WILDLIFE & NATURAL RESOURCES 3+2 PROGRAM, JOINT BACHELOR OF SCIENCE/MASTER OF SCIENCE IN BIOLOGY

Specific Admission Requirements

Students are simultaneously awarded both the BS and MS degrees in five years, thus shortening the normal time to receive both degrees from six years to five years. They must apply and be admitted into the Biology MS program by the Spring semester of their junior year (preferred) or by the start of the Fall semester of the senior year and meet the course requirements listed below. Students applying to the 3+2 plan must have a minimum 3.0 overall GPA and a minimum 3.25 GPA in their biology coursework.

Prior to being admitted to the WANR/BIOL MS 3+2 plan, students must have completed or be in the process of taking the following courses:

Course	Title	Credits
BIOL 201	Botany (GT-SC2)	2
BIOL 201L	Botany Laboratory (GT-SC1)	2
BIOL 202	Zoology	2
BIOL 202L	Zoology Laboratory	2
BIOL 352	Evolutionary Biology and Ecology	3
WANR 302	Principles of Wildlife Management	3
WANR 303	Nat Resource Policy & Administration	3
or WANR 304	Human Dimensions in Nat Res Mgmt	
CHEM 111	Principles of Chemistry (GT-SC2)	3
CHEM 111L	Principles of Chemistry Lab (GT-SC1)	1
CHEM 211	Introduction to Organic Chemistry	3
CHEM 211L	Intro to Organic Chemistry Lab	1
GEOL 101	Earth Science (GT-SC2)	3
or PHYS 201	Principles of Physics I (GT-SC2)	
GEOL 101L	Earth Science Lab (GT-SC1)	1
or PHYS 201L	Principles of Physics Lab I (GT-SC1)	
MATH 156	Introduction to Statistics (GT-MA1)	3
MATH 221	Applied Calc: An Intuitive Approach (GT-MA1)	4

The application file for admission to the 3+2 plan must include:

1. A completed Biology 3+2 online application;
2. A CSU Pueblo transcript;
3. Two letters of recommendation;
4. A letter of support from a CSU Pueblo Faculty mentor
5. A letter of intent;
6. GRE scores are optional and may be used to supplement the application

Student Learning Outcomes

1. Independent development and mastery of problem solving skills including experimental design, execution, critical analysis, and interpretation of the results of original scientific experimentation (thesis) or experiential learning (internship).
2. Persuasive communication and defense of significant results of original scientific investigation presented in both written and oral format at a graduate peer-professional level.
3. Critical evaluation of an independently accessed comprehensive body of scientific literature which is project relevant and foundational in supporting and explaining research findings in both written and oral format.
4. Development of intrinsically held fundamental field-specific knowledge which will be applied to explain and defend research findings at a level of mastery expected by peer-professionals.
5. Maintain a consistent professional work ethic of independently taking the initiative and motivation to produce tangible products of a quality commensurate with peer-standards in graduate or professional schools or in the career field being pursued.

Outcomes Assessment Activities

- The faculty of the GPNS will use a variety of methods for evaluating student learning outcomes. Students completing this degree program will give a public research seminar (BIOL 593 Seminar (1 c.h.)) that will be evaluated by cognizant GPNS faculty members. A research thesis or internship project will be designed, conducted, and publically presented in writing and orally prior to defense and evaluation by the student's Graduate Advisory Committee.

Specific Program Requirements

Program Overview

Requirement	Credits
BS Wildlife & Natural Resources Requirements	108
MS Biology Requirements	30-34
Total Credits	**138-142**

Students in the 3+2 BS/MS program must complete:

- The requirements for a BS in Wildlife & Natural Resources including specific concentration courses.
- The requirements for the MS in Biology including thesis, internship, or non-thesis online options.

Students may take up to 12 graduate credits in "stacked" (400/500) courses, with the permission of the Biology graduate committee and Program Director.

Undergraduate Requirements

Course	Title	Credits
BIOL 171	First Year Seminar	1
BIOL 181 & 181L	College Biology I/Organismal Bio (GT-SC2) and College Biology I/Organismal Bio Lab (GT-SC1)	4
BIOL 182 & 182L	College Biology II/Cellular Biology (GT-SC2) and College Biology II/Cellular Bio Lab (GT-SC1)	4
BIOL 201 & 201L	Botany (GT-SC2) and Botany Laboratory (GT-SC1)	4
BIOL 202 & 202L	Zoology and Zoology Laboratory	4
BIOL 352	Evolutionary Biology and Ecology	3
BIOL 548	Biological Statistics	3

BIOL 593	Seminar	1
WANR 302	Principles of Wildlife Management	3

Select from the following BS WANR concentrations:

