Biology 4212 FA

Biology of Fishes

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Fall 2014
Lecture: Monday, Wednesday, Friday: 12:30-1:30 p.m. (CB 3013)
Lab: Friday: 1:30-4:30 p.m. (CB 3013)

COURSE OUTLINE

This course is divided into lab and lecture, each worth 50% of the total grade. The lab grade is evaluated on the basis of:

- two major quizzes, worth 25% of the total grade
- one final laboratory examination worth 25% of the total grade

The lecture grade is evaluated with two written examinations covering a specific portion of the total course, each worth 25% of the total grade. The total grade is therefore composed of:

- lab 50% (2 I.D. quizzes 25%, lab final 25%)
- lecture 50% (midterm 25%, final 25%)

LECTURE SCHEDULE

Week 1	Introduction to classification of major groups Classification, methodology – e.g., cladistics I.D., Terms, Major Morphological Types
Week 2	How to I.D. a fish Taxonomy at the species level Field Trip I
Week 3	Ontario and Great Lakes Fauna Origins of the local fauna Field Trip II
Week 4	The Canadian and North American Fauna World's Freshwater Fauna Field Trip III
Week 5	Worlds Marine Fauna Lampreys and Hagfish Fish I.D.
Week 6	No Class – Thanksgiving Holiday Sea Lamprey in Great Lakes **Quiz I**

Week 7 **Midterm Lecture Examination**
Sharks, Rays, Skates I
Quiz II

Week 8 Sharks, Rays and Skates II
Taxonomy of Sharks and Chimaeras
Lampreys

Week 9 Evolution of the Bony Fish
Major groups of Bony Fish
Vital functions of the Bony Fish
(oxygen capture, osmoregulation)
Sharks

Week 10 Receptors for Life in Water
(brain, endocrines, vision)
Bony Fish
(hearing, lateral line, sound production)
Bony Fish
(air bladder, smell, taste)

Week 11 Bony Fish
(form, electricity, deception, mimicry)
Bony Fish
(defense and offense, food, aerial respiration, reproduction)
Bony Fish
(luminosity, colouration)

Week 12 Success of the Teleosts
Lobefins and Lungfishes
Term Lab Examination

READINGS

Period	Topic	Assigned Readings
Week 1	Classification	Preface M: Ch. 1 M: Ch. 5, p 65-67
Week 2	Taxonomy	H & M: p. 3, p. 10-12 M: Ch. 6
Week 3	Origin of the Faunas	H & M: p. 13-18 M & S: p. 1-6 M: Ch. 8
Week 4	Freshwater Zoogeography	M: Ch. 9, 10
Week 5	Freshwater Zoogeography	M: Ch. 7

Week 6	Marine Zoogeography	M: Ch. 11-14
Week 7	Lamprey & Hagfish	M: Ch. 5, p. 67-70
Week 8	Sharks, Rays Skates	M: Ch. 5, p. 70-74
Week 9	Bony Fish	M: Ch. 5, p. 74-98
Week 10	Bony Fish	M: Ch. 3, 2
Week 11	Bony Fish	M: Ch. 15, 16
Week 12	Bony Fish	M: Ch. 15, 16, Ch. 4, Ch. 5, p. 74-75

Readings:

H & M - Hartviksen, C.H. and W.T. Momot, 1989. *Fishes of the Thunder Bay Area of Ontario*, Wildwood Press.

M & S - Momot, W.T. and S. Stephenson, 1996. *Atlas of the Distribution of Fishes in the Canadian Tributaries of Western Lake Superior*, Lakehead University, Centre for Northern Studies.

M - Moyle, P.B., 1993. *Fish: An Enthusiast's Guide*. University of California Press.

LABS

Week 1 Identification, Terms, Major Morphological Types

Week 2 Field Trip I

Week 3 Field Trip II

Week 4 Field Trip III

Week 5 Fish Identification

Week 6 **Quiz I**

Week 7 **Quiz II**

Week 8 Lamprey

Week 9 Sharks

Week 10 No lab

Week 11 Bony Fish

Week 12 **Laboratory Examination**