**WILDLIFE (WLF)**

**WLF F101 Survey of Wildlife Science**  
2 Credits  
Offered Fall  
An introduction to wildlife science for research, conservation and management. Lectures, presentations, labs and other outside class activities will familiarize students with the field of wildlife biology and the wildlife profession. Special fees apply.  
*Lecture + Lab + Other: 1 + 2 + 1*

**WLF F301 Design of Wildlife Studies**  
3 Credits  
Offered Spring  
Study designs for wildlife populations and their habitats. Probability theory, finite population sampling, capture-mark-recapture sampling and research design will be examined through lectures, labs and a term project.  
**Prerequisites:** WLF F101 (may be taken concurrently); MATH F151X (may be taken concurrently) or MATH F122X (may be taken concurrently).  
**Recommended:** STAT F200X or STAT F300.  
*Lecture + Lab + Other: 2 + 3 + 0*

**WLF F304 Wildlife Internships**  
1-3 Credits  
Offered Fall and Spring  
Practical experience in wildlife management in public or private agencies. Projects are approved by faculty member and supervised by professional agency staff. May not be substituted for courses required for major.  
*Lecture + Lab + Other: 1-3 + 0 + 0*

**WLF F305 Wildlife Diseases**  
3 Credits  
Offered Fall Odd-numbered Years  
Basic concepts of parasitic, infectious, environmental and nutritional diseases. Specific study of Alaska wildlife diseases. Basic necropsy technique and chemical immobilization.  
**Prerequisites:** BIOL F115X and BIOL F116X.  
**Recommended:** BIOL F310.  
*Lecture + Lab + Other: 3 + 0 + 0*

**WLF F322 Principles and Techniques of Wildlife Management**  
3 Credits  
Offered Fall  
This course applies ecology to the study and management of animals and their habitats. We will discuss management for consumptive and non-consumptive uses of birds, mammals, reptiles and amphibians.  
**Prerequisites:** BIOL F371; WLF F101; WRTG F111X; WRTG F211X; WRTG F212X; WRTG F213X or WRTG F214X.  
*Lecture + Lab + Other: 2 + 3 + 0*

**WLF F421 Ecology and Management of Large Mammals**  
3 Credits  
Offered Spring Odd-numbered Years  
Identification, taxonomy, distribution, life history and ecology of North American large mammals. Exploration of roles of reproduction, predation, nutrition, habitat alteration and competition in population dynamics of large mammals, and management practices designed for conservation of habitats and populations.  
**Prerequisites:** BIOL F371; WLF F322.  
*Lecture + Lab + Other: 3 + 0 + 0*

**WLF F425 Ecology and Management of Birds**  
3 Credits  
Offered Spring Even-numbered Years  
Ecology of avian populations with a focus on harvest and habitat management for North American birds. Distributions, life-history, population dynamics, and monitoring and research techniques will be considered.  
**Prerequisites:** BIOL F371; COJO F131X or COJO F141X; WLF F322.  
*Lecture + Lab + Other: 3 + 0 + 0*

**WLF F433 Conservation Genetics**  
3 Credits  
Offered Fall Even-numbered Years  
Concepts of population genetics, phylogenetics, pedigree analysis, systematics and taxonomy as they apply to conservation of species. Evaluating the impact of small population size, population fragmentation, inbreeding, hybridization, taxonomic uncertainties and other factors on viability and management of species.  
**Prerequisites:** BIOL F371 and BIOL F260.  
**Recommended:** NRM F277.  
**Cross-listed with:** BIOL F433.  
*Stacked with:* BIOL F633 and WLF F633.  
*Lecture + Lab + Other: 3 + 0 + 0*

**WLF F469 Landscape Ecology and Wildlife Habitat**  
3 Credits  
Offered Spring Even-numbered Years  
A problem-based learning and critical thinking approach to modern methods in landscape ecology, including geographic information systems, remote sensing, modeling, software and the Internet. Graduate students are expected to help undergraduates with problems and questions.  
**Prerequisites:** BIOL F371; COJO F131X or COJO F141X or COJO F141X.  
**Cross-listed with:** BIOL F469.  
*Stacked with:* BIOL F669; WLF F669.  
*Lecture + Lab + Other: 2 + 3 + 0*

