FW 473 DE – Fish Ecology

Section 400, 4 credits
Dept. of Fisheries & Wildlife, Oregon State University

Enforced Prereqs: ((BI 370 or BI 370H) and FW 315)

This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits. NOTE: For textbook accuracy, please always check the textbook list at the OSU Bookstore website (http://osubeaverstore.com/Academics/). Sample syllabi may not have the most up-to-date information.

Course Description: The goal of this course is to provide students with an overview of the main themes in fish ecology. This course is intended for upper-level undergraduate students with some formal academic background in fish biology and aquatic science, as well as students from other programs with strong interests or practical experience in the areas of ecology or marine science. Students will extract information from (1) a reading section, (2) a discussion section, and (3) a laboratory section. There will be no formal lectures associated with this course; rather the information that is usually transmitted to students via lectures will be synthesized by students from a critical review of the primary literature.

Each week, students will have assignments from each of the three sections. For the reading section, students will read a chapter of the course textbook, *Diversity of Fishes*, and 3 to 6 scientific articles related to the chapter. For the discussion section, students will read an additional 1 to 2 scientific articles to discuss with their classmates and instructor in an online forum. For the laboratory section, students will use computer-based exercises as a means of illustrating examples or performing basic research on fish ecology.

Grading:

Graded assignments are designed to help students gain familiarity and confidence in communicating scientific ideas in written format. All assignments will be turned in on Blackboard. All assignments will be available in the “Week by Week” tab of Blackboard in the folder labeled for the appropriate week.

Discussion Board (8) ...............20%
Laboratory Exercises (8) ........45%
Quizzes (4) .............................20%
Essay (1) .................................5% [draft & review], 10% [final]
Discussion Board
Students will be expected to post responses to the writing prompt provided by the instructor regarding the one to two scientific articles assigned weekly. Students will read the papers in the “Discussion Prep” section of Week 1 and post responses to these during Week 2 (i.e., there will be a one week time lag between the articles becoming available and students posting about these topics). The ideal contribution will discuss aspects of the paper(s) and comment on the posts of fellow students. Thus, posting ideas relatively early in the week will be essential for students to attain full credit. To facilitate this, an initial post is required each Friday and a comment on other students’ posts is required by the following Monday. Each week’s Discussion Board posts are worth 2.5% of the total course grade.

Quizzes
There will be four quizzes, posted beginning at the beginning of the week (an announcement will be made when each quiz is available). They will be based on material from the required reading (textbook and scientific articles). The quizzes will not tend to favor simple regurgitation of factual material, but rather will involve the assimilation of a considerable body of factual information. Each quiz is worth 5% of the total course grade.

Laboratory
Written laboratory assignments (details will be given in the laboratory folders) will be worth 45% of the final grade. The first 7 exercises are each worth 5%, the last exercise is worth 10%. Detailed instructions for each assignment is found in the “Week by Week” tab of Blackboard within the folder titled “Lab 1”, “Lab 2”, ... etc.

Essay
Each student will submit an original essay on a topic from the list at the end of the syllabus (or select a topic in consultation with the professor in charge of the course). Detailed requirements for the essay, including deadline for submission and marking scheme, are discussed with the list of topics. The essay will be worth 15% of the final grade. 5% of the grade will be for turning in a draft of the manuscript in advance and providing a peer review for another student in the course. 10% will be for the final, revised essay.

Note that there will be no final examination in this course.

Schedule:

Week 1: Introduction and Key Points
Week 2: Genes and Environment: Ontogeny and Development
Week 3: Social Behavior and Reproduction
Week 4: Behavioral Ecology
Week 5: Community Ecology
Week 6: Population Ecology
Week 7: Freshwater Species
Week 8: Marine Species
Week 9: Applications and Implications
Week 10: Synthesis and Summary
ESSAY OUTLINE AND REQUIREMENTS

Each student will submit an electronic copy of an original essay, on a topic to be selected from the attached list (or another topic approved in consultation with me). Only one student will be allowed to select any particular topic. The essay is to be double-spaced. It must be presented in the style and format of an Invited Editorial for the journal Environmental Biology of Fishes. Please consult a recent issue of that journal for examples and detailed features of style and format.

