

CELL BIOLOGY, MOLECULAR BIOLOGY, AND MICROBIOLOGY CONCENTRATION, BIOLOGICAL SCIENCES (BS)

Course Requirements

Course	Title	Quarter Hours
BIO 210	MICROBIOLOGY	4
BIO 250	CELL BIOLOGY	4
BIO 360	MOLECULAR BIOLOGY	4
Four BIO electives from approved list: at least one must be a lab course and at least one must be a topics course		16
Lab courses		
BIO 220	BIOTECHNOLOGY ¹	
BIO 313	CELL CULTURE METHODS ²	
BIO 320	ADVANCED MICROBIOLOGY ²	
BIO 321	MOLECULAR METHODS IN ECOLOGY AND EVOLUTION ^{2,3}	
BIO 330	DEVELOPMENTAL BIOLOGY ²	
BIO 362	ADVANCED GENETIC ANALYSIS	
BIO 370	IMMUNOBIOLOGY	
CHE 340 & CHE 341	BIOCHEMISTRY I and EXPERIMENTAL BIOCHEMISTRY I ⁴	
Topics courses		
BIO 347	TOPICS IN MEDICAL BACTERIOLOGY	
BIO 349	TOPICS IN MICROBIOLOGY AND BIOTECHNOLOGY	
BIO 361	TOPICS IN MOLECULAR BIOLOGY	
BIO 381	TOPICS IN CANCER	
Additional elective courses		
BIO 290	TOPICS IN BIOLOGY ⁶	
BIO 299	INTRODUCTION TO RESEARCH ⁶	
BIO 339	CELLULAR NEUROBIOLOGY	
BIO 348	THE BIOLOGY OF INFECTION	
BIO 375	INTRODUCTION TO PHARMACOLOGY	
BIO 380	CANCER BIOLOGY	
BIO 385	MAMMALIAN REPRODUCTION ⁵	
BIO 386	ENDOCRINOLOGY ⁵	
BIO 390	ADVANCED TOPICS IN BIOLOGY ⁶	
BIO 399	INDEPENDENT STUDY - RESEARCH ⁶	
Two additional upper-level BIO courses		8

¹ BIO 220 is strongly recommended as this course demonstrates applications of the material learned in the required courses.

² BIO 313, BIO 320, BIO 321 and BIO 330 are CURE courses (course-based undergraduate research experiences). Enrollment in at least one CURE course is encouraged.

³ Students interested in taking BIO 321 as an approved elective should take either BIO 215 or BIO 235 as one of the two additional upper-level BIO electives.

⁴ Students interested in medical school should enroll in CHE 340/341 as an approved elective and CHE 234/235 (Organic Chemistry III) as an open elective.

⁵ Students interested in taking BIO 385 or BIO 386 as an approved elective should take either BIO 307 or BIO 308 as one of the two additional upper-level BIO electives.

⁶ Department permission is required to substitute this course for approved electives. Permission is dependent on the content covered in the course.

Biology courses other than the General Biology sequence that have any Scientific Inquiry Domain designation do not generate credit toward the major or minor.

Open Electives

Open elective credit also is required to meet the minimum graduation requirement of 192 hours.