



BIOLOGY MAJOR

Professor: M. Amspoker

Associate Professor: J. Kenney-Hunt J. Mayne, G. McNett (Chair), D. Holliday

Visiting Assistant Professor: J. Morrow

Contact: Dr. Gabe McNett

Phone: (573) 592-5395

Email: Gabe.Mc.Nett@westminster-mo.edu

The Department of Biology offers a major program of study leading to the Bachelor of Arts in Biology as well as a minor in Biology. Introductory courses are designed to meet the several needs and interests of Westminster liberal arts students. Biological Process and Biodiversity fulfill the Tier II requirement for a course in laboratory science as well as serving as foundation courses for students considering a major in biology and several related fields. Introduction to Biological Principles and Human Biology also satisfy the Tier II requirement for a course in laboratory science, but are intended primarily for non-majors. Several other courses also satisfy the Tier II requirement for a science without laboratory.

Students completing a Biology Major may not also receive a Biochemistry Major, Biology Minor, or Health Professions Minor.

In order to earn major in Biology, students must earn a letter grade of C- or better in all biology courses needed to satisfy major requirements and attain a 2.0 average or higher in these courses.

At least 50% of all Biology hours used to satisfy the major (20 -22) must be Westminster courses.

Other Recommendations:

All biology majors must complete either MAT 114 or MAT 124. We highly recommend that students complete both courses, in particular those students who wish to enter graduate or healthcare professional school. Please note that for students who do not meet the prerequisites for these courses there are other math courses offered to help students prepare for this requirement (i.e., MAT 090, Intermediate Algebra and MAT 111, College Algebra).

The Biology department highly recommends that its students also have a strong foundation in Chemistry. In particular for those students who plan to enter graduate or healthcare professional school, we recommend the following courses:

CHM 114/115 General Chemistry I

CHM 124/125 General Chemistry II

CHM 314/315 Organic Chemistry I

CHM 324/325 Organic Chemistry II

For students who plan to enter a healthcare professional school, we also recommend:

PHY 201 Physics I and PHY 212 Physics II

Please note additional courses in the Social Sciences and Humanities are also recommended. These students should consult their academic advisor for specific recommendations in these areas.

Biology Honors: this designation would be given for Biology Majors who meet the following criteria:

1. GPA \geq 3.3 average for all BIO courses
2. Two semesters for Independent, hypothesis-driven research
 - a. preferable, a single project carried out over 2 semesters for a total of 4-6 hours if independent study
 - b. alternatively:
 - i. two single semester projects for a total of 4-6 hours of independent study
 - ii. a summer Research Experience for Undergraduates (REU) or similar type of research experience and a single semester project (2-3 hrs.). These projects MUST be preapproved and must be accompanied by a formal campus presentation
3. A formal thesis/paper that is evaluated by at least two faculty members
4. An oral or poster presentation at the Undergraduate Scholars Forum or at a local, regional, or national conference.

If any substitutions or waivers of requirements are allowed, please list below and initial.

Course #	Title of Course	Hours Completed	Semester Completed	Grade

MAJOR: Biology

Student's Last Name	First Name	Middle Initial
---------------------	------------	----------------

Advisor

Date Major Declared

Course #	Title of Course	Hours Required	Semester Completed	Grade
Required Courses:				
Level One:	Introductory Courses (8 hrs): This level MUST be completed before level II:			
BIO 114/115	Biological Processes	4		
BIO 124/125	Biodiversity	4		
or BIO 100	General Biology I	4		
Level Two:	Intermediate Courses (8 hrs): Students take 2 of the following courses. At least 1 course from this group MUST be completed before Level III. The 2 nd course MUST be completed by the end of Junior year.			
BIO 203	Human Anatomy	4		
BIO 205	Ecology and Field Biology	4		
BIO 301	Genetics	4		
BIO 322	Vertebrate Biology	4		
Level Three:	Advanced Courses (18-20 hours):			
<i>Students take (5) courses with at least one course from each track and at least (3) of these courses must include a laboratory experience. One course may be a third course from Level Two. Independent research may count for one course (3-4 hours) for the Level III requirement. Completion of at least one WI/WIO course in the major is highly recommended. *Note: some courses in Level III may have specific prerequisites from Level II.</i>				
A	Cellular Biology, Molecular Biology & Human Health			
BIO 300	Cell Structure and Function**	3		
BIO 314	Vertebrate Histology (Ind. Study only)	3-4		
BIO 325	Molecular Cell Biology	4		
BIO 330	Virology (BIO 301 recommended)	3		
BIO 370	Physiology (BIO 203 or 322 prereq)	4		
BIO 372	Developmental Biology (BIO 301 prereq)	4		
BIO 398	Ind. Research (cell./human health focus)	3-4		
BIO 403	Microbiology (BIO 114/115 & 124/125 and CHM 114/115 prereq)	4		
BIO 404	Biochemistry (CHM 314/315 prereq, 324/325 coreq)	4		
BIO 415	Human Gross Anatomy (BIO 203 prereq)	4		
B	Organismal Biology			
BIO 204	Animal behavior	4		
BIO 208	Functional Plant Morphology	4		
BIO 308	Taxonomy & system. Flowering Plants	4		
BIO 309	Phycology	4		
BIO 315	Entomology	4		
BIO 318	Ornithology	4		
BIO 398	Ind. Research (organismal focus)	3-4		
C	Ecosystems: Characteristics, Processes & Management			
BIO 210	Biogeography	3		
BIO 300	Ecotoxicology with accompanying lab**	4		
BIO 320/321	Biology in Belize (or other equivalent travel course)	4		
BIO 340	Wetlands (CHM 105/106 or CHM 114.115 prereq)	3		
BIO 345	Forest Resources & Management	4		
BIO 350	Conservation Biology	3		
BIO 398	Ind. Research (ecosys./ecological focus)	3-4		
Capstone Course (must be completed in the Junior or Senior year) 3 hrs.				
BIO 450	Evolution (BIO 301 recommended)	3		
Other Required Courses (3 -5 hours)				
MAT 114	Elementary Statistics	3		
or MAT 124	Calculus I	5		
Total Hours 40 - 44				