APPROVED TECHNICAL ELECTIVES FOR THE CWRU BIOCHEMISTRY MAJOR

BIOC 310	Microbial Physiology and Therapeutic Opportunities
BIOC 311	Antimicrobial Therapies and Resistance
*BIOC 312	Proteins and Enzymes
BIOC 315	Biological Membranes and Their Proteins
*BIOC 334	Structural and Computational Biology
BIOC 344	Molecular Endocrinology
BIOC 345	Metabolic Dysregulation and Human Disease
*BIOC 350	Molecular Basis of Cancer
BIOC 353	Biochemical Pathways in Cancer Therapeutics
BIOC 360	Advanced Technologies for Cancer Research
BIOC 501	Biochemical and Cellular Techniques for Biotechnology
ANAT 301	Multimodal Human Anatomy
ANAT 391	Embryology
BIOL 300	Dynamics of Biological Systems
BIOL 301	Biotechnology Laboratory
BIOL 319	Applied Probability and Stochastic Processes for Biology
BIOL 325	Cell Biology
BIOL 326	Genetics
BIOL 328	Plant Genomics and Proteomics
BIOL 340	Human Physiology
BIOL 343	Microbiology
BIOL 346	Human Anatomy
BIOL 362	Principles of Developmental Biology
BIOL 373	Introduction to Neurobiology
BIOL 402	Principles of Neural Science
CHEM 301	Introductory Physical Chemistry I
CHEM 302	Introductory Physical Chemistry II
CHEM 325	Physical Methods for Determining Organic Structure
CHEM 330	Bioconjugate Chemistry
ECHE 340	Biochemical Engineering
MATH 376	Mathematical Analysis of Biological Models
MBIO 450	Cells and Pathogens
NEUR 301	Biological Mechanisms of Brain Disorders
PATH 316	Fundamental Immunology (4)
PATH 444	Neurodegenerative Diseases
PHOL 466	Cell Signaling
PHRM 309	Principles of Pharmacology
PHYS 320	Introduction to Biological Physics

* Fall 2023 general bulletin or later: BA and BS students must complete 2 of BIOC 312, 334, and 350; students completing all 3 can use the third course as a technical elective
* Pre-fall 2023 general bulletin: BS students must complete both BIOC 312 and 334; BA students must complete either BIOC 312 or 334, and can use the second course as a technical elective if they complete both

**Only for the Computational Health Science concentration and with PQHS instructor approval:

PQHS 413	Introduction to Data Structures and Algorithms in Python
PQHS 414	Data Management and Statistical Programming
PQHS 416	AI in Medicine: Knowledge Representation and Deep Learning
PQHS 431	Statistical Methods I