



will receive extra credit. Students are not required to be physically present in the class (lecture or lab) but participation will be included in the evaluation of the lab notebook.

Great expectations:

Exams (60%) - You will be expected to take three exams and I will drop the lowest score of the three exams. If you miss an exam for any reason, you will be required to take the other two and there will be no make up exams. All exams include lecture (20%) and laboratory material (10%) and both the lecture and lab periods are scheduled for exams.

Paper or Project with Presentation (15%) - You are also requested to do either a paper or laboratory project that is to be written up (10 page write up max - 10%) and present this to the class for 10 minutes (5%). Projects will address the systematics, morphology, evolution and/or ecology of fishes. You are permitted to work in teams and projects must be approved by Dr. Reinthal. No duplicate projects are permitted and projects are approved on a first come first served basis.

Lab (25%) - You must turn in a laboratory notebook with all your lab work, identifications, field trips, dissections, notes, drawings, etc. You are not permitted to copy other student's laboratory notebooks. If you miss a lab, see the TA or the Professor about getting access to the lab to make up the missed work.

Grading Scale: If, as expected, the class average for all points during the semester is between 70% and 75%, then the following scale will be used (plus or minus 1%).

A = 100%-89%   B = 88%-80%   C = 79%-69%   D = 68%-58%   E = 57%-0%

Students are expected to adhere to Student Code of Conduct - see <http://web.arizona.edu/~dos/uapolicies/>

Good luck and best fishes.

## Ichthyology

<u>Date</u>	<u>Lecture/Lab</u>	<u>Reading</u>
Part 1 - Diversity of Fishes and Anatomy		
Aug. 22	Introduction to course, Lab – Systematics and taxonomy Discussion of class, grading, field trips, projects etc.	
Aug. 24 & 2	Introduction to Ichthyology & fish.  No Lab	Preface, Chpt. 1
Aug 29	Hard Anatomy Lab - Osteology and Fish skulls	Chpt. 3 & 4
Aug 31	Soft Anatomy Lab - Lamprey 1	Chpt 3 & 4
Sept. 5	Respiration Lab – Lamprey2/Shark 1	Chpt. 5
Sept. 7	Sensory Lab – Shark 2/Perch 1	Chpt. 6
Sept. 12	Homeostasis Lab – Perch 2	Chpt. 7
Sept. 14	Functional Morphology Review Anatomy	Chpt. 8
Sept. 19	Catch Up and Review	
Sept 21	Exam 1 – Lecture and Lab	
Sept. 26	History of Fish; Agnatha, Cephalochordates, Placoderms Lab – Arizona Fishes 1 – Seine/Electroshock	Chpt. 11 Ch. 13 pp. 197-204
Sept 28	Chondrichthyes, Sarcopterygians & Primitive actinopterygians Lab – Arizona Fishes 2 –Seine/Electroshock	Chpt. 12 Rest of 13
Oct. 3	Aravaipa – Desert Fishes – Special Adaptations?? No Lab	Chpt. 17
Oct. 5-7	ARAVAIPA FIELD TRIP	
Oct 10	More Primitive Actinopterygians Lab - Orders of Fish 1 - Cartilaginous Fish	Review 11-13
Oct 12	Finish Actinop and start Teleosts I Osteoglossomorpha, Elopomorpha, Clupeomorpha Lab - Orders of Fish 2	Chpt. 14

Oct 17	Teleosts II - Acanthopterygii Lab – Orders of Fish 3	Chpt 15
Oct. 19	Some many teleosts so little time - Catch up Lab – Orders of Fish 4	
Oct 24	Zoogeography and Special Adaptations Lab – Order of Fish – catch up	Chpt 16
Oct 26	Review and Catch Up Urban Lake Electroshocking – Silverbell Lake (hopefully)	
Oct 31	Exam 2 Lecture – History Fishes and Zoogeography/Special Adaptations Exam 2 Lab on orders of fish and Arizona fishes	
Nov. 2	Reproduction and Behavior Museum Curation Techniques BIOTA Computer lab	Chpt. 20, 21, 22
Nov. 7	Life History Collection and Survey Methods	Chpt. 9
Nov. 9	Growth Lab – Age and Growth of fish Bioenergetics Modeling	Chpt. 10
Nov. 14	DFC - Predator/Prey Interactions Lab – Feeding Ecology	Chpt. 18
Nov. 16	DFC - Predator/Prey Interactions No Lab	Chpt. 19
Nov. 21	Populations and Communities Parasites	Chpt 23
Nov. 23	Thanksgiving Holiday (Go Fishing)	
Nov. 28	Populations and Communities Lab – Presentations	Chpt. 24
Nov. 30	Conservation Lab – Presentations	Chpt. 25
Dec. 5	Catch-up and Review Lab = Paper due on lab project, presentations	
Dec. 7	Final Exam (non-cumulative) = Exam III - 11:00-1:00	

For Aravaipa and Mexico Field Trips – there will be no lecture – For Aravaipa we will leave at 10:00 AM and return Sunday, for Mexico Field Trip, we will leave early – snorkeling and common marine species