Four-year Graduation Plan

Bachelor of Arts (BA)

The following schedule is a suggested plan of study for the BA degree in Biochemistry and Molecular Biology. It lists the science courses required for the degree following the degree requirements on page 5 of the undergraduate handbook. This list does not include the courses needed to meet the General Education requirements. Some of these courses are also offered during the summer session. There are multiple options to graduate in four years; classes should be chosen in consultation with their Biochemistry and Molecular Biology advisor.

First Year

Fall Semester			***Spring Semester***		
CHEM 1110	Principles of Chemistry I	4 s.h.	CHEM 1120	Principles of Chemistry II	4 s.h.
MATH 1850	Calculus I	4 s.h.	MATH 1860	Calculus II	4 s.h.

Students may begin research in biochemistry at any time; please consult your advisor.

Second Year

Fall Semester			***Spring Semester***		
BIOL 1411	Foundations of Biology	4 s.h.	BIOL 1412	Diversity of Form and Function	4 s.h.
CHEM 2230	Organic Chemistry I for Majors[4]	3 s.h.	CHEM 2240	Organic Chemistry II for Majors[4]	3 s.h.
PHYS 1611	Introductory Physics I[4]	4 s.h.	CHEM 2420	Organic Chemistry Lab for Majors[4]	3 s.h.

Third Year

Fall Semester			***Spring Semester***		
BMB 3120	Biochem & Molecular Biology I	3 s.h.	BMB 3130	Biochemistry & Molecular Biology II	3 s.h.
PHYS 1612	Introductory Physics II (with lab)[3]	4 s.h.	BMB 3140	Experimental Biochemistry	2 s.h.
			BMB 3150	*Development of Senior Research Project*[4]	*2 s.h.*
	Science Elective[1]	tbd	*BMB 3993*	*Undergraduate Biochemistry Research*	*tbd*

Summer Session

BMB 4999	Advanced Undergraduate Biochemistry Research[3]	2-3s.h.

Fourth Year

Fall Semester			***Spring Semester***		
BMB 4240	Biophysics and Advanced Biochemistry	3 s.h.	*BMB 4999*	*Advanced Undergraduate Biochemistry Researc*[2]	*2-3 s.h.*
BMB 4999	*Advanced Undergraduate Biochemistry Research*[2]	*2-3 s.h.*		Science Elective[1]	tbd
	Science Elective[1]	tbd			

Courses listed in *italics* are optional but may be required in certain cases (e.g. for Honors in Biochemistry and Molecular Biology).

[1] Six s.h. of Advanced Science Electives are required for the BA degree. Science electives may be taken at any time; some of the courses may have prerequisites.

[2] Students in the BA Program who wish to graduate with honors must also take a total of 6 s.h. of BMB 4999. The number of semester hours of research, in any given semester, will depend upon arrangements between student and research advisor. Prerequisites are Biochemistry & Molecular Biology I **and** II (BMB 3120 and BMB 3130), Experimental Biochemistry (BMB 3140), **and** Development of Senior Research Project (BMB 3150) with a B- or better in each course. They should also have prior research experience or Honors Research Practicum or consent of the instructor.

[3] Students in the BA program can take either the organic sequence for majors (CHEM:2230, 2240, 2420-recommended) **or** organic chemistry (CHEM:2210,2220,2410). They can also take either two semesters of Introductory Physics (PHYS:1611,1612 with lab-recommended) **or** College Physics (PHYS:1511,1512). Most students take Physics during either their second or third year or take one semester each year.

[4] Prerequisite for BMB 4999.

Four-year Graduation Plan

Bachelor of Science (BS)

The following schedule is a suggested plan of study for the BS degree in Biochemistry and Molecular Biology. It lists the science courses required for the degree following the degree requirements on page 5 of the undergraduate handbook. This list does not include the courses needed to meet the General Education requirements. Some of these courses are also offered during the summer session. There are multiple options to graduate in four years; classes should be chosen in consultation with the Biochemistry and Molecular Biology advisor.

