

Advanced Science Electives for BA and BS Degrees in Biochemistry and Molecular Biology

The requirement for advanced science electives is intended to help students expand their education by pursuing courses outside the standard Biochemistry and Molecular Biology (BMB) undergraduate curriculum. The requirement usually is fulfilled by taking classes that are 3000-level or higher (though some lower-level classes may be acceptable). Independent study and research credits do NOT count toward this requirement.

The BS degree in BMB requires six semester hours of either BMB 4999 (Advanced Undergraduate Biochemistry Research) **or** advanced laboratory courses. BMB 4999 research credit can be completed by working in a non-BMB laboratory upon approval from the BMB Director of Undergraduate Studies. **Advanced laboratory courses are indicated in bold below.** The list is not comprehensive; if a student identifies an advanced laboratory course that might fulfill this requirement, approval should be sought from the Director of Undergraduate Studies. It may be necessary for the student to obtain a syllabus or other information from the instructor before the Director of Undergraduate studies can make this decision.

Examples of Advanced Science Electives are listed below*. The list is not comprehensive; if a student identifies a course that might qualify as an advanced science elective, approval should be sought from the Director of Undergraduate Studies. It may be necessary for the student to obtain a syllabus or other information from the instructor before the Director of Undergraduate studies can make this decision.

		# S.H.	Semester offered			# S.H.	Semester offered
Anatomy and Cell Biology				BIOL 3713	Molecular Genetics	4	Fall, Spr
ACB 3110	Principles of Human Anatomy	3	Fall	BIOL 3716	Genetics & Biotech Lab	4	Spr
Biochemistry and Molecular Biology				BIOL 3736	Developmental Biology Lab	4	Spr
BMB 4310 (BME 4310)	Computational Biochemistry	3	Fall	BIOL 4333	Genes & Development	3	Spr
Biology				Biomedical Engineering			
BIOL 2254	Endocrinology	3	Fall, Spr	BME 4310	Computational Biochemistry	3	Fall
BIOL 2512	Fundamental Genetics	4	Fall, Spr, Su	Biostatistics			
BIOL 2673	Ecology	3	Spr	BIOS 4120	Introduction to Biostatistics	3	Fall, Spr, Su
BIOL 2723	Cell Biology	3	Fall, Spr	Chemistry			
BIOL 3172	Evolution	4	Fall, Spr	CHEM 2021	Fund of Chem Measurements	3	Fall, Spr
BIOL 3212	Bioinformatics for Beginners	3	Fall	CHEM 3110	Equilibria and Electrochem	3	Fall
BIOL 3233	Intro to Developmental Bio	3	Fall	CHEM 3120	Spectroscopy and Separations	3	Spr
BIOL 3244	Animal Behavior (can be taken without or with lab)	3,5	Fall	CHEM 3250	Inorganic Chemistry	3	Spr
BIOL 3253	Neurobiology I	4	Fall	CHEM 3430	Analytical Measurements	3	Spr
BIOL 3343	Animal Physiology	3	Fall	CHEM 3440	Physical Measurements	3	Fall
BIOL 3626	Cell Biology Lab	4	Fall	CHEM 3530	Inorganic Chemistry Lab	3	Fall
				CHEM 4270	Advanced Inorganic Chem	3	Fall

		# S.H.	Semester offered			# S.H.	Semester offered
CHEM 4372	Advanced Organic Chem	3	Fall	Microbiology and Immunology			
CHEM 4450	Synthesis and Measurement	3	Spr	MICR 2157	General Microbiology	3	Fall, Spr
CHEM 5328	Mechanisms of Org Reactions	3	Fall	MICR 2158	General Microbiology Lab	2	Fall, Spr
Environmental Sciences				MICR 3147	Immunology and Human Disease	3	Fall
ENVS 2673	Ecology	3	Spr	MICR 3159	Bacteria and Human Disease	3	Spr
Health and Human Physiology				MICR 3164	Microbiology & Human Health	4	Spr
HHP 1100	Human Anatomy	3	Fall, Spr, Su	MICR 3168	Viruses and Human Disease	3	Fall
HHP 1110	Human Anatomy Lab	1	Fall, Spr, Su	MICR 3170	Microbial Genetics	2	Fall
HHP 1310	Human Physiology Lab	1	Fall, Spr, Su	MICR 3182	Applied Computational Biology	2	Fall
HHP 2400	Fundamentals of Human Physiology	3	Fall, Spr, Su	Neuroscience and Pharmacology			
HHP 3105	Anatomy for Human Physiology	3	Su	PCOL 3101	Pharmacology I: A Drug's Fantastic Journey	3	Fall
HHP 3110	Advanced Anatomy Lab	2	Fall	PCOL 3102	Pharmacology II: Mechanisms of Drug Action	3	Spr
HHP 3115	Anatomy for Human Physiology with Lab	5	Fall, Spr	PCOL 4130	Drug Mechanisms and Actions	3	Spr
HHP 3450	Immunology in Health & Disease	3	Fall	Physics and Astronomy			
HHP 3550	Human Physiology with Lab	5	Fall, Spr	PHYS 3850	Electronics	4	Spr
Mathematics, Statistics and Computer Science				Psychological and Brain Sciences			
MATH 2700	Introduction to Linear Algebra	4	Fall, Spr	PSY 2130	Advanced Psychology for Pre-Med Track	3	Spr
MATH 2850	Calculus III	4	Fall, Spr	PSY 2301	Introduction to Clinical Psychology	3	Fall, Spr, Su
MATH 3600	Intro to Ordinary Differential Equations	2-3	Fall, Spr	PSY 2401	Introduction to Developmental Science	3	Fall, Spr, Su
MATH 4060	Discrete Mathematical Models	3	Spr	PSY 2501	Introduction to Social Psychology	3	Fall, Spring
STAT 3120	Probability and Statistics	4	Fall	PSY 2601	Introduction to Cognitive Psychology	3	Fall, Spr, Su
STAT 3510	Biostatistics	3	Fall, Spr	PSY 2701	Introduction to Behavioral Neuroscience	4	Fall, Spr
STAT 4143	Introduction to Statistical Methods	3	Fall, Spr				

Courses in **Bold** can be used to satisfy either Advanced Science Electives (BA or BS) or the 6 s.h. research/advanced lab requirement for the BS degree.

The above course information is current as of 12/2025. Please consult MyUI and the UI general catalog for course availability, delivery method, and when offered when selecting electives.