The essay is to provide students the opportunity to research a topic of interest in some depth. It is also to provide the opportunity for students to learn to use library research materials and sources (electronic and conventional printed publications) to gain knowledge of their selected topic. The essay is also an opportunity for students to develop skills in scientific writing.

Essays will be marked for both style and content, as a scientific manuscript. One-third of the total mark will be assigned for “style and content”. This includes spelling and grammatical errors, as well as the detailed requirements for the journal (form used for citation of references, etc.). Two-thirds of the mark for the essay will be assigned for “Scientific Content”. This includes both the factual material in the essay and the synthesis and interpretation of factual detail by the student. Students are encouraged to prepare preliminary drafts of their essays well in advance of the deadline for submission and to exchange drafts of their essays with several of their classmates for constructive criticisms and comments. Essays should not be less than five (5) nor more than twenty (20) pages in total length.

The essay must be original and produced by the student for this assignment. Students must abide by the Oregon State University policy on plagiarism as it relates to this assignment. For example, students are NOT to copy the essay from another source (printed or electronic), nor are they to pay any third party for research or creating the essay. If you have ANY questions concerning the preparation or presentation of the essay please consult with me.

Marking scheme:

<table>
<thead>
<tr>
<th>Component</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style &amp; format</td>
<td>3%</td>
</tr>
<tr>
<td>Scientific content</td>
<td>7%</td>
</tr>
<tr>
<td>Total mark</td>
<td>10%</td>
</tr>
</tbody>
</table>

NetTutor link
http://ecampus.oregonstate.edu/services/student-services/online-tutoring/

Exam & proctoring link:
http://ecampus.oregonstate.edu/services/proctoring/

Technical Help:
http://ecampus.oregonstate.edu/services/technical-help.htm?expand=yes

Link to Canvas login:
https://login.oregonstate.edu/cas/login?service=https%3A%2F%2Flogin.oregonstate.edu%2Fidp%2FAuthn%2FRemoteUser

This course is offered through Oregon State University Extended Campus. For more information, contact:
Web: ecampus.oregonstate.edu Email: ecampus@oregonstate.edu Tel: 800-667-1465
**Suggested Essay Topics**

Students can choose any topic they wish from this list, but only one student will be allowed to choose any particular topic (to avoid possible conflict for library references, etc.). Students may suggest any topic they wish for their essays, but if you wish to consider any topic not on this list for your essay please consult with the instructor for approval before you begin preparation of your essay.

- Bioluminescence in fishes
- Antifreeze in fishes
- Filter feeding fishes
- Weakly electric fishes
- Vision in fishes
- Magnetoreception in fishes
- Air breathing fishes
- Terrestrial adaptations in fishes
- Sex change in fishes
- Parental behaviour in fishes
- Learning and memory in fishes
- Pheromones in fishes
- Species flocks in fishes
- Adipose fins in fishes
- Locomotion in fishes
- Sound production by fishes
- Speciation in fishes
- Cave fishes
- The zebrafish *Danio rerio*
- Can a fish change history?
- Long-lived fishes
- Annual fishes
- Fish migrations
- Hearing in fishes
- Freshwater eels
- Living fossil fishes
- Desert fishes
- Trash fishes
- Exotic fishes
- Fish as invaders
- Fish brains
- Deep sea fishes
- Fish embryos
- Teeth in fishes

**Students with Disabilities**

Accommodations are collaborative efforts between students, faculty and Disability and Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.

**Plagiarism**

You are expected to submit your own work in all your assignments, postings to the discussion board, and other communications, and to clearly give credit to the work of others when you use it. Academic dishonesty will result in a grade of “F.”

- Link to Statement of Expectations for Student Conduct:  
  http://arcweb.sos.state.or.us/pages/rules/oars_500/oar_576/576_015.html
- Student Conduct Home: http://oregonstate.edu/studentconduct/
Student Evaluation of Teaching:

We encourage you to engage in the course evaluation process each term – online, of course. The evaluation form will be available toward the end of each term, and you will be sent instructions through ONID. You will login to “Online Services/MyOSU” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.