

BIOCHEMISTRY/MOLECULAR BIOLOGY

Have you ever wondered how a scientist discovers drug treatments for cancer? Or perhaps you question why some antibiotics work better than others for certain infections. Have you ever thought about how chemistry can be used by living things? Do you enjoy biology and chemistry and can't decide between the two? Perhaps you are curious about genetics, disease, pharmaceuticals, medicine and how the human body works down to a single molecule in a human cell. The answers to these questions- and many more- can be found in biochemistry and molecular biology.

Biochemistry and molecular biology is an interdisciplinary field of study that combines the knowledge of chemistry with application to living systems. If you enjoy asking questions about how living systems work on a molecular level, or if you are interested in applying chemistry knowledge to solving problems in living systems, then you should consider a biochemistry and molecular biology (BMB) major.

Biochemistry and Molecular Biology (BMB) at King's

The BMB major combines and integrates concepts in biology and chemistry, with the course requirements taught between the two departments- the Department of Biology and the Department of Chemistry & Physics. This provides students with the opportunity to work with experienced faculty in both disciplines in a collaborative environment. At King's, the low faculty-to-student ratio in these departments will ensure that you get the individual attention



that you need to master the course material and to prepare for life after graduation.

All students at King's take 52 credits in the Core Curriculum, developing a sophisticated base of knowledge in the liberal arts and sciences, and developing the transferable skills of liberal learning: critical thinking, effective oral and written communication, information literacy, moral reasoning, quantitative reasoning, and technological competency. The knowledge, skills and dispositions students acquire by virtue of the hallmark Core Curriculum at King's will enhance their ability to be successful contributors within their chosen career field.

In addition to their interdisciplinary coursework, BMB students are required to take at least one research-intensive course where they will work on their own original research along with a biology and/or chemistry faculty mentor. The undergraduate research experience provides a distinct advantage when entering the workforce or graduate school.

Job Opportunities

The BMB major is designed to provide a cross-discipline experience to prepare well-rounded scientists who are competitive for professions in health, industry, academia and government. A BMB degree can land you in a variety of places. BMB majors go on to work in:

- Graduate programs in biology, chemistry, biochemistry or related fields to earn a Master's or Ph. D.
- Pharmaceutical industry
- Secondary and higher education
- Government employment at national research labs, doing cancer research for example
- Health-related fields

As with the biology and chemistry majors at King's college, the course requirements can also be used toward preparation for prehealth professions and medical school exams (MCATs). The integrative nature of the BMB program, with the hands-on experience provided in the laboratory courses and research requirement, provide excellent preparation for a variety of professions in addition to this list.

To learn more about majoring in Biochemistry/Molecular Biology at King's College, please contact the Office of Admission at 1-888-KINGS PA or admissions@kings.edu.

Biochemistry/Molecular Biology (121 Credit Hours)

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.

1 st Year - Fall		1 st Year - Spring	
	cr.		cr.
BIOL 113 Evolution & Diversity	3	BMB 110L Intro to Biochemical Techniques	1
BIOL 113L Evolution & Diversity Lab	1	CHEM 114 General Chemistry II	3
CHEM 113 General Chemistry I	3	CHEM 114L General Chemistry II Lab	1
CHEM 113L General Chemistry I Lab	1	MATH 130 Analytic Geometry & Calculus II	4
MATH 129 Analytic Geometry & Calculus I	4	Core Course	3
Core Course	3	Core Course	3
HCE 101 Holy Cross Experience	1		
	16		15
2 nd Year – Fall		2 nd Year – Spring	
CHEM 241 Organic Chemistry I	3	CHEM 242 Organic Chemistry II	3
CHEM 241L Organic Chemistry I Lab	1	CHEM 242L Organic Chemistry II Lab	1
CHEM 243 Analytical Chemistry	3	CHEM 244 Instrumental Analysis	3
CHEM 243L Analytical Chemistry Lab	2	CHEM 244L Instrumental Analysis Lab	2
BIOL 213 Cell & Molecular Biology	3	Core Course	3
BIOL 213L Cell & Molecular Biology Lab	1	Core Course	3
Core Course	3		
	16		15
3 rd Year – Fall		3 rd Year – Spring	
PHYS 113 Physics for Scientists and Engineers I	3	PHYS 114 Physics for Scientists & Engineers II	3
PHYS 113L Physics for Scientists and Engineers I Lab	1	PHYS 114L Physics for Scientists & Engineers II Lab	1
BIOL 353/CHEM 353 Biochemistry	3	BMB Elective	3
BMB 353L Advance Biochemical Techniques	2	Core Course	3
BIOL 370 Junior Seminar	2	Core Course	3
Core Course	3	Free Elective	3
Core Course	3		
	17		16
4 th Year – Fall		4 th Year – Spring	
BMB 455 Senior Colloquium	1	BMB 456 Senior Colloquium	1
BMB Elective	3	BMB Elective	3
BMB Elective	3	Core Course	3
Core Course	3	Free Elective	3
Core Course	3	Free Elective	3
	13		13
Total Credits Required for Graduation = 121			