**WLF F485 Global Change Biology**  
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3 Credits  
Offered Spring  
Causes of climate change, the climate record, and the effects of past and forecast climate change on biophysical systems. Consideration of impacts on plants, animals, ice, and people with an emphasis on Alaska and the Arctic.  
**Prerequisites:** BIOL F371; CHEM F105X; CHEM F106X; WRTG F111X; WRTG F211X, WRTG F212X, WRTG F213X or WRTG F214X.  
**Cross-listed with:** BIOL F485.  
*Lecture + Lab + Other: 3 + 0 + 0*

**WLF F602 Research Design**  
3 Credits  
Offered Fall  
An introduction to the philosophy, performance and evaluation of hypothetical/deductive research in the biological sciences, with emphasis on hypothesis formulation and testing. Each student will develop a research proposal.  
**Prerequisite:** Graduate standing.  
**Cross-listed with:** BIOL F602.  
*Lecture + Lab + Other: 3 + 0 + 0*
WLF F604  Scientific Writing, Editing and Revising in the Biological Sciences
3 Credits
Offered Spring
For students who are ready to produce a manuscript or thesis chapter. Topics include the publishing process (e.g., the role of editors and reviewers), preparing to write (selecting a journal, authorship), the components of the scientific paper, revising and editing manuscripts, and responding to reviews. Students will produce a complete manuscript.
Prerequisites: Graduate standing in Biology, Wildlife, or related discipline; permission of instructor.
Cross-listed with BIOL F604.
Lecture + Lab + Other: 3 + 0 + 0

WLF F625  Population Dynamics of Vertebrates
3 Credits
Offered Spring Odd-numbered Years
Sampling vertebrate populations, modeling their population dynamics and the implications for management. Focus will be on study design, model assumptions, estimation of population parameters and inference. State-of-the-art computer applications will be employed in laboratory exercises of actual and simulated data.
Prerequisites: BIOL F371; STAT F401.
Cross-listed with FISH F625.
Lecture + Lab + Other: 2 + 3 + 0

WLF F633  Conservation Genetics
4 Credits
Offered Fall Even-numbered Years
Concepts of population genetics, phylogenetics, pedigree analysis, systematics and taxonomy as they apply to conservation of species. Evaluating the impact of small population size, population fragmentation, inbreeding, hybridization, taxonomic uncertainties and other factors on viability and management of species.
Prerequisites: BIOL F260; BIOL F371.
Recommended: NRM F277.
Cross-listed with BIOL F633.
Stacked with BIOL F433; WLF F433.
Lecture + Lab + Other: 3 + 3 + 0

WLF F669  Landscape Ecology and Wildlife Habitat
3 Credits
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A problem-based learning and critical thinking approach to modern methods in landscape ecology, including geographic information systems, remote sensing, modeling, software, and the Internet. Graduate students are expected to help undergraduates with problems and questions.
Prerequisites: Graduate standing.
Cross-listed with BIOL F669.
Stacked with BIOL F469; WLF F469.
Lecture + Lab + Other: 2 + 3 + 0

WLF F680  Data Analysis in Biology
3 Credits
Offered Spring
Biological applications of nonparametric statistics, including tests based on binomial and Poisson distributions, analysis of two-way and multiway contingency tables, and tests based on ranks; multivariate statistics, including principal component analysis, ordination techniques, cluster and discriminate analysis; and time-series analysis. Introduction to the use of the computer and use of statistical packages. Each student will analyze a data set appropriate to the student's research interests.
Prerequisites: STAT F200X, STAT F401; graduate standing in a biologically oriented field.
Cross-listed with BIOL F680.
Lecture + Lab + Other: 2 + 3 + 0

WLF F692  Graduate Seminar
1-6 Credits
Topics in fish and wildlife management explored through readings, talks, group discussions and guest speakers with a high level of student participation.
Prerequisites: Graduate standing.
Lecture + Lab + Other: 0 + 0 + 1-6