

BIOLOGY MAJOR – BS TRACK: Biotechnology Concentration – 45 HOURS

This information is effective for the **Fall 2017-Summer 2022** catalogs

All course in Biology and supportive courses must be completed with a minimum grade of C or higher.

Note: In order to fulfill the 50% major residency requirement, at least 19 credit hours of biology major coursework must be completed at UNM. (Course numbers in parentheses denote former course numberings.)

1: Complete the four-course introductory sequence:

Introductory Courses	Course Name	Credit Hours	Pre/Co-Requisites
BIOL 2110C (201L)	Molecular & Cell Biology	4	Prerequisite: CHEM 1215/1215L (121 & 123L)
BIOL 2410C (202L)	Genetics	4	Prerequisites: CHEM 1215/1215L (121 & 123L) and BIOL 2110C (201L) <i>Pre or Co-requisite:</i> CHEM 1225/1225L (122 & 124L)
BIOL 303 & 303L	Ecology & Evolution	4 (3/1)	Prerequisites: CHEM 1225/1225L (122 & 124L) and BIOL 2410C (202L) <i>Pre or Co-requisite:</i> MATH 1430 (180) OR MATH 1512 (162)
BIOL 304 & 304L	Plant & Animal Form & Function	4 (3/1)	Prerequisites: CHEM 1225/1225L (122 & 124L) and BIOL 303 & 303L <i>Pre or Co-requisite:</i> MATH 1430 (180) OR MATH 1512 (162)

2: Complete the three-course Biotechnology sequence at CNM:

Introductory Courses	Course Name	Credit Hours	Pre/Co-Requisites
BIOL 2710 (BIOT 1020)	Biotechnology 1 (Fall)	4	Prerequisite: BIOL 2110C (201L) and CHEM 1215/1215L (121 & 123L) <i>Co-requisite:</i> BIOL 2410C and CHEM 1225/1225L (122 & 124L)
BIOL 2715 (BIOT 2110)	Biotechnology 2 (Spring)	4	Prerequisites: BIOL 2710 (BIOT 1020)
BIOL 2720 (BIOT 2210)	Biotechnology 3 (Summer)	4	Prerequisites: BIOL 2715 (BIOT 2210)

3: Complete ONE (1) of the following 300-level courses w/lab:

300-level Course w/lab	Course Name	Credit Hours	Prerequisites
BIOL 351 & 352L	General Microbiology	4 (3/1)	Prerequisites: BIOL 304 & 304L
BIOL 360L	General Botany	4	Prerequisites: BIOL 304 & 304L
BIOL 371L	Invertebrate Biology	4	Prerequisites: BIOL 304 & 304L
BIOL 386L	General Vertebrate Zoology	4	Prerequisites: BIOL 304 & 304L

4: Complete FOUR (4) 400-level courses from THREE (3) different categories/areas: (Prerequisites vary; check catalog. BIOL 400, BIOL 402, BIOL 499 cannot count toward this requirement.)

400-level Course	Course category/area	Course category/area
1)		Any
2)		<i>Must be different category/area than course #1 & #3</i>
3)		<i>Must be different category/area than course #1 & #2</i>
4)		Any

400-level course categories/areas listed on reverse

5: Complete additional biology major elective courses so that the total number of biology hours totals at least 37.

Courses	Credit hours

The following courses **cannot be applied toward biology elective hours** BIOL 1110 (110), BIOL 1110L (112L), BIOL 1140 (123), BIOL 1140L (124L) and BIOL 2305 (239L).

Up to 4 credit hours of BIOL 402 may be applied toward the biology elective hours.

Up to 4 credit hours of BIOL 400 may be applied toward the biology elective hours.

Up to 2 credit hours of BIOL 499 may be applied toward the biology elective hours.

BIOC 423 may be used toward the biology elective hours **ONLY** if it is not being used toward the chemistry minor.

Supportive Courses**MATH**

MATH 1430 (180)	Applications of Calculus I <i>Pre-Requisite: Math 1220</i>	OR	MATH 1512 (162)	Calculus I	Engineering/Math/Physics majors <i>Pre-Requisite: Math 1230 & 1240 or Math 1250</i>
MATH 1440 (181)	Applications of Calculus II <i>Pre-Requisite: Math 1430</i>		MATH 1522 (163)	Calculus II	Engineering/Math/Physics majors <i>Pre-Requisite: Math 1512</i>

PHYSICS

PHYS 1230 (PHYC 151)	Algebra-Based Physics I <i>Pre-Requisite: Math 1430 or Math 1512</i>	OR	PHYS 1310 (PHYC 160)	Calculus-Based Physics I	Engineering/Math/Physics majors <i>Pre-Requisite: Math 1512</i>
PHYS 1240 (PHYC 152)	Algebra-Based Physics II <i>Pre-Requisite: PHYS 1230</i>		PHYS 1320 (PHYC 161)	Calculus-Based Physics II	Engineering/Math/Physics majors <i>Pre-Requisite: PHYS 1310</i>

CHEMISTRY

Chem 1215/1215L (121 & 123L)	General Chemistry I w/lab for STEM <i>Pre-Requisite: Math 1220</i>				
Chem 1225/1225L (122 & 124L)	General Chemistry II w/lab for STEM <i>Pre-Requisite: Chem 1215/1215L</i>				
Chem 301/303L	Organic Chemistry I w/lab <i>Pre-Requisite: Chem 1225/1225L</i>	OR	Chem 2120 (212)	Integrated Organic Chemistry & Biochemistry <i>Pre-Requisite: Chem 1225/1225L</i>	

Section 3 Requirement: Choose courses from at least three (3) different categories/areas:

CELL/MOLECULAR (CM)

401 Topics in Cell and Molecular Biology (3)
410 Genome & Computational Biology (3)
412 Developmental Biology (3)
425 Molecular Genetics (3)
428 Human Heredity (3)
429 Molecular Cell Biology (3)
444 Genomes and Genomic Analysis (3)
446L Lab Methods in Molecular Biology (4)
450 Virology (3)
490 Infectious Organisms (3)
497 Principles of Gene Expression (3)
498L Genome Editing (3)

INTERDISCIPLINARY (ID)

419 Topics in Interdisciplinary Science (3)
470L Biology: Discovery & Innovation (4)
471 Plant Physiological Ecology (3)
480 Global Change Biology (3)
492 Introduction to Mathematical Biology (3)
495 Limnology (3)

PHYSIOLOGY (PH)

404 Topics in Physiology (3)
413 Human Microanatomy
416L Histology (4)
435L Animal Physiology (4)
445 Biology of Toxins (3)
456 Immunology (3)
460 Microbial Physiology (3)
478L Plant Physiology (4)

ECOLOGY/EVOLUTION (EE)

405 Ecosystem Dynamics (3)
408L Bosque Internship (3) (Can Be Taken Multiple Times)
409 Topics in Ecology and Evolution (3)
436L Phylogenetics (4)
437 Evolutionary Genetics (3)
451 Microbial Ecology (3)
455 Ethology: Animal Behavior (3)
457 Animal Sexual Strategies (3)
461L Introduction to Tropical Biology (3)
475 Plant Community Ecology (3)
491 Population Genetics (3)
494 Biogeography (3)

ORGANISMAL (OR)

406 Topics in Organismal Biology (3)
463L Flora of New M Mexico (4)
482L Parasitology (4)
484 Biology of Fungi (4)
485L Entomology (4)
486L Ornithology (4)
487L Ichthyology (4)
488L Herpetology (4)
489L Mammalo

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