

**FW 301 Ichthyology Laboratory  
Course Outline - Spring 2009**

**Lab Time and Place**

Monday or Wednesday    2:00-4:40 pm    107 Wagar

**Instructors**

Dr. Brett Johnson	233 Wagar	<a href="mailto:brett@cnr.colostate.edu">brett@cnr.colostate.edu</a>	970-491-5002
Brian Wolff	208 Wagar	<a href="mailto:brian.wolff@colostate.edu">brian.wolff@colostate.edu</a>	970-491-2749

**Office Hours**

Dr. Johnson	M, W 11-11:45, and by appointment
Brian Wolff	T, Th 11-11:45, and by appointment

**Required Materials**

- How to Know the Freshwater Fishes, by S. Eddy and J. C. Underhill. 1978. Wm. C. Brown Company Publishers, Dubuque, IA.
- Handouts will be posted each week on RamCT; you are responsible for obtaining them in advance and bringing them to lab and you will find it very useful to do so.
- Basic materials for handling, measuring, and dissecting fish – scalpel, scissors, probes, and a ruler. Rubber gloves and a hand towel may be useful.

**Grading Policies**

There will be a short quiz each week covering the previous week's material or current assigned reading (you can drop your worst quiz grade). Correct spelling is essential and points will be deducted for incorrect spelling. You are required to attend the weekend field trip. Points will be apportioned according to the following percentages:

Weekly quizzes & assignments	20%
Weekend field trip	10%
Attendance, attitude	10%
Exam I	30%
<u>Exam II</u>	<u>30%</u>
Total	100%

**No makeup exams, quizzes or field trips will be given.** If you must miss one of these due to sickness or personal tragedy, Mr. Brian Wolff must be consulted **before** the event begins--call, and leave a message if necessary! Otherwise, you will receive a zero for the event. You must take quizzes and exams in the lab session for which you are registered.

No academic dishonesty will be tolerated: no resources are allowed during quizzes and exams, you may not consult with or look at the work of others - keep your eyes on your own work! Our policy is simple: if you cheat you fail.

Extra credit: Prepare a handout and give a five-minute presentation to the class on a "Fish of the Week" (selected from the list) to substitute for one lab quiz grade.

**Course Goals**

1. Learn basic external and internal anatomy of fish, and understand how fish biologists use characters to identify and classify fish.
2. Learn to identify on sight, and know the common and scientific names of all fishes of Colorado and all the families of U.S. freshwater fishes. Be able to identify other North American freshwater fishes (750+ species) with the aid of scientific keys.
3. Learn about appropriate methods for assessing ichthyofaunal diversity, and how to curate and archive voucher specimens for long-term scientific use.

**Prerequisites**

A beginning course in basic biology (BY103 or Z110) and FW300 or concurrent registration.

## How to do well in Ichthyology Laboratory

Attend class regularly--quizzes and exams stress material presented in class. Review or even re-copy your notes after each lab – it is an effective strategy for learning. Develop flashcards to review terminology and nomenclature. Use the resources on the web to assist with your learning.

## Course Web Page <http://www.cnr.colostate.edu/~brett/FW301.html>

The FW301 web page is more than an online syllabus. Additional course materials will be posted on the site, as well as educational resources and links to help you study and learn.

### Laboratory Schedule - Spring 2009

Week	Topic
Jan 19-23	No class
Jan 26-30	Introduction to fish diversity
Feb 2-6	External anatomy of fishes
Feb 9-13	Internal anatomy of fishes (dissection)
Feb 16-20	Agnatha through Clupeiformes
Feb 23-27	Cyprinidae
March 2-6	Optional review session
<b>March 9-13</b>	<b>Midterm exam</b>
<i>Mar 16-20</i>	<i>No class, Spring Break</i>
Mar 23-27	Catostomidae through Osmeridae (March 23 = last day to drop)
Mar 30-Apr 3	Fishes and their ecosystems
<b>TBD</b>	<b>Field trip to Ocean Journey (approximately 6 hrs round-trip)</b>
Apr 6-10	Salmonidae through Scorpaeniformes
Apr 13-17	Perciformes
Apr 20-24	Early life history of fishes
Apr 27- May 1	In-class sampling field trip
<b>May 4-8</b>	<b>Final exam 2:00-4:40 pm</b>

### LABORATORY RULES

1. ABSOLUTELY NO SMOKING is allowed inside the lab, or where specimens are stored. (Smoking is prohibited in all areas of the Wagar Building). The alcohol in which specimens are preserved is flammable.
2. PLEASE BE CAREFUL WITH THE PRESERVED SPECIMENS!  
Many of the specimens were difficult to obtain and would be hard to replace. If you damage key characteristics other students will have difficulty finding them. Handle the specimens with care, being cautious not to rip fins or other structures, especially with probes.
3. ALWAYS RETURN FISH TO THE CONTAINER FROM WHICH THEY CAME!  
It takes many hours to sort the collection for your use. Please do not mix the fish up. If you are in doubt about the identity of a fish, please ask us!
4. WORK WITH ONLY A FEW FISH AT A TIME.  
Specimens dry out quickly, so put a little water in your pan and cover the specimens with wet paper towels while you are working with them. You may want to compare several species, but do not spread too many out on your tray. This way the specimens are not damaged and you can easily return each to the proper container.