)		
CSC 155	Introduction to Computer Applications for Business	3
ILO 8.1 a/12.1: Oral Communication/Collaborative Engagement (https://catalog.lasalle.edu/undergraduate/ilo/)		
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)		3
<i>Distinct Discipline Core Courses</i>		
Students must complete 1 course in each of the following 4 ILOs. Each course must be from a different discipline. (A "discipline" is represented by the 3- or 4-letter prefix attached to each course.)		
ILO 4.1: Critical Analysis and Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		
ECN 150	Introductory Macroeconomics: The U.S. in the Global Economy I	3
ILO 9.1: Creative and Artistic Expression (https://catalog.lasalle.edu/undergraduate/ilo/)		
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)		3
ILO 10.1: Ethical Understanding and Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		

Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)	3
ILO 11.1: Cultural and Global Awareness and Sensitivity (https://catalog.lasalle.edu/undergraduate/ilo/)	
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)	3
<i>Universal Required Modules</i>	
Students must complete the following 2 non-credit modules. ²	
ILO 7.1a (https://catalog.lasalle.edu/undergraduate/ilo/)	
Health Literacy Module	
ILO 7.1b (https://catalog.lasalle.edu/undergraduate/ilo/)	
Financial Literacy Module	
Major Requirements	
<i>Level Two</i>	
Students must complete 1 course/learning experience in each of the 4 commitments.	
ILO 2.2: Broader Identity (Capstone Course/Experience) (https://catalog.lasalle.edu/undergraduate/ilo/)	3
Select one of the following:	
BIO 480 Biological Research	
BUS 400 Business Strategy	
ENV 450 Capstone	
Select one ILO from 3.2a, 3.2b, 4.2, 5.2, 6.2, 7.2a, or 7.2b: Expanded Literacies (https://catalog.lasalle.edu/undergraduate/ilo/)	4
Select one of the following:	
BIO 303 Microbiology	
BIO 305 Mammalian Physiology	
BIO 310 Genetics	
ILO 8.2b: Effective Expression (Writing-Intensive Course) (https://catalog.lasalle.edu/undergraduate/ilo/)	
BUS 203 Organizational Behavior and Skill Development	3
Select one ILO from 10.2, 11.2, or 12.2: Active Responsibility (https://catalog.lasalle.edu/undergraduate/ilo/)	
BUS 303 Legal and Ethical Environment of Business	3
<i>All Other Required Courses</i>	
BIO 210 Integrated Biology I- Molecules and Cells	4
BIO 231 Regulatory Affairs	3
BIO 320 Biostatistics	3
BUS 101 Introduction to Financial Accounting	3
BUS 102 Accounting for Financial and Managerial Decision-Making	3
BUS 204 Principles of Marketing with Applications	3
BUS 208 Fundamentals of Financial Management	2-3
CHM 111 General Chemistry I	4
ENV 153 Introduction to Environmental Science	3
ENL 153 Laboratory	1
Choose a 4-course concentration:	
<i>Select one of the following:</i>	
Science to Market	12
MKT 301 Personal Selling	
MKT 303 Sales Management	
MKT 304 Business to Business Marketing	
MKT 374 Special Topics	
Innovation Launch	12

BIO 241	Product Dev & Validation	
BIO 330	Life Science Innovation	
ENT 201	Principles of Entrepreneurship	
MGT 375	Project Management	
Environmental Biotechnology		12
ENV 310	Introduction to Geographic Information Systems	
ISBT 421	Natural Resource Management (Soon to be ENV 421)	
MGT 309	Management Perspectives on Globalization	
POL 316	Environmental Law And Policy	
Total Credits		116-117

Progress Chart

Recommended Course Sequence

Course	Title	Credits
First Year		
First Semester		
BIO 205	Scientific Discovery: Phage Hunting I	4
BUS 101	Introduction to Financial Accounting	3
CSC 155	Introduction to Computer Applications for Business	3
Credits		10
Second Semester		
BUS 102	Accounting for Financial and Managerial Decision-Making	3
MTH 114	Applied Business Calculus	4
Credits		7
Second Year		
First Semester		
CHM 111	General Chemistry I	4
CHL 111	Laboratory	0
ENV 153	Introduction to Environmental Science	3
ENL 153	Laboratory	1
BUS 203	Organizational Behavior and Skill Development	3
Credits		11
Second Semester		
BIO 210	Integrated Biology I- Molecules and Cells	4
BIL 210	Laboratory	0
BUS 204	Principles of Marketing with Applications	3
Credits		7
Third Year		
First Semester		
ECN 150	Introductory Macroeconomics: The U.S. in the Global Economy I	3
Concentration Elective		3-4
Select one of the following:		4
BIO 303	Microbiology	
BIO 305	Mammalian Physiology	
BIO 310	Genetics	
Credits		10-11
Second Semester		
BUS 208	Fundamentals of Financial Management	3
BIO 231	Regulatory Affairs	3
BUS 303	Legal and Ethical Environment of Business	3
Select one of the following:		
BIO 303	Microbiology	
BIO 305	Mammalian Physiology	
BIO 310	Genetics	
Credits		9

Fourth Year**First Semester**

Concentration Elective Course	3-4
Concentration Elective Course	3-4

Credits **6-8**

Second Semester

Concentration Elective Course		3-4
BIO 320	Biostatistics	3
BIO 480	Biological Research	3
or ENV 450	or Capstone	
or BUS 400	or Business Strategy	

Credits **9-10**

Total Credits **69-73**

Course Descriptions

Code	Title	Credits
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Required Courses

BIO 205	Scientific Discovery: Phage Hunting I	4
BIO 210	Integrated Biology I- Molecules and Cells	4
BIL 210	Laboratory	0
BIO 231	Regulatory Affairs	3
BIO 320	Biostatistics	3
BUS 101	Introduction to Financial Accounting	3
BUS 102	Accounting for Financial and Managerial Decision-Making	3
BUS 203	Organizational Behavior and Skill Development	3
BUS 204	Principles of Marketing with Applications	3
BUS 208	Fundamentals of Financial Management	2-3
BUS 303	Legal and Ethical Environment of Business	3
CHM 111	General Chemistry I	4
CHL 111	Laboratory	0
CSC 155	Introduction to Computer Applications for Business	3
ENV 153	Introduction to Environmental Science	3
ENL 153	Laboratory	1
MTH 114	Applied Business Calculus	4

Upper Level Life Science Options

BIO 303	Microbiology	4
BIL 303	Laboratory	0
BIO 305	Mammalian Physiology	4
BIL 305	Laboratory	0
BIO 310	Genetics	4
BIL 310	Laboratory	0

Capstone Courses

BUS 400	Business Strategy	3
BIO 480	Biological Research	3
ENV 450	Capstone	3

Innovative Launch Concentration

ENT 201	Principles of Entrepreneurship	3
BIO 241	Product Dev & Validation	3
BIO 330	Life Science Innovation	4
MGT 375	Project Management	3

Science to Market Concentration

MKT 301	Personal Selling	3
MKT 303	Sales Management	3

MKT 304	Business to Business Marketing	3
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MKT 374	Special Topics	3
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Environmental Biotech Concentration

ENV 310	Introduction to Geographic Information Systems	3
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ISBT 421	Natural Resource Management (Soon to be ENV 421)	3
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POL 316	Environmental Law And Policy	3
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MGT 309	Management Perspectives on Globalization	3
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Program Contact Information

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