**Fish Biology (ZOO 4454)**
Spring 2017

**Professor:** Joe Parkos; Department of Biological Sciences
Office (BBC): AC1 room 386 (phone: 305-919-6253)

**Section:**
B52 (BBC)
Tuesday 2-3:15; Location AC1 room 226A

U01 (MMC)
Thursday 2-3:15; Location: PC 443

**Office Hours:**
Tuesday 11:30 A.M.-1:30 P.M. [AC1 (BBC), room 386]
Thursday 11:30 A.M-1:30 P.M. [OE 148 (MMC)]

**Required Text:** Helfman, G.S., B.B. Collette, D. E. Facey, and B.W. Bowen. 2009. The Diversity of Fishes, 2nd Ed. Wiley-Blackwell.

| Week | Sec. B52 | Sec. U01 | Topic | Readings |
|---|---|---|---|---|
| 1 | Jan. 10 | Jan. 12 | Course orientation, history ichthyology | Chapter 1 |
| 2 | Jan. 17 | Jan. 19 | Systematics and diversification | Chapters 2, 11 |
| 3 | Jan. 24 | Jan. 26 | Form and external anatomy | Pages 33, 35-39 |
| 4 | Jan. 31 | Feb. 2 | Skeleton and muscles | Pages 23-35, 41, 44, 124-125 |
| 5 | Feb. 7 | Feb. 9 | Buoyancy and respiration | Pages 50-51, 57-66, 68-70 |
| 6 | Feb. 14 | Feb. 16 | Exam One | |
| 7 | Feb. 21 | Feb. 23 | Blood, circulation, homeostasis | Pages 45-48, Chapter 7 |
| 8 | Feb. 28 | Mar. 2 | Feeding, nutrition, excretion | Pages 52, 119-124, 126 |
| 9 | Mar. 7 | Mar. 9 | Growth and locomotion | Pages 111-119, 129, 159-161 |
| 10 | no class | no class | Spring Break | |
| 11 | Mar. 21 | Mar. 23 | Reproduction and life history | Pgs 52-54,130-136, 153-156, 511-522 |
| 12 | Mar. 28 | Mar. 30 | Sensory systems and behavior | Chapter 6, 21 |
| 13 | Apr. 4 | Apr. 6 | Exam Two | |
| 14 | Apr. 11 | Apr. 13 | Zoogeography | Chapter 16 |
| 15 | Apr. 18 | Apr. 20 | Conservation and management | Chapter 26 |
| 16 | Apr. 25 | Apr. 27 | Final Exam | |

**Purpose:** The purpose of this class is to provide an overview of the biology of fishes, along with a general appreciation of the great diversity of taxa in this group. To meet these goals, we will cover both marine and freshwater taxa with equal emphasis.

**Prerequisites:** BSC 1010 and BSC 1011 (General Biology I and II), PCB 3043 (Ecology)

**Student responsibilities:** You are expected to do the assigned reading, listen to the recorded lectures, turn in reflection questions at the start of class, participate in class discussions, prepare

and present an oral presentation providing an overview of the biology of an assigned family of fishes. Evidence of cheating on tests or plagiarism of materials for your oral presentation will be adjudicated following the FIU code of student conduct found in the Student Handbook that is available from the Current Students webpage (http://www.fiu.edu/current-students/).

**Grades:** Class grades will be based on your performance on tests, quizzes, and your oral presentation. There will be eight weeks of reflection questions (10%), eight weeks of quizzes (10%), two in-class written tests (20% each); and a comprehensive final exam (25%). Your oral presentation will account for the remaining 15%.

***Reflection questions*** (one from each online lecture with no questions due weeks 11, 14, 15): scored on effort scale (points for using material from lecture and/or textbook in answer). Reference text pages or online lecture where you found your information. If you use outside sources of information, reference them.
Scoring: 0 (question not answered), 1 (answer did not use information from course), 2 (answer used information from course)
***Vocabulary quizzes*** (5 family names and 5 questions from online lectures; 15-minutes class time max; no quizzes weeks 12, 14, 15): multiple choice, matching (sometimes on a diagram), fill-in-the-blank (family names only)
Scoring: One point for each correct answer for a total of 12 possible points per quiz.
***Exams*** (in-class time): labelling diagrams, multiple choice, fill-in-the-blank, short answer
Scoring: Points only awarded for correct answers to labels, fill-in-the-blank, and multiple choice questions. Half of all possible points awarded for partially correct short-answer questions.
***Final exam*** (cumulative)
Scoring:same as regular in-class exams.
***Oral presentations*** (weeks 14 and 15)
Each team of two students will be assigned a family of fishes found in Florida waters and give an oral presentation providing an overview of that family's (1) habitats, (2) distribution, (3) feeding ecology, (4) reproductive ecology, (5) life history (maturation, longevity), (6) human interactions, and (7) any unique adaptations, features, or place in evolutionary history. You can choose to focus on a subset of species from your assigned family. Will work in groups of two by a.) dividing up the first six topics any way you choose and collaborating on the seventh topic, b.) each team member uses half of the 14-minute presentation time to present their topics, and c.) each student evaluated based on their individual work for the presentation.

Scoring: Scored on scale of 0-1 (low), 2-3 (medium), 4-5 (high) for content, presentation style, and audience interaction. Content (**low** = did not cover all assigned topics, information inaccurate or not clear, neither theory nor literature used as support, content presented at too elementary or sophisticated a level; **medium** = incomplete details on some topics, some inaccuracies, some portions are too basic or sophisticated for audience, some reference to theory or literature; **high** = covered all topics in effective detail, information supported by references to theory or literature, accurate and complete explanation of concepts); Presentation style (**low** = poorly organized material, confusing or hard to read graphics, graphics and text with little or no connection to topic, unable to complete presentation within allotted time frame; **medium** = logical organization of ideas, most graphics readable, connection of some graphics to topic not clear, slightly over allotted time frame; **high** = well organized material, effective use of graphics, graphics support the points of the presentation, within allotted time frame); Audience Interaction (**low** = mumbling, little eye contact with audience, not able to answer audience questions; **medium** = good volume, some eye contact with audience, able to partially address audience questions; **high**

= maintained audience attention, clear enunciation and good volume, maintained eye contact with audience, gave clear and accurate answers to questions).

**Last date to drop with a DR grade:** March 20, 2017

If you miss a class for a legitimate, verifiable case of illness or an emergency, I will provide you with an opportunity to make-up any missed assignments and quizzes, but you must arrange this with me as soon as possible.

*Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and to honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.*