

# 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. SBM = Satisfied By Major requirement(s) and credit(s) listed below.
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; MSB 287		3	
	Theology & Wisdom	THEO 150-159		3	
	Theology & the Good Life	THEO 160-169		3	
<b>Total Core Credits</b>				<b>39</b>	

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>	3
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 370 <sup>5</sup>	2	CHEM 242L <sup>PR</sup>	1		
BMB Elective*	3	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	MATH 129 <sup>2</sup>	4		
BMB 456 <sup>6</sup>	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		
<b>Total Major Credits</b>		<b>30</b>	<b>Total Major Credits</b>		<b>42</b>
				<b>Total Elective / Other Credits</b>	
				<b>10</b>	

### Total Credits Required for Graduation = 121

\*In addition to the Major Sequence requirements, a BMB Major must also complete a minimum of four (4) 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.

BMB Electives* (Biochemistry Electives) - must choose 4:			
BIOL 314	Microbiology	BIOL 456	Molecular Neuroscience
BIOL 323	Genetics	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 475	Advanced Analytical Chemistry
BIOL 450	Molecular Genetics	CHEM 496/497	Senior Research

#### 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."

# 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 2019		Credits	Spring 2020		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 2020		Credits			
Fall 2020		Credits	Spring 2021		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 2021		Credits			
Fall 2021		Credits	Spring 2022		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 353/CHEM 353 <sup>PR,4</sup> Biochemistry		3	BMB Elective*		3
BMB 353L Advance Biochemical Techniques		2	Core Course <sup>1</sup>		3
BIOL 370 <sup>3</sup> Junior Seminar		2	Core Course <sup>1</sup>		3
Core Course <sup>1</sup>		3	Free Elective <sup>3</sup>		3
Core Course <sup>1</sup>		3			
		<b>17</b>			<b>16</b>
Summer 2022		Credits			
Fall 2022		Credits	Spring 2023		Credits
BMB 455 <sup>6</sup> Senior Colloquium		1	BMB 456 Senior Colloquium		1
BMB Elective*		3	BMB Elective*		3
BMB Elective*		3	Core Course <sup>1</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>		3
		<b>13**</b>			<b>13**</b>
<b>Total Credits Required for Graduation = 121</b>					

### 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>Taking BIOL353/CHEM 353 in the Fall of junior year is encouraged, but it can be taken in the Spring if offered, with a BMB elective and CORE in the Fall semester junior year instead

<sup>5</sup>Sophomore/Junior Diagnostic Project (Fall or Spring Semester of Junior Year)

Junior Seminar – Fall or Spring Semester of Junior Year

<sup>6</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.