

BIOE - Biology-Ecological

BIOE 416. Alpine Ecology. 3 Credits. (1 Lec, 2 Lab) Su

PREREQUISITE: Junior standing, BIOB 170IN. The ecology characteristics of alpine areas. A three-day field trip will confirm and reinforce material presented in class and is a course requirement.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	10435	001	July-start: 4x4	MTWR	LEWIS107	8:00am - 9:00am
2020 Summer Semester	10435	001	July-start: 4x4	MTWR	LEWIS306	9:15am - 10:35am

BIOE 420. Field Ornithology. 3 Credits. (2 Lec, 1 Lab) F,Su

PREREQUISITE: Junior standing, and BIOB 100IN or BIOB 170IN. Field identification, habitat affinities and life histories of birds of the northern Rockies. Includes early morning field trips.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	11197	001	First Half Session	TR	-	7:00am - 3:00pm

BIOE 421. Yellowstone Wildlife Ecology. 3 Credits. (2 Lec, 1 Lab) Su

PREREQUISITE: Junior standing, and BIOB 100IN or BIOB 170IN, and BIOE 370. Basic ecology of the major animal species of the Yellowstone area and the ecological controversies surrounding their management.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	11149	001	June-start: 4x4	-	-	-
2020 Summer Semester	11182	002	July-start: 4x4	-	-	-

BIOE 513. Terrestrial Ecology of Plains and Prairies. 1 Credit. (1 Rct) Su

PREREQUISITE: Either BIOE 408 or BIOL 516, graduate standing, secondary teacher certification, two years teaching experience, and computer access. COREQUISITE: Suggested: ESCI 513. Students will develop plant keys for classroom use, quantitatively analyze two grassland communities, and develop classroom activities on ecology of grasslands. Distance learning, class offered by internet connection. This course is designed for secondary school teachers enrolled in MSSE program and cannot be used in graduate programs in Biological Sciences.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	10841	801	Non-standard term dates 08-JUN-20 31-JUL-20	-	ONLINEWEB-	-

BIOE 519. Riparian Zones/Wetlands. 2 Credits. (2 Rct) Su

PREREQUISITE: Either BIOL 516 or BIOE 408, secondary teacher certification, two years teaching experience, and computer access. COREQUISITE: Suggested: ESCI 512, ESCI 515. Students will develop plant keys for classroom use, quantitatively analyze two riparian and two wetland areas, and develop classroom activities about ecology of those areas. Distance learning class offered by internet connection. This course is designed for secondary school teachers enrolled in the MSSE program and cannot be used in graduate programs in Biological Sciences.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	10842	801	Non-standard term dates 08-JUN-20 31-JUL-20	-	-	-

BIOE 520. Animal Biodiversity in GYE. 2 Credits. (1 Lec, 1 Lab) Su

PREREQUISITE: BIOE 370, WILD 301, BIOE 405, or equivalent and (a) 2 years science technology experience or (b) enrolled in MSSE. Exploration of biodiversity's meaning, importance & determinants; key ecological features of the Greater Yellowstone Ecosystem and patterns of change in those features: & possible strategies for maintaining biodiversity in the Greater Yellowstone Ecosystem.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	10831	001	Non-standard term dates 15-JUN-20 19-JUN-20	M	REID401	8:00am - 12:00pm

BIOE 522. Birds of Prey. 2 Credits. (1 Lec, 1 Lab) Su

PREREQUISITE: BIOE 370, WILD 301, BIOE 405, or equivalent and 2 years science technology experience or enrolled in MSSE. Exploration of the ecology and habitat of avian raptors in the Greater Yellowstone Ecosystem (GYE). Application of the scientific method to the study of raptors. Field identification of raptors, investigation of species life histories, and inquiry methods of species-specific habitat needs. Student will develop methods and skills for classroom based research on wildlife. This course is designed for secondary school teachers enrolled in the MSSE program and cannot be used in graduate programs in Biological Sciences.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	11166	001	Non-standard term dates 18-MAY-20 07-AUG-20	-	-	-

BIOE 523. Wildlife Ecology. 2 Credits. (2 Lec) Su

PREREQUISITE: BIOE 370, WILD 301, BIOE 405, or equivalent and 2 years science technology experience or enrolled in MSSE. Introduction to wildlife species and the range of habitats present in the Northern Rocky Mountain ecosystems. Emphasis on large carnivores and ungulates within montane terrestrial systems. Application of the scientific method to study interactions between predators, prey, and human impacts. This course is designed for middle and high school teachers and cannot be used in graduate programs in Biological Sciences.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	10832	001	Non-standard term dates 06-JUL-20 10-JUL-20	M	LEWIS407	8:00am - 5:00pm

BIOE 593. Alpine Ecology for Teachers. 2 Credits. (1 Lec, 1 Lab) Su

PREREQUISITES: A minimum of two years science teaching experience. The primary goals in this course will be to understand how altitude affects the structure, function and evolution of alpine and sub-alpine plants and animals, and to create ways to bring this understanding into the grade 6-12 classroom. We will explore and gather data describing the biotic (living) and abiotic (non-living) constraints of sub-alpine and alpine environments to infer how these factors affect the form, abundance and niches of a variety of plants and animals.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	11053	001	Non-standard term dates 20-JUL-20 24-JUL-20	-	-	-

BIOE 596. Land Use Issues in GYE for Teachers. 2 Credits. (1 Lec, 1 Rec) Su

PREREQUISITES: Teacher of science with two years minimum teaching experience. This course will lay the groundwork for an understanding the legal and political basis for scientific management of natural resources. Readings, field visits and skill-building exercises will equip science educators with the social context of complex ecological issues.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	11071	001	Non-standard term dates 29-JUN-20 02-JUL-20	M	LEWIS407	8:00am - 1:00pm

BIOE 597. Ecology of Trout Steams for Teachers. 2 Credits. (1 Lec, 1 Lab) Su

PREREQUISITES: A minimum of 2 years science teaching experience. Montana is home to world-renowned trout streams, and this course is designed to delve into how trout and trout streams function and some of the current issues surrounding their management. The course content will include principles and techniques for studying trout and trout streams in the laboratory and the field. This course will combine laboratory lectures and exercises with day-long field visits to area streams to collect aquatic insects, conduct habitat analyses, and view various types of stream management practices. On one field trip, students will don wet suits and directly observe trout behavior.

Term	CRN	Section	Session/Dates	Days	Location	Time
2020 Summer Semester	11362	001	Non-standard term dates 13-JUL-20 17-JUL-20	MF	LEWIS407	8:00am - 5:00pm

Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Adobe Garamond Pro.

The editor may contact Leepfrog for a draft with the correct fonts in place.