- Wildlife & Natural Resources: Aquatic Concentration, Bachelor of Science (https://catalog.csupueblo.edu/college-of-science-technology-engineering-and-mathematics/biology/wildlife-and-natural-resources-bs-aquatic-concentration/)
- Wildlife & Natural Resources: Terrestrial Concentration, Bachelor of Science (https://catalog.csupueblo.edu/college-of-science-technology-engineering-and-mathematics/biology/wildlife-and-natural-resources-bs-terrestrial-concentration/)

Graduate Requirements

On Campus Program

Specific Core Requirements

Course	Title	Credits
On campus students will take one of the following courses:		**4**
BIOL 512 & 512L	Advanced Cellular Biology and Advanced Cellular Biology Lab	4
BIOL 514 & 514L	Vertebrate Physiology and Vertebrate Physiology Lab	4
BIOL 540 & 540L	Advanced Biotechniques and Advanced Biotechniques Lab	4
BIOL 543 & 543L	Limnology and Limnology Lab	4
BIOL 553 & 553L	Ecology and Ecology Field Studies	4
Total Credits		**4**

Thesis Option

Course	Title	Credits
BIOL 510	Foundations in Graduate Studies	3
BIOL 589	Thesis Defense	1
BIOL 593	Seminar	1
BIOL 599	Thesis Research	6
MATH 550	Statistical Methods	3
Electives		12
Total Credits		**26**

Internship Option

Course	Title	Credits
BIOL 510	Foundations in Graduate Studies	3
BIOL 588	Internship Seminar	1
BIOL 593	Seminar	1
BIOL 598	Internship	4
MATH 550	Statistical Methods	3
Electives		16
Total Credits		**28**

Online Program

Non-Thesis Option

Course	Title	Credits
BIOL 505	Foundations in Graduate Studies	3
BIOL 548	Biological Statistics	3
BIOL 559	Comprehensive Exam	1
BIOL 568	Evolution	3
BIOL 577	Current Issues in Biology	1
Electives		23
Total Credits		**34**

Electives

Elective courses are select from the courses listed below. Others may be used, with permission, as new courses are added or from other areas of student (e.g. CHEM).

Course	Title	Credits
BIOL 502 & BIOL 503L	Immunology and Virology Lab	4
BIOL 503	Virology	3
BIOL 512 & 512L	Advanced Cellular Biology and Advanced Cellular Biology Lab	4
BIOL 513 & 513L	Plant Physiology and Plant Physiology Lab	4
BIOL 514 & 514L	Vertebrate Physiology and Vertebrate Physiology Lab	4
BIOL 515	Medical Physiology	3
BIOL 521 & 521L	Histology and Histology Lab	4
BIOL 522	Neurobiology	3
BIOL 532 & 532L	Developmental Biology and Developmental Biology Lab	4
BIOL 540 & 540L	Advanced Biotechniques and Advanced Biotechniques Lab	4
BIOL 541 & 541L	Freshwater Invertebrate Zoology and Freshwater Invertebrate Zoology Lab	4
BIOL 543 & 543L	Limnology and Limnology Lab	4
BIOL 552 & 552L	Advanced Microscopy and Advanced Microscopy Lab	4
BIOL 553 & 553L	Ecology and Ecology Field Studies	4
BIOL 554	Behavioral Ecology	3
BIOL 560	Survey of Genomics & Bioinformatics	3
BIOL 561	Applied Geospatial Technology (GIS/GPS)	3
BIOL 562	Environmental Policy & Management	3
BIOL 565	Environmental Toxicology	3
BIOL 568	Evolution	3
BIOL 579 & 579L	Ichthyology and Ichthyology Laboratory	3
BIOL 581 & 581L	Entomology and Entomology Lab	3
BIOL 582 & 582L	Herpetology and Herpetology Lab	3
BIOL 583 & 583L	Mammalogy and Mammalogy Lab	3
BIOL 584 & 584L	Ornithology and Ornithology Lab	3

BIOL 585 & 585L	Plant Taxonomy and Plant Taxonomy Lab	4
BIOL 586	Field Botany	3
BIOL 591	Special Topics	1-4
BIOL 595	Independent Study	1-4
WANR 501 & 501L	Fisheries Science and Fisheries Science Lab	3
WANR 502	Management of Endangered Species	3
WANR 510	Aquaculture	3
WANR 521	Wildlife Conservation	3
WANR 530	Wildlife & Fisheries Techniques	4
WANR 575	Science Communication	3
WANR 585	Wildlife Research Discussion	1
WANR 587	R Code Introduction	1