

**Approved Advanced Technical Elective Courses for Biochemistry Majors**

**Revised and Effective for Spring 2025**

The Biochemistry Specialized Curriculum requires at least 10 hours of Advanced Technical Elective course-work at the 300- or 400-level from this approved list.\* The college of LAS, for its Sciences and Letters Curriculum, requires students to earn at least 21 credit hours in advanced courses. Biochemistry Advanced Technical Electives count towards this total.

This document was last updated on November 4, 2024

<b>Approved SMCB Courses</b>				
Term(s) Offered	Course	Course Title	HRS	Notes
FA, SP	MCB 300	Microbiology	3	
FA, SP	MCB 301	Experimental Microbiology	3	**
FA	MCB 314	Introduction to Neurobiology	3	Same as NEUR 314
SP, SU	MCB 317	Genetics and Genomics	4	
FA	MCB 320	Mechanisms of Human Disease	3	
FA, SP	MCB 364	Eukaryotic Cell Biology Laboratory	2	
FA (odd years)	MCB 400	Cancer Cell Biology	3	
FA	MCB 401	Cellular Physiology	3	
SP	MCB 402	Systems and Integrative Physiology	3	
FA	MCB 408	Immunology	3	
SP	MCB 410	Developmental Biology, Stem Cells and Regenerative Medicine	3	
FA	MCB 413	Endocrinology	3	
FA	MCB 421	Microbial Genetics	3	**
SP	MCB 424	Microbial Biochemistry	3	
SP	MCB 426	Bacterial Pathogenesis	3	**
FA	MCB 428	Microbial Pathogens Laboratory	2	
SP	MCB 430	Molecular Microbiology	3	**
FA	MCB 431	Microbial Physiology	3	**
FA	MCB 432	Computing in Molecular Biology	3	
SP	MCB 434	Food and Industrial Microbiology	3	Same as FSHN 471
SP	MCB 435	Evolution of Infectious Disease	3	Same as IB 442; **
FA	MCB 436	Global Biosecurity	1	
FA	MCB 438	Virology	3	**

SP	MCB 442	Comparative Immunobiology	4	Same as ANSC 450 and PATH 410
FA, SP	MCB 460	Neuroanatomy Laboratory	2	**
FA	MCB 461	Cell and Molecular Neuroscience	3	Same as NEUR 461
SP	MCB 462	Integrative Neuroscience	3	Same as NEUR 462
SP	MCB 465	Human Metabolic Disease	3	
SP	MCB 466	Neuro and Molecular Pharmacology	3	
FA	MCB 471	Cell Structure and Dynamics	3	Returning Fall 2024
FA	MCB 474	Genetic Disorders and Counseling	3	**
SP	MCB 480	Eukaryotic Cell Signaling	3	
SP	MCB 493 CPP	Cancer Pathophysiology	3	
FA	MCB 493 EPI	Epigenetics	3	
SP	MCB 493 FMO	Functional Multiomics	3	**
SP	MCB 493 MTB	Modern Tech in Bio Research	3	
SP	MCB 493 NMI	Neurobiology of Mental Illness	3	**
SP	MCB 493 NOS	Neurobiology of Senses	3	**
SP	MCB 493 REM	Research Experience in Microbiology	3	
FA, SP, SU	BIOC 492	Senior Thesis	1-6	Up to 7 credit hours applied toward Technical Electives requirement

<b>Approved non-SMCB Courses</b>				
Term(s) Offered	Course	Course Title	HRS	Notes
FA	BIOP 432	Photosynthesis	3	Same as CPSC 489 and IB 421; **
SP	CHBE 471	Biochemical Engineering	3	
SP	CHBE 473	Biomolecular Engineering	3	
FA	CHBE 475	Tissue Engineering	3	**
FA, SP	CHEM 312	Inorganic Chemistry	3	
SP	CHEM 437	Organic Chemistry Lab	3	
FA	CHEM 480	Polymer Chemistry	3	Same as MSE 457
SP	CHEM 482	Polymer Physics	3	Same as MSE 458; **
FA	CS 466	Introduction to Bioinformatics	3	**
SP	IB 302	Evolution	4	**
FA	IB 360	Evolution and Human Health	3	Same as ANTH 360; **
SP	IB 361	Ecology and Human Health	3	Same as ANTH 361
FA	IB 364	Genomics and Human Health	3	**
SP	IB 420	Plant Physiology	3	Same as CPSC 484, **
SP	IB 432	Genes and Behavior	3	Same as ANTH 432, NEUR 432, and PSYC 432; ***



SP	IB 497	Science Communication	3	
FA, SP	MATH 415	Applied Linear Algebra	3-4	
FA, SP, SU	MATH 453	Number Theory	3-4	
FA, SP	PHYS 404	Electronic Circuits	5	**
FA, SP	PHYS 420	Space, Time, and Matter	2	Same as PHIL 420; **
FA	PSYC 403	Memory and Amnesia	3	Same as NEUR 403; **
SP	PSYC 413	Advanced Neuropsychopharmacology	3	Same as NEUR 413; **
FA	PSYC 417	Neuroscience of Eating and Drinking	3	Same as FSHN 417, NEUR 417, NUTR 417; **
FA, SP, SU	STAT 400	Statistics and Probability I	4	Same as MATH 463
FA, SP, SU	STAT 410	Statistics and Probability II	3	Same as MATH 464; **
FA, SP, SU	STAT 420	Methods of Applied Statistics	3	Same as ASRM 450; **
FA, SP	STAT 430	Topics in Applied Statistics	3	**

\* 300- or 400-level courses in BADM, FSHN, and MATH may be considered for approval by Biochemistry advising. Please book an appointment at <https://mcb-uiucbioadvising.youcanbook.me/>

\*\* This course requires prerequisite classes not included in the Biochemistry curriculum or prior consent of the instructor. Please consult the course explorer to learn more.

