

BIOTECHNOLOGY (BS/MS)

Contacts

Program Director: Scott Gyga, PhD

Email: Scott.Gyga@jefferson.edu

215-503-8184

Campus: Center City, East Falls

Curriculum: BS/ MS, 2 Years, 74 Credits

- Credits Required for Admission: 82

Course	Title	Credits
First Year		
Fall		
Undergraduate Phase		
BT 303	Molecular Prep Techniques	3
BT 305	Survey of Biotech Applications	3
BT 310	Fundamental Molec Techniques	4
BT 405	Appld Microbial Biotechnology	3
LS 301	Molecular Biology	3
LS 304	Biochemistry	3
Credits		19
Spring		
BT 320	Cell and Tissue Culture	4
BT 403	Human Genetics	3
BT 406	Intro to Bioinformatics	2
BT 410	Molecular Diagnostic Technique	4
BT 411	Protein Purification & Charact	3
LS 540	Current Resrch in Biosciences	3
Credits		19
Second Year		
Fall		
Graduate Phase		
BT 812	Biotechnology Practicum I	3
BT 813	Biotechnology Practicum II	3
LS 531	Immunology	3
LS 603	Research Design	2
LS 640	Methods in Bioscience Edu	3
LS 804	Experimental Research I (approval) ¹	1
Program Approved Elective		3
Credits		18
Spring		
BT 525	Product Development&Management	3
BT 814	Biotechnology Practicum III	3
BT 815	Biotechnology Practicum IV	3
BT 816	Comprehensive Exam	0
LS 610	Reg & Fis Issues in Lab. Mgmt	3
Select one of the following:		1-2
LS 803	Contemporary Topics Research (approval) ²	
LS 805	Experimental Research II ¹	
Program Approved Elective		3
Credits		16-17
Total Credits		72-73

Research) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 Experimental Research I and LS 805 Experimental Research II). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 Experimental Research I and LS 805 Experimental Research II are not a substitute for nor may run concurrently with practica courses.

Curriculum: Advanced MS, 2 Years, 33 Credits

- Part-time without Concentration

Course	Title	Credits
First Year		
Fall		
LS 603	Research Design	2
BT 605	Appld Microbial Biotechnology	3
Select one of the following:		3
BT 812	Biotechnology Practicum I	
Program-Approved Elective		
Credits		8
Spring		
Select one of the following:		3
BT 813	Biotechnology Practicum II	
Program-Approved Elective		
Select one of the following:		3
BT 603	Human Genetics	
Program-Approved Elective		
Credits		6
Summer		
Select one of the following:		3
LS 610	Reg & Fis Issues in Lab. Mgmt	
Program-Approved Elective		
Select one of the following:		3
BT 814	Biotechnology Practicum III	
Program-Approved Elective		
Credits		6
Second Year		
Fall		
LS 504	Biochemistry	3
LS 804	Experimental Research I	1
Select one of the following:		3
BT 815	Biotechnology Practicum IV	
Program-Approved Elective		
Credits		7
Spring		
BT 606	Intro to Bioinformatics	2
BT 525	Product Development&Management	3
LS 805	Experimental Research II	1
Credits		6
Total Credits		33

Curriculum: MS, Two-Year

- Part-Time, Biopharmaceutical Process Development concentration

Course	Title	Credits
First Year		
Fall		
BT 605	Appld Microbial Biotechnology	3
Select one of the following:		3

² To meet the research requirement, students may take a classroom literature review-based course (LS 803 Contemporary Topics

2 Biotechnology (BS/MS)

Course	Title	Credits
BT 812	Biotechnology Practicum I	
Program-Approved Elective		
Credits		6
Spring		
Select one of the following:		3
BT 813	Biotechnology Practicum II	
Program-Approved Elective		
Select one of the following:		3
BT 603	Human Genetics	
Program-Approved Elective		
Credits		6
Summer		
Select one of the following:		3
LS 610	Reg & Fis Issues in Lab. Mgmt	
Program-Approved Elective		
BP 601	Bas Engineering for Scientists	2
BP 603	Intro to Biopharm Processing	2
Credits		7
Second Year		
Fall		
LS 603	Research Design	2
LS 804	Experimental Research I	1
Select one of the following:		3
BT 815	Biotechnology Practicum IV	
Program-Approved Elective		
Credits		6
Spring		
BT 606	Intro to Bioinformatics	2
BT 525	Product Development&Management	3
LS 805	Experimental Research II	1
Credits		6
Summer		
BP 604	Intro to Downstream Unit Oper	4
BP 605	Intro to Upstream Unit Oper	4
Credits		8
Total Credits		39

Curriculum: Advanced MS

- One year option without Concentration

Course	Title	Credits
First Year		
Fall		
Select one of the following:		3
LS 504	Biochemistry	
Program-Approved Elective		
BT 605	Appld Microbial Biotechnology	3
LS 603	Research Design	2
LS 804	Experimental Research I	1
Select one of the following:		3
LS 812	Practicum I	
Program-Approved Elective		
Select one of the following:		3
LS 813	Practicum II	
Program-Approved Elective		
Credits		15
Spring		
BT 606	Intro to Bioinformatics	2
Select one of the following:		3
BT 603	Human Genetics	

Course	Title	Credits
Program-Approved Elective		
BT 525	Product Development&Management	3
Select one of the following:		3
LS 610	Reg & Fis Issues in Lab. Mgmt	
Program-Approved Elective		
LS 805	Experimental Research II	1
Select one of the following:		3
LS 814	Practicum III	
Program-Approved Elective		
Select one of the following:		3
LS 815	Practicum IV	
Program-Approved Elective		
Credits		18
Total Credits		33

Curriculum: Advanced MS

- One year option Biopharmaceutical Process Development concentration

Course	Title	Credits
First Year		
Fall		
BT 605	Appld Microbial Biotechnology	3
LS 603	Research Design	2
LS 804	Experimental Research I	1
Select one of the following:		3
LS 812	Practicum I	
Program-Approved Elective		
Select one of the following:		3
LS 813	Practicum II	
Program-Approved Elective		
Credits		12
Spring		
BT 606	Intro to Bioinformatics	2
BT 525	Product Development&Management	3
Select one of the following:		3
LS 814	Practicum III	
Program-Approved Elective		
Select one of the following:		3
LS 815	Practicum IV	
Program-Approved Elective		
Credits		11
Summer		
BP 601	Bas Engineering for Scientists	2
BP 603	Intro to Biopharm Processing	2
BP 604	Intro to Downstream Unit Oper	4
BP 605	Intro to Upstream Unit Oper	4
Credits		12
Total Credits		35