## Wildlife (WLF)

### WLF F101  Survey of Wildlife Science
3 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 or Co-requisites: WLF F101; MATH F151X or MATH F122X; or permission of the instructor.  
**Recommended:** STAT F200X or STAT F300.  
**Lecture + Lab + Other:** 2 + 3 + 0

### WLF F304  Wildlife Internships
1-3 Credits  
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.  
**Prerequisites:** Permission of instructor.  
**Lecture + Lab + Other:** 1-3 + 0 + 0

### WLF F305  Wildlife Diseases
3 Credits  
Offered Spring 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 or equivalent; or permission of instructor.  
**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 or WRTG F213X.  
**Lecture + Lab + Other:** 2 + 3 + 0

### WLF F410  Wildlife Populations and Their Management
3 Credits  
Offered Fall  
Characteristics and ecology of wildlife populations and the knowledge necessary for their wise management. Measures of abundance, dispersal, fecundity and mortality, population modeling, competition and predation, and the management of rare species and their habitats.  
**Prerequisites:** BIOL F371; calculus course; introductory STAT course; BIOL F471.  
**Lecture + Lab + Other:** 2 + 3 + 0

### WLF F421  Ecology and Management of Large Mammals
3 Credits  
Offered Fall Even-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 or permission of instructor.  
**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 F322O; or permission of instructor.  
**Lecture + Lab + Other:** 3 + 0 + 0

### WLF F433  Conservation Genetics
3 Credits  
Offered Spring  
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 or equivalents; or permission of instructor.  
**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 As Demand Warrants  
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 or equivalent; COJO F121X or COJO F131X 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
3 Credits  
Offered Fall  
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 or WRTG F213X; or permission of instructor.  
**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; or permission of instructor.
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 Spring
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 or equivalents; or permission of
instructor.
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
Offered As Demand Warrants
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 Fall
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 analyses. 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; or permission of instructor.
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 or permission of instructor.
Lecture + Lab + Other: 0 + 0 + 1-6