

# Biochemistry and Molecular Biology

## Bachelor of Science (BS.BMB)

Core Requirements				Credits	Notes/Instructions			
College Sem.		Quest for Meaning	CSEM 100	3	†A student may be required to take ENGL 105 and/or MATH 100 based on placement exams administered prior to their first semester at King's College. ENGL 105 and MATH 100 are 3-credit courses and will count as free electives. †† The Intercultural Competence requirement can be satisfied by taking a 100-level language class for 3 credits or participating in an approved Study Abroad experience. (See college catalog for more information) <b>SBM</b> = Satisfied By Major requirement(s) and credit(s) listed			
Communication & Creative Expression		Writing	ENGL 110†	3				
		Oral Communication	COMM 101	3				
		Literature	ENGL 140-149	3				
		The Arts	ARTS 100-149	3				
Citizenship		History	HIST 100-149	3				
		Intercultural	FREN/GERM/SPAN 100-level or Study Abroad††	3				
		Global Connections	ECON 150-199; GEOG 150-199; HIST 150-199; PS 150-199; SOC 150-199	3				
Quantitative & Scientific Reasoning	SBM	Quantitative Reasoning	MATH 120+ or higher level	-				
	SBM	Scientific Endeavor	NSCI 100	-				
	SBM	Science in Context	NSCI 171-199	-				
		Human Beh. & Soc. Inst	ECON 111, 112; GEOG 101, 102; PS 101, PSYC 101, SOC 101	3				
Wisdom, Faith, & the Good Life		Introduction to Phil.	PHIL 101	3				
		Phil. Investigations	PHIL 170-199	3				
		Theology & Wisdom	THEO 150-159	3				
		Theology & the Good Life	THEO 160-169	3				
Total Core Credits				39				
Major Requirements		Credits	Major Requirements		Credits	Electives <sup>3</sup> / Other Requirements	Credits	
	BMB 110L	1		CHEM 113 <sup>2</sup>	3		HCE 101 Holy Cross Exp.	1
	BIOL 113 <sup>2</sup>	3		CHEM 113L	1		Free Elective <sup>3</sup>	3
	BIOL 113L	1		CHEM 114 <sup>PR</sup>	3		Free Elective <sup>3</sup>	3
	BIOL 213 <sup>PR</sup>	3		CHEM 114L <sup>PR</sup>	1		Free Elective <sup>3</sup>	1
	BIOL 213L	1		CHEM 241 <sup>PR</sup>	3			
	BIOL 353/CHEM 353 <sup>PR,4</sup>	3		CHEM 241L <sup>PR</sup>	1			
	BMB 353L <sup>PR,4</sup>	2		CHEM 242 <sup>PR</sup>	3			
	BIOL 450	3		CHEM 242L <sup>PR</sup>	1			
	BIOL 450L	1		CHEM 243 <sup>PR</sup>	3			
	BMB Elective*	3		CHEM 243L <sup>PR</sup>	2			
	BMB Elective*	3		CHEM 244 <sup>PR</sup>	3			
	BMB Elective*	3		CHEM 244L <sup>PR</sup>	2			
	BMB 455 <sup>6</sup>	1		CHEM351	1			
	BMB 456 <sup>6</sup>	1		MATH 129 <sup>2</sup>	4			
	BMB Associated Lab	1		MATH 130 <sup>PR</sup>	4			
				PHYS 113 <sup>CR</sup>	3			
				PHYS 113L	1			
				PHYS 114 <sup>PR</sup>	3			
				PHYS 114L <sup>PR</sup>	1			
Total Major Credits		30	Total Major Credits		43	Total Elective / Other Credits		8

### Total Credits Required for Graduation = 120

\*In addition to the Major Sequence requirements, a BMB Major must also complete a minimum of three (3) upper-level courses from the following list. One of these upper-level courses must be research intensive (consult with Biochemistry advisor). Upper level CHEM or BIOL courses not on this list may be substituted at the discretion of the Biochemistry advisor. A BMB Major wishing to be eligible for certification by the American Chemical Society (ACS) must complete BIOL336, BIOL336L, CHEM357, CHEM357L, and CHEM471.

BMB Electives* (Biochemistry Electives) - must choose 3:			
BIOL 314	Microbiology	BIOL 490/491	Senior Research
BIOL 326	Immunology	CHEM 357	Physical Chemistry I
BIOL 330	Introduction to Bioinformatics	CHEM 471	Advanced Inorganic Chemistry
BIOL 336	Cell Biology	CHEM 473	Organic Chemistry of Drug Design and Discovery
BIOL 456	Molecular Mech Brain Disorder	CHEM 475	Advanced Analytical Chemistry
CHEM 425	Science of Fermentation	CHEM 496/497	Senior Research
CHEM 474	Biogeochemistry		

#### General Information:

A student must earn a minimum of 120 credit hours to be awarded the baccalaureate degree. The number of credit hours required for graduation may be higher in certain major programs or if the student elects to pursue a second major. Beyond the requirements of the Core Curriculum and of a student's chosen major program, the balances of the credit hours required for graduation are "free electives."

