

Bachelor of Science in Biology: Biological Chemistry and Molecular Biology Concentration

Introductory Biology and Chemistry Courses [16 credit hours]

- BIOL 104 Principles of Biology I (4)
- BIOL 106 Principles of Biology II (4)
- CHEM 163 General Chemistry I (3)
- CHEM 165 General Chemistry I Lab (1)
- CHEM 164 General Chemistry II (3)
- CHEM 166 General Chemistry II Lab (1)

Participation in Departmental Mentoring and Assessment:

- Participation in BIOL 195 and BIOL 295, and meeting with your mentor when in residence is expected.
- Students who are not able to take 195 and 295 (i.e. transfer students) may take BIOL 395 to fulfill this requirement.
- All students are also expected to participate in senior exit surveys.

Other science courses (completion of **four** of the following six options) [16 credit hours]

- CHEM 342 and 344 Principles of Organic Chemistry I with lab (3/1)
- CHEM 343 and 345 Principles of Organic Chemistry II with lab (3/1)
- PHYS 131 and 132 Physics I with lab (3/1)
- PHYS 133 and 134 Physics II with lab (3/1)
- EAS 101 and 102 Earth Systems I with lab (3/1)
- EAS 103 and 104 Earth's Dynamic Environment II with lab (3/1)

Mathematics Courses [7 credit hours]

- MATH 142 Calculus I (4)
- MATH 130 Elementary Statistics with Computers [3] or BIOL 479 Biometry [4]

Upper Division Biology Requirements [35 credit hours]

- BIOL 301 Evolutionary Biology (3)
- BIOL 302 Molecular Cellular Biology I (Biochemistry & Molecular Biology) (3)
- BIOL 303 Principles of Genetics (3)
- BIOL 304 Molecular Cell Biology II (Cell Structure & Function) (3)

- Two courses selected from the following list: Advanced Biochemistry (BIOL 407), Molecular Biology (BIOL 470), or Genomics (temporarily BIOL 493, will be changed to BIOL 403)

- Two labs, selected from the following list: Cell Biology Lab (BIOL 306), Experiments in Genetics (BIOL 310), Molecular Techniques Lab (BIOL 405), Microbial Ecology (BIOL 416), or Microbiology Lab (BIOL 465)

- One elective course with a lab in the area of Ecology, Evolution, and Organismal Biology (EEOB)

- One Plant Course, which may also be counted as a CMDB or EEOB elective, depending on the course

- Senior Inquiry [BIOL 480, 481, 482, 489, 497, or 498, or a graduate-level (500-level or above) biology course] *Note: The Integrated Bioinformatics Internship (BIOL 481) is recommended.

- BIOL elective courses [minimum of 35 hours of 300/400 level BIOL coursework, including the required courses listed here]

Sample Four-Year Plan

B.S. in Biology: Biological Chemistry and Molecular Biology

Fall of First Year	Spring of First Year
BIOL 104 Principles of Biology I [4]	BIOL 106 Principles of Biology II [4]
CHEM 163/165 General Chem. I with lab [3/1]	BIOL 195 First-Year Mentoring
	CHEM 164/166 General Chem. II with lab [3/1]
	MATH 142 Calculus I
Fall of Sophomore Year	Spring of Sophomore Year
BIOL 295 Second-Year Mentoring	BIOL 304 MCB II (Cell Structure & Function) [3]
BIOL 302 MCB I (Biochem. & Mol. Biol.) [3]	CHEM 343/345 Organic Chemistry II with lab [3/1]
CHEM 342/344 Organic Chemistry I with lab [3/1]	
Statistics (MATH 130 or BIOL 479) [3-4]	
Fall of Junior Year	Spring of Junior Year
BIOL 303 Principles of Genetics [3]	BIOL 407 Advanced Biochemistry [3]
BIOL EEOB Elective with lab [4]	BIOL Elective [3] (see concentration requirements)
PHYS 131/132 Physics I with lab [3/1]	PHYS 133/134 Physics II with lab [3/1]
Fall of Senior Year	Spring of Senior Year
BIOL 470 Advanced Molecular Biology or BIOL 493 (will become 403) Genomics [3]	BIOL 301 Evolutionary Biology [3]
BIOL 405 Molecular Techniques Lab [2]	BIOL 481 Bioinformatics Internship [variable]
BIOL Elective [3]	BIOL Elective [3]
BIOL Lab Course [1-2] (see concentration requirements)	

BIOL electives must be at the 300-level or above. BIOL electives must include one CMDB elective, one EEOB elective, three laboratory courses (at least one from the CMDB group and at least one from the EEBO group), and a plant course.

For the Bachelor of Science, a total of up to 4 credit hours of Independent Research (BIOL 496), Library Project (BIOL 497), and Advanced Independent Research (BIOL 498) may be counted toward the 35 required upper-division credits. These courses do not count as structured lab courses.

Senior Inquiry options: Internship in Conservation (BIOL 480), Integrated Bioinformatics Internship (BIOL 481), Internship in Plant Science (BIOL 482), Comprehensive Examination (BIOL 489), Library Project (BIOL 497), Advanced Independent Research (BIOL 498), graduate-level biology course (500-level or above)