

2026-27 Academic Catalog/Class of 2028 Graduation Requirements

Master of Engineering in Biopharmaceutical Processing (MEng)

To earn the MEng degree, students are required to complete the following coursework worth a total of 48 credit over two years of study.

- Core curriculum – 39 credit
 - Biopharmaceutical Processing Lecture (9 credit)
 - Biopharmaceutical Processing Lab (4.5 credit)
 - Biopharmaceutical Capstone - Team Design Project (9 credit)
 - Quality and Regulatory (1.5 credit)
 - Other Business, Science courses (15 credit)
- Concentration – 9 credit
- Students are also required to complete a 400-hour, paid, industry internship in the summer following their first year, and present an internship poster reviewed by KGI faculty/stuff. Students also need to complete PDEV 5100 (Professional Development) course prior to the internship – 0 credit

Program Requirements

1st Year FALL Core Courses			
Course title	Number	Module	Credit
Engineering Fundamentals for Bioprocessing [¶]	ENG 5153	FF	3
Introduction to Biology and Biochemistry [¶]	SCI 5500	FF	
Introduction to Bioprocessing	ENG 5160	F1	1.5
Principles of Cell Culture Process	SCI 5600	F2	1.5
Introduction to Upstream Processing LAB	ENG 5133	F2	1.5
Data Analytics in Python	MATH 5100	F1	1.5
Introduction to Bioscience Industries	BUS 5000	FF	3
Subtotal			12

[¶] Either ENG 5153 or SCI 5500 – assigned by Program Director based on transcript

1st Year SPRING Core Courses			
Course title	New number		Credit
Bioseparations Engineering and Science	ENG 5140	S1	1.5
Advanced Upstream Processing LAB	ENG 5134	S2	1.5
Downstream Processing LAB	ENG 5145	S1	1.5
Statistical Methods and Experimental Design in Bioprocessing	ENG 5110	S1	1.5
Quality Systems and Regulation for Biologics	REG 5310	S2	1.5
Machine Learning in the Life Sciences	MATH 5300	S1	1.5
Advanced Bioseparations Engineering	ENG 6140	S2	1.5
Advanced Upstream Processing	ENG 6132	S2	1.5
Subtotal			12

Program Requirements

2nd Year FALL Core Courses			
Course title	New number		Credit
Team Design Project (TDP)	ENG 6100	FF	6
Team Master's Project	PDEV 5000	SS	3
Subtotal			9

2nd Year SPRING Core Courses			
Course title	New number		Credit
Team Design Project (TDP)	ENG 6100	SS	3
Team Master's Project	PDEV 5000	SS	3
Subtotal			6

MEng Concentrations

Bioprocessing Research	
SCI 6401: Fundamental Papers in Molecular Biology and Biotechnology	1.5
SCI 6311: Cell-produced Therapeutics	1.5
RES 6000: Independent Research	3
Electives	3

Engineering Design	
ENG 5320: Computer Aided Design	1.5
ENG 5330: Prototyping Methods	1.5
ENG 6340: Device and Diagnostics Product Development	3
Electives	3

Quality and Regulatory	
REG 5000: Introduction to US Food and Drug Law	1.5
REG 6310: Advanced Quality Topics for Biologics	1.5
REG 6110: Drug and Biologic	1.5
REG 6320: Advanced Regulatory Topics for Biologics	1.5
Electives	3

Operations and Management	
BUS 6600: Business Operations	3
BUS 6610: Supply Chain Biotech Operations	3
Electives	3

* Students may choose the Elective Courses from the available KGI courses in consultation with the MEng Program Director and the Faculty Advisor.