See reverse side for a suggested sequence

Effective 07/01/2025

# Biochemistry and Molecular Biology

## Suggested Sequence

A suggested course sequence of degree requirements is listed below. Refer to the college catalog for course titles, descriptions, and prerequisites. Always consult your Academic Advisor when planning and scheduling your classes.

Fall	Credits	Spring	Credits
BIOL 113 <sup>2</sup> Evolution & Diversity	3	BMB 110L Intro to Biochemical Techniques	1
BIOL 113L Evolution & Diversity Lab	1	CHEM 114 <sup>PR</sup> General Chemistry II	3
CHEM 113 <sup>2</sup> General Chemistry I	3	CHEM 114L General Chemistry II Lab	1
CHEM 113L General Chemistry I Lab	1	MATH 130 <sup>2</sup> Analytic Geometry & Calculus II	4
MATH 129 <sup>2</sup> Analytic Geometry & Calculus I	4	Core Course <sup>1</sup>	3
Core Course <sup>1</sup>	3	Core Course <sup>1</sup>	3
HCE 101 Holy Cross Experience	1		
<b>16</b>		<b>15</b>	
Summer	Credits		
Fall	Credits	Spring	Credits
CHEM 241 <sup>PR</sup> Organic Chemistry I	3	CHEM 242 <sup>PR</sup> Organic Chemistry II	3
CHEM 241L <sup>PR</sup> Organic Chemistry I Lab	1	CHEM 242L <sup>PR</sup> Organic Chemistry II Lab	1
CHEM 243 <sup>PR</sup> Analytical Chemistry	3	CHEM 244 <sup>PR</sup> Instrumental Analysis	3
CHEM 243L <sup>PR</sup> Analytical Chemistry Lab	2	CHEM 244L <sup>PR</sup> Instrumental Analysis Lab	2
BIOL 213 <sup>PR</sup> Cell & Molecular Biology	3	Core Course <sup>1</sup>	3
BIOL 213L Cell & Molecular Biology Lab	1	Core Course <sup>1</sup>	3
Core Course <sup>1</sup>	3		
<b>16</b>		<b>15</b>	
Summer	Credits		
Fall	Credits	Spring	Credits
PHYS 113 <sup>CR</sup> Physics for Scientists and Engineers I	3	PHYS 114 <sup>PR</sup> Physics for Scientists & Engineers II	3
PHYS 113L Physics for Scientists and Engineers I Lab	1	PHYS 114L <sup>PR</sup> Physics for Scientists & Engineers II Lab	1
BIOL 450 Molecular Genetics	3	BIOL 353/CHEM 353 <sup>PR</sup> Biochemistry	3
BIOL 450L Molecular Genetics Lab	1	BMB 353L Advance Biochemical Techniques	2
CHEM 351 <sup>PR</sup> Technological Competency	1	Core Course <sup>1</sup>	3
Core Course <sup>1</sup>	3	Core Course <sup>1</sup>	3
Core Course <sup>1</sup>	3		
<b>15</b>		<b>15</b>	
Summer	Credits		
Fall	Credits	Spring	Credits
BMB 455 <sup>4</sup> Senior Colloquium	1	BMB 456 Senior Colloquium	1
BMB Elective*	3	BMB Elective*	3
BMB Elective*	3	Core Course <sup>1</sup>	3
BMB Elective Associated Lab*	1	Free Elective <sup>3</sup>	3
Core Course <sup>1</sup>	3	Free Elective <sup>3</sup>	3
Core Course <sup>1</sup>	3	Free Elective <sup>3</sup>	1
<b>14</b>		<b>14</b>	
Total Credits Required for Graduation = 120			

### NOTES:

\*\*The standard semester course load is five courses consisting of 15 – 17 credits. A student may take 18 credits if the science lab puts them over 17 credits (*for more information about credit loads, please see the college catalog*).

<sup>1</sup>Choose one course from each of the Core Requirements listed on the reverse side.

<sup>2</sup>Course may satisfy both a Major and a Core requirement. BIOL 113 and CHEM 113 satisfy the Scientific Endeavor and Science in Context Core requirement. MATH 129 will satisfy the Quantitative Reasoning Core requirement.

<sup>3</sup>Students may select "free electives" for personal enrichment **OR** for Minor and/or Second Major Requirements.

<sup>4</sup>Senior Integrated Assessment (Fall and Spring Semester of Senior Year)

<sup>PR</sup> Course has a prerequisite – check college catalog.

<sup>CR</sup> Course has a corequisite – check college catalog.