First Year

	Fall Semester			***Spring Semester***	
CHEM 1110	Principles of Chemistry I	4 s.h.	CHEM 1120	Principles of Chemistry II	4 s.h.
MATH 1850	Calculus I[1]	4 s.h.	MATH 1860	Calculus II[1]	4 s.h.

Students may begin research in Biochemistry and Molecular Biology at any time; please consult your advisor.

Second Year

	Fall Semester			***Spring Semester***	
BIOL 1411	Foundations of Biology	4 s.h.	BIOL 1412	Diversity of Form and Function	4 s.h.
CHEM 2230	Organic Chemistry I for Majors[6]	3 s.h.	CHEM 2240	Organic Chemistry II for Majors[6]	3 s.h.
PHYS 1611	Introductory Physics I[6]	4 s.h.	CHEM 2420	Organic Chemistry Lab for Majors[6]	3 s.h.

Third Year

	Fall Semester			***Spring Semester***	
BMB 3120	Biochem & Molecular Biology I	3 s.h.	BMB 3130	Biochemistry & Molecular Biology II	3 s.h.
PHYS 1612	Introductory Physics II (with lab)[6]	4 s.h.	BMB 3140	Experimental Biochemistry	2 s.h.
	Science Elective[2]	tbd	BMB 3150	Development of Senior Research Project[5]	2 s.h.
BMB 3993	Undergraduate Biochemistry Research	tbd	BMB 3993	Undergraduate Biochemistry Research	tbd

Summer Session

BMB 4999	Advanced Undergraduate Biochemistry Research[4]	2-3 s.h.

Fourth Year

	Fall Semester			***Spring Semester***	
CHEM 4430	Principles of Physical Chemistry[3]	3 s.h.	BMB 4240	Biophysics and Advanced Biochemistry[3]	3 s.h.
BMB 4999	Advanced Undergraduate Biochemistry Research[4]	2-3 s.h.	BMB 4999	Advanced Undergraduate Biochemistry Research[4]	2-3 s.h.
	Science Elective[2]	tbd		Science Elective[2]	tbd

[1]While Calcululs I (MATH:1850) is preferred, students may also take Engineering Math I (MATH:1550) or Calculus for Biological Sciences (MATH:1460). While Calcululs II (MATH:1860) is preferred, students may also take Biostatistics (STAT:3510) or Engineering Math II (MATH:1560), or Introduction to Biostatistics (BIOS:4120).

[2]Nine s.h. of Advanced Science Electives and six s.h. of Advanced Research or Laboratory courses are required for the BS degree. Students usually take BMB 4999 to fulfill the Advanced Laboratory requirement; however, any advanced lab course will satisfy the requirement. Science electives may be taken at any time during the curriculum.

[3] Students in BS program are required to take BMB:4240 and <u>one</u> of the following courses: CHEM 4430, CHEM 4431, or CHEM 4432.

[4] A total of 6 s.h. of BMB 4999 are required for honors. The number of semester hours of research, in any given semester, will depend upon arrangements between student and research advisor. Prerequisites are Biochemistry & Molecular Biology I **and** II (BMB 3120 and BMB 3130), Experimental Biochemistry (BMB 3140), **and** Development of Senior Research Project (BMB 3150) with a B- or better in each course. They should also have prior research experience or Honors Research Practicum or consent of the instructor. This requirement can also be satisfied by advanced lab courses.

[5] Prerequisite for BMB 4999.

[6]Students in the BS program can take either the organic sequence for majors (CHEM:2230, 2240, 2420-recommended) **or** organic chemistry (CHEM:2210,2220,2410). They can also take either two semesters of Introductory Physics (PHYS:1611,1612 with lab-recommended) **or** College Physics (PHYS:1511,1512). Most students take Physics during either their second or third year or take one semester each year.