

# Syllabus - Ecology and Systematics of Fish and Mammals FNR 241

<b>Instructors:</b>	<b>Rob Swihart</b>	<b>Krista Nichols</b>
<b>Office:</b>	125 PFEN	G-305 Lilly
<b>Telephone:</b>	494-3590	496-6848
<b>Email:</b>	<a href="mailto:rswihart@purdue.edu">rswihart@purdue.edu</a>	<a href="mailto:kmnichol@purdue.edu">kmnichol@purdue.edu</a>
<b>Office Hours</b>	By appointment	To Be Announced

**Lecture:** MWF 3:30-4:20

**Location:** University 317

**Text:** *Vertebrate Biology* by D. Linzey. McGraw Hill. 2001.

**Goal:** The goal of this course is to introduce you to the ecology and systematics of fish and mammals. You will be presented with information on the evolutionary history and special adaptations of fish and mammals within the context of their ecological roles as individuals or populations in a biological community. In this course we also will provide insights into the phylogenetic relationships and discuss contemporary conservation issues related to fish and mammals.

## **Tests and Grades**

There will be 2 tests per quarter (total of 4 per semester) and 3 quizzes per quarter (total of 6 per semester). The second and fourth tests will be cumulative for each quarter (species group) only. All testing will be done on SCANTRON sheets for automated grading. Grades will be posted on WebCT Vista.

First Exam	Mammals	100 points	<b>GRADE SCALE</b>
Second Exam	Mammals	150 points	560-504 = A
Quizzes	Mammals	30 points	503-448 = B
Third Exam	Fish	100 points	447-392 = C
Fourth Exam	Fish	150 points	391-336 = D
Quizzes	Fish	30 points	335-000 = F
	<b>TOTAL</b>	<b>560 points</b>	

**\*\*\*\*Students will NOT be allowed to retain copies of quizzes or exams\*\*\*\***

**Makeup Exam Policy:** There will be a strictly enforced MAKE-UP policy for all exams and quizzes. To be allowed a make-up test a student must submit a valid excuse in writing **prior** to the test date. Emergencies will be handled on a case by case basis but students are **strongly** encouraged to contact the professor, the department, or the Ag School ASAP.

**Extra credit assignments:** There will be one optional extra credit assignment for mammals and one for fish. Each is worth an additional 10 points. Dr. Swihart will provide you with guidelines to follow.

**Students with disabilities:** If you have a disability which requires some special accommodation, please make an appointment within the first three weeks of the semester to discuss the appropriateness of the instructional methods in this class, or any adjustments that you may need. We have found it possible to make accommodations in the past, but it is important that we talk about this at the beginning of the semester.

**MAMMALS –Prof. Swihart**

<b>Date</b>	<b>TOPIC</b>	<b>Reading: Linzey</b>
8/22	Introduction to the course: ecology and systematics	Chs. 1 & 2
8/24	Ecology and systematics (continued)	Ch. 2
8/26	Origin and evolution of mammals	Ch. 9, pp. 264-269
8/29	An overview of modern mammals	Ch. 9
8/31	Mammalian energetics	
9/02	Sensory systems: how mammals avoid going bump in the night	Ch. 9 (part), Ch. 12
9/05	LABOR DAY – NO CLASS	
9/07	<b>(QUIZ 1)</b> Esrever ni ygooce gnigarof: strategies to avoid being lunch	Ch. 9 (part), Ch. 12
9/09	Nutritional ecology: food processing systems	Ch. 9 (part)
9/12	Foraging ecology: predators dining out	Ch. 9 (part), Ch. 12
9/14	Reproductive ecology: equipment and environmental influences on sex	Ch. 9 (part)
9/16	<b>(QUIZ 2)</b> Reproductive ecology: life after sex	Ch. 9
9/19	Breeding systems and reproductive strategies of mammals	Ch. 9 (part), Ch. 12
9/21	<b>TEST 1 - MAMMALS</b>	--
9/23	Costs of reproduction	
9/26	An introduction to population ecology	Ch. 10
9/28	Biotic factors affecting mammal populations	Ch. 10
9/30	Population-level effects of predation	Ch. 13
10/03	Parasites and diseases of mammals	
10/05	<b>(QUIZ 3)</b> Population cycles	Ch. 10
10/07	Community ecology	Ch. 13
10/10	OCTOBER BREAK – NO CLASS	
10/12	Mammalian zoogeography	
10/14	Conservation of mammals: exotics, habitat loss, over-harvest	Ch. 16
10/17	Conservation of mammals: recovery efforts	Ch. 16
10/19	<b>TEST 2 - MAMMALS</b>	--

**FISH - Prof. Nichols**

<b>Date</b>	<b>TOPIC</b>	<b>Reading - Linzey</b>
10/21	An overview of modern fishes	Review Chapters 1-2 (note fish examples)
10/24	Fish from the outside: designed for life in 3 dimensions	pp. 5 – 10; 95 - 101
10/26	Swimming mechanics and energetics; life as an ectotherm	pp. 101-104
10/28	<b>[QUIZ 4]</b> ; Evolution and systematics	pp. 27 – 31; Chapter 4 and pp. 90-95
10/31	Respiration and circulation	pp. 11-12; 105-108
11/02	Buoyancy control	pp. 109-113
11/04	<b>[QUIZ 5]</b> Osmoregulation and stress	pp. 117 - 119
11/07	Sensory systems: finding food, friends, and your way home	12 – 15; 113 - 116
11/09	Sensory systems continued: why fish stay in school	“
11/11	Feeding anatomy & behavior: What are they gaping at?	37; 108 - 109
11/14	<b>TEST 3 - FISH</b>	
11/16	Growth dynamics	125 - 128
11/18	Reproduction: life history strategies	15 – 18; 120 - 125
11/21	Reproduction: physiology	“
11/28	Reproduction: early development	“
11/30	<b>[QUIZ 6]</b> Introduction to fish community ecology	pp. 55 – 58; 375 - 376
12/02	Habitats and community structure in ponds, lakes, and reservoirs	pp. 58 - 60
12/05	Habitats and community structure in the Great Lakes	Supplemental reading
12/07	Habitats and community structure in streams	“
12/09	Conservation of fishes: critical issues and recovery strategies	Chapter 16
TBA	<b>TEST 4 - FISH</b> (see finals week schedule for time and room)	