Biochemistry: Integrated Program (BSBioch/MA)

Integrated Degree Program (BSBioch/MA)

The graduate program in Biochemistry offers an integrated program to enable currently enrolled, highly motivated undergraduate students with strong intellectual capacities to earn a Bachelor of Science in Biochemistry and a Master of Arts with a major in Biochemistry within a six-year period. The program requires 150 total credit hours: 120 for the BSBioch and 30 for the MA. The integrated program is designed to prepare students for competitive post-graduate programs and provide strong leadership skills and technical depth to students entering professional positions in the life sciences, medicine or the biotechnology industry.

The integrated program is a 4+2 program of undergraduate and graduate coursework that allows the student to earn the BS and the Master of Arts (MA) degrees. The curriculum, which usually begins in the student's junior year, prepares undergraduate students to enter into the biotechnology workforce (pharmaceuticals, advanced personalized treatments, diagnostics, medical devices, etc.) or into advanced degree programs (MD/PhD, MD, PhD, etc.) for impactful careers in the life sciences.

Because BS/MA graduates are expected to become leaders, highly motivated students with the personal qualities and intellectual capacity to establish successful careers in life science industry or academia are encouraged to apply.

Admission to the integrated Bachelor of Science (BS) and Master of Arts in Biochemistry is open only to undergraduate students within The University of Texas at Austin. It results in the awarding of a Bachelor of Science in Biochemistry followed by the Master of Arts in Biochemistry (BS/MA). The integrated program requires completion of a total of 150 credits: 120 hours for the undergraduate degree program and 30 hours of graduate coursework. Students can complete the integrated program in six academic years of full-time study.

Total Hours Required: 150

Plan of Study

The Plan of Study is a suggested four-year course sequence to support academic planning and serves as a helpful guide. Currently enrolled students should meet with their academic advisor to tailor their course selections and timelines to their individual goals and circumstances.

Course	Title	Hours
Year 1		
Semester 1		
M 408C	Differential and Integral Calculus	4
CH 301	Principles of Chemistry I	3
BIO 311C	Introductory Biology I	3
Visual and Performing Arts (050)		3
First-Year Signature Course (090)		3
	Hours	**16**
Semester 2		
M 408D	Sequences, Series, and Multivariable Calculus	4
CH 302	Principles of Chemistry II	3
BIO 311D	Introductory Biology II	3
CH 204	Introduction to Chemical Practice	2
RHE 306	Rhetoric and Writing	3
	Hours	**15**
Year 2		
Semester 1		
BIO 325	Genetics	3
CH 320M	Organic Chemistry I	3
SDS 320E	Elements of Statistics	3
U.S. History (060)		3
American and Texas Government (070)		3
	Hours	**15**
Semester 2		
BCH 339F	Foundations of Biochemistry	3
BCH 219L	Introduction to Biochemical Laboratory Practices and Skills	2
C S 303E	Elements of Computers and Programming	3
U.S. History (060)		3
American and Texas Government (070)		3
	Hours	**14**
Year 3		
Semester 1		
PHY 317K	General Physics I	3
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	1
MBS 344	Molecular Biology	3
BCH 370	Physical Methods of Biochemistry	3
Humanities (040)		3
Upper-division BCH, BIO, CH, C S, NEU, or SDS course		3
	Hours	**16**
Semester 2		
PHY 317L	General Physics II	3
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	1
BCH 339J	Chemical and Synthetic Biology	3
BCH 339N	Systems Biology and Bioinformatics	3
Social and Behavioral Sciences (080)		3
Upper-division BCH, BIO, CH, C S, NEU, or SDS course		3
	Hours	**16**
Year 4		
Semester 1		
BCH 339M	Structure and Function of Molecular Machines	3
CH 455	Fundamentals of Analytical Chemistry	4
Upper-division BCH, BIO, CH, C S, NEU, or SDS course		3
Upper-division BCH, BIO, CH, C S, NEU, or SDS course		3
Free Elective		2
	Hours	**15**
Semester 2		
BCH 368W	Supervised Literature Review	3
CH 353M	Physical Chemistry I for Life Sciences	3
BCH 175C	Biochemistry Capstone Seminar	1
Upper-division BCH, BIO, CH, C S, NEU, or SDS course		3
Upper-division BCH, BIO, CH, C S, NEU, or SDS course		3
	Hours	**13**
Year 5		
Semester 1		
Graduate Coursework		15
	Hours	**15**
Semester 2		
Graduate Coursework		15
	Hours	**15**
	Total Hours	**150**

Requirements

All requirements are listed below, starting with the most specialized moving to the most general. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy General Education requirements, including Core Curriculum.

Code	Title	Hours
Undergraduate		
Major		
Hours chosen from a single sequence below:		8
Sequence 1		
M 408C	Differential and Integral Calculus	
M 408D	Sequences, Series, and Multivariable Calculus	
Sequence 2		
M 408N	Differential Calculus for Science	
M 408S	Integral Calculus for Science	
M X08M	Multivariable Calculus	
SDS 320E	Elements of Statistics	3
Hours chosen from a single sequence below:		8
Sequence 1		
PHY 317K	General Physics I (recommended)	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
PHY 317L	General Physics II	
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	
Sequence 2		
PHY 303K	Engineering Physics I	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
PHY 303L	Engineering Physics II	
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	
Sequence 3		
PHY 301	Mechanics	
PHY 101L	Laboratory for Physics 301	
PHY 316	Electricity and Magnetism	
PHY 116L	Laboratory for Physics 316	
CH 301	Principles of Chemistry I	3
or CH 301C	Foundations of Chemistry I	
CH 302	Principles of Chemistry II	3
or CH 302C	Foundations of Chemistry II	
Hours chosen from:		2
CH X04M & CH X04N	Introduction to Chemical Practice I and Introduction to Chemical Practice II	
CH 204	Introduction to Chemical Practice	
CH 317	Descriptive Inorganic Chemistry	
CH 320M	Organic Chemistry I	3
BCH 219L	Introduction to Biochemical Laboratory Practices and Skills	2
BCH 339F	Foundations of Biochemistry	3
BCH 339J	Chemical and Synthetic Biology	3
BCH 339M	Structure and Function of Molecular Machines	3
BCH 339N	Systems Biology and Bioinformatics	3
BCH 370	Physical Methods of Biochemistry	3
CH 353	Physical Chemistry I	3
or CH 353M	Physical Chemistry I for Life Sciences	
CH 455	Fundamentals of Analytical Chemistry	4
Select one of the following sequences:		6
BIO X11C & BIO X11D & BIO X25	Introductory Biology I and Introductory Biology II and Genetics	
BIO X15H & BIO X25H	Advanced Introduction to Genetics: Honors and Genetics: Honors	
MBS 344	Molecular Biology	3
3 hours of a capstone experience chosen from the following:		3
BCH 368W	Supervised Literature Review	
BCH 368R	Supervised Capstone Research	
A second semester of BCH 379H		
A course/experience approved by the Capstone Advisor		
BCH 175C	Biochemistry Capstone Seminar	1
Hours chosen from:		15
15 additional semester hours of upper-division biochemistry, biology, chemistry, computer science, neuroscience, or statistics and data science		
A transcript-recognized certificate or a transcript-recognized minor		
Subtotal		*82*
Free electives: Additional coursework to reach total hours required.		8
Subtotal		*8*
General Education		
Remaining Core Curriculum (42 hours total)		30
Foreign Language other than English, Beginning Proficiency		
Subtotal		*30*
College Requirements - Natural Sciences		
General University Requirements		
Graduate		
Graduate Coursework		30
Subtotal		*30*
Total Hours		**150**