

Course Syllabus
Conservation Genetics -- Zool 584
Dr. Ed Heist

Course Description: Application of principles from evolutionary and ecological genetics to conservation biology, fishery management, wildlife management, and aquaculture. Includes an overview of classical, molecular, population and quantitative genetics leading to an understanding of how managers can conserve genetic diversity and evolutionary potential of natural and captive populations.

Text: Conservation and the Genetics of Populations. 2nd edition. Allendorf, Luikart, and Aitken. 2013.

Meeting Times: LS III 1003. Tuesday and Thursday 9:00 – 10:15 AM.

Office Hours: LS III 1019. Tuesday and Thursday 10:30 AM – 12:00 PM.

Evaluation: Four quarterly exams will be administered. Exams will consist primarily of short essay, short answer, and definition of terms. The final grade for this course will be determined by the mean of the four exam scores.

Lecture/Exam Schedule

Date	Chapter	Topics
19-Aug		No Class
21-Aug	1	Introduction
26-Aug	2	Phenotypic variation in natural populations Genetic variation in natural populations: chromosomes and
28-Aug	3	proteins
2-Sep	4	Genetic variation in natural populations: DNA
4-Sep		Conservation Genetics Lab tour
9-Sep	5	Random mating populations: Hardy Weinberg Principle
11-Sep	6	Small populations and genetic drift
16-Sep		Exam 1 Chapters 1-5
18-Sep	7	Effective population size
23-Sep	8	Natural selection
25-Sep	9	Population subdivision 1
30-Sep	9	Population subdivision 2
2-Oct	10	Multiple loci
7-Oct	11	Quantitative genetics 1
9-Oct		Exam 2 Chapters 6-10
16-Oct	11	Quantitative genetics 2
21-Oct	12	Mutation
23-Oct	13	Inbreeding depression
28-Oct	14	Demography and Extinction
30-Oct	15	Metapopulations and fragmentation
4-Nov	16	Units of conservation 1
6-Nov		Exam 3 Chapters 11-15
11-Nov	16	Units of conservation 2
13-Nov	17	Hybridization
18-Nov	18	Exploited populations
20-Nov	19	Conservation breeding and restoration
25-Nov	20	Invasive species
2-Dec	21	Climate Change
4-Dec	22	Genetic identification and monitoring

