



Cecil College and Jefferson College of Health Professions at Thomas Jefferson University

Concentration in Biopharmaceutical Process Development

Two-year Option (2+2)

Fall Semester (Year 1)		
Code	Course Name	Credits
BT 303	Molecular Preparatory Techniques	3
BT 310	Fundamental Molecular Techniques	4
BT 405	Applied Microbial Biotechnology	3
LS 301	Molecular Biology	3
LS 304	Biochemistry	3
Total Semester Credits		16

Spring Semester (Year 1)		
Code	Course Name	Credits
BT 320	Cell and Tissue Culture Techniques	4
BT 410	Molecular Diagnostic Techniques	4
BT 411	Protein Purification and Characterization	3
LS 440	Current Research in the Biosciences	2
Total Semester Credits		13

Summer Semester		
Code	Course Name	Credits
BP 401	Basic Engineering for Scientists	2
BP 403	Introduction to Biopharmaceutical Processing	2
BP 404	Introduction to Downstream Unit Operations	4
BP 405	Introduction to Upstream Unit Operations	4
Total Semester Credits		12

Summer Semester (Optional)

- Biotechnology Skill Building Discussion Group

Fall Semester (Year 2)		
Code	Course Name	Credits
BT 305	Survey of Biotechnology Applications	3
BT 412	Biotechnology Practicum I	3
BT 422	Biotechnology Practicum II	3
LS 403	Research Design	2
LS 331	Immunology	3
LS 404*	Experimental Research I	1
Total Semester Credits		15

Spring Semester (Year 2)		
Code	Course Name	Credits
BT 406	Introduction to Bioinformatics	2
BT 432	Biotechnology Practicum III	3
BT 442	Biotechnology Practicum IV	3
BT 403	Human Genetics	3
BT 325	Product Development & Management	3

LS 405*	Experimental Research II	1
LS 416	Comprehensive Examination	0
Total Semester Credits		15

TOTAL:

Credits Required for Admission	55
Undergraduate Credits-Year One	29
Undergraduate Credits-Summer	12
Undergraduate Credits-Year Two	30
Total Credits to Degree (minimum)	126

* To meet the research requirements, students will engage in a two-semester wet bench research project with a selected PI (LS 404 and LS 405). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 404 and LS 405 are not a substitute for clinical practica courses nor may run concurrently with practica courses. Alternatively, a 2 to 3 credit Program-Approved Elective may be selected to replace LS 404 and LS 405.