



- A = 90% or more of total points
- B = Between 80 and 89% of the total points
- C = Between 70 and 79% of the total points
- D = Between 60 and 69% of the total points
- F = Less than 60% of the total points

No makeup exams or exercises will be given. If you miss an exam I must approve a valid excuse from you before the exam begins or you will get a zero. You may call my office (491-5657) in an emergency and leave a message on my answering machine. All assignments are due at the start of the class period on the specified due date. Assignments turned in after the start of the class period will be penalized by 10% per day (including weekends) until they are worth 50% of their original value.

V. Office Hours

Chris Myrick: Monday and Wednesday 11:00 a.m. – 11:50 a.m., or by appointment
Rachel Jones: Monday and Wednesday 9:00 – 9:50 a.m., or by appointment

VI. Course Goals

This course has 3 primary goals. First, students will be introduced to basic concepts of fisheries biology that will be developed in greater detail in subsequent classes (e.g., FW400, FW401, FW402, FW405). Second, students will be exposed to an array of fisheries biology methodologies (both theoretical and practical) including study design, sampling techniques, and report writing. Finally, through interactions with representative speakers from the university, government agencies and private industry, students will gain a perspective of available job opportunities and possible career paths within the fisheries field.

VII. Prerequisites

None

VIII. CPR/First Aid Certification

All students are strongly encouraged to have current CPR/First Aid Certification by the end of the semester. If you already have certification, show your current card to the instructor. If you are not yet certified, the Hartshorn Health Service offers [CPR/First Aid courses](#) during the semester); equivalent first aid courses are offered by the [local Red Cross chapter](#). Getting this certificate will get you an increase of 5% on your final exam score (e.g., if you get 80% on your final, and you have shown me the certificate, your final exam score will be increased to 85%).

IX. AFS Meeting Attendance

One of the most important professional development activities that fisheries biologists participate in is the attendance of professional society meetings. The premier professional society for fisheries biologists in the United States is the American Fisheries Society, which has a number of different sections (e.g., Student, Education, Fish Culture, Physiology), divisions (Western, Southern, etc.), and chapters (Colorado-Wyoming, California-Nevada, etc.). Although there are no state chapter or division meetings scheduled during the course, there is an active student subunit here at CSU. The Student Subunit has been very active over the past 18.5 years and brings very good speakers to their bimonthly meetings. All students are required to attend **at least 2** meetings where speakers are giving presentations. You are to write a 1-page summary (typed, double spaced) of each presentation to be turned in to the TA by the last



week of the semester. Students are *encouraged* to attend as many AFS meetings as possible and to participate in their activities because of the benefits of being involved with your professional society. There may also be opportunities to attend the FWCB Departmental Seminar to listen to presentations by graduate students or professionals on fisheries issues; these may be used as alternatives to the AFS Student Chapter meetings (check with course staff first). You may visit the Student Chapter website at <http://warnercnr.colostate.edu/afs-home>

The Fish, Wildlife, and Conservation Department seminars are listed here:
<http://warnercnr.colostate.edu/fwcb-news-and-events/department-seminars>

*If you have a valid reason for not being able to attend any meetings, please see the instructor during the **first three weeks** of the course for an alternate credit assignment.*

X. Mandatory Saturday Field Trips

There are two **mandatory** Saturday field trips. The first field trip (Lake Practical Day) will be a day-long team sampling effort on College Lake on Saturday, September 21st. The second field trip (the Stream Practical Day) will be a full sampling effort on the Poudre River on Saturday, October 12th. **All students are expected to attend for the duration of the field trips**...if you normally work on weekends, ask for the day off, or find someone to cover for you (*besides the educational value, these field trips are a lot of fun!*)

XI. Course Canvas Page

The course Canvas page is your source for supplemental course files (e.g., extra readings, copies of lab data, etc.) and also has links to useful sites including the special Library Fish & Fisheries Research Page. Be sure to check the home page regularly for new material.

XI. Academic Integrity⁵

We take academic integrity seriously. At minimum, academic integrity means that no one will use another person's work as their own. The CSU writing center defines plagiarism this way:

Plagiarism is the unauthorized or unacknowledged use of another person's academic or scholarly work. Done on purpose, it is cheating. Done accidentally, it is no less serious. Regardless of how it occurs, plagiarism is a theft of intellectual property and a violation of an ironclad rule demanding "credit be given where credit is due."

Source: (Writing Guides: Understanding Plagiarism.

<http://writing.colostate.edu/guides/researchsources/understandingplagiarism/plagiarismoverview.cfm>.

If you plagiarize in your work you could lose credit for the plagiarized work, fail the assignment, or fail the course. Plagiarism could result in expulsion from the university. Each instance of plagiarism, classroom cheating, and other types of academic dishonesty will be addressed according to the principles published in the CSU General Catalog (see page seven, column two:

<http://www.catalog.colostate.edu/FrontPDF/1.6POLICIES1112f.pdf>).

Of course, academic integrity means more than just avoiding plagiarism. It also involves doing your

⁵ Dr. Greg Dickinson, CSU, developed the Academic Integrity statement used here and gives permission for other CSU instructors to use parts or all of this statement in their own syllabi.



own reading and studying. It includes regular class attendance, careful consideration of all class materials, and engagement with the class and your fellow students. Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity, and the personal and social integrity of which academic integrity is an integral part, is so central to our mission as students, teachers, scholars, and citizens, we will ask to you sign the CSU Honor Pledge as part of completing the term paper project. **While you will not be required to sign the honor pledge, we will ask each of you to write and sign the following statement on your lab reports and term paper.**

"I have not given, received, or used any unauthorized assistance."

In-Class Behavior

Dr. Myrick, the guest lecturers, and his teaching assistant work hard to provide you with a high-quality educational experience. In-class disturbances and distractions, including texting, ringing cell phones, etc., detract from that experience and we consider them highly disruptive and disrespectful. Therefore, you are asked to **turn off** your cell phone before the start of any lecture or laboratory session. If your phone does ring during class, you will be asked to leave the room for the remainder of that class period. Any other in-class behavior that is deemed unacceptable or distracting to your fellow students will also result in your being asked to leave the class for the remainder of that period.

Copyrighted Course Materials

Please do not share material from this course in online, print, or other media. Course material is the property of the instructor who developed the course. Materials authored by third parties and used in the course are also subject to copyright protections. Posting course materials on external sites (commercial or not) violates both copyright law and the CSU Student Conduct Code. Students who share course content without the instructor's express permission, including with online sites that post materials to sell to other students, could face appropriate disciplinary or legal action.

XIII. Course Schedule (Lecture and Laboratory – subject to modification)

| Date | Lecture topic | Lab topic | Readings | Module |
|--------|---|---|---|--|
| 26-Aug | NO CLASS - SEE CANVAS FOR ASSIGNMENT | | | |
| 28-Aug | Introduction - What is fisheries biology? | | Ch. 1 | |
| 29-Aug | | <ul style="list-style-type: none"> • Sampling strategies - Simple Sampling Exercise • MS-Excel Introduction (self-paced exercise) | Ch. 1, Ch.2 (concentration 15 - 30) | |
| 2-Sep | Labor Day - No class | | | |
| 4-Sep | Safety in Fisheries Work | | Ch. 3 (all) Also read AFS Fisheries Safety Handbook (on FW204 Canvas site) | Fishes: identification and measurement |
| 5-Sep | | • Lab #1: Morphology, and identification of local fishes (Location TBD) | | |



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|--------|---|--|--|---|
| 9-Sep | Invasive Species - a growing threat to US fisheries | | Invasive Species Definitions; CPW information on invasive species | |
| 11-Sep | Fish measurement | | Ch. 14 | |
| 12-Sep | | • Being a Colorado Fisheries Biologist - T. Swarr, CPW (132 Wagar) | no reading | |
| 16-Sep | Lakes & Reservoirs I: physical characteristics & processes | | Ch. 4 (pp. 104 - 108; 126 - 131) | |
| 18-Sep | Lakes & Reservoirs II: sampling fishes & plankton | | Ch. 6; Ch. 7; Ch. 9 | |
| 19-Sep | | <ul style="list-style-type: none"> • Handling lake sampling gear - net repair/deployment - boating safety/preparation - field gear decontamination • Preparation for Lake Practical Day | Ch. 6 (pp. 223-240; 242-247; 251-253) Ch. 7 (pp. 267-272; 283-293; 297-300) | |
| 21-Sep | Lake Practical Day (College Lake) Handