

Biomanufacturing (Minor)

Plan Requirements

Master's Requirements

Code	Title	Hours
Required Courses		9
BEC 669	Biomanufacturing Research Projects	
Select a minimum of eight credit hours of courses listed under "Elective Courses" below		
Total Hours		9

PhD Requirements

Code	Title	Hours
Required Courses		12
BEC 669	Biomanufacturing Research Projects	
Select a minimum of eight credit hours of courses listed under "Elective Courses" below		
Total Hours		12

Elective Courses

Code	Title	Hours
Select a minimum of eight credit hours of the following courses:		
BBS 526	Upstream Biomanufacturing Laboratory	2
BEC 515	Biopharmaceutical Product Characterization Techniques	2
BEC 525	Molecular Biology for Biomanufacturing	2
BEC 532	Foundations of Downstream Processing and Formulation	2
BEC 536	Introduction to Downstream Process Development	2
BEC 545	Cell Line Development for Biomanufacturing	2
BEC 575	Global Regulatory Affairs for Medical Products	3
BEC 577	Advanced Biomanufacturing and Biocatalysis	3
BEC 580	cGMP Fermentation Operations	2
BEC 585	cGMP Downstream Operations	2
BEC 588	Animal Cell Culture Engineering	2
BEC 590	Industry Practicum in Biomanufacturing	3
BEC 595	Special Topics in Biomanufacturing	1-6
BIT 566	Animal Cell Culture Techniques	2
CHE 563	Fermentation of Recombinant Microorganisms	2
Total Hours		40-45

Faculty

Full Professors

Ruben G. Carbonell

Amy Michele Grunden

Harold Henry Lamb

Paul Edward Mozdziak

Balaji M. Rao

Heike Inge Ada Sederoff

John Douglas Sheppard

Associate Professors

Paul T. Hamilton

Gavin John Williams

Assistant Professor

Stefano Menegatti

Practice/Research/Teaching Professors

Kirill Efimenko

Gary Louis Gilleskie

Imara Yasmin Perera

John H. van Zanten

Emeritus Faculty

Michael Carl Flickinger

Instructors

Gregory Kale Buhrman

Hayley Flores

Sara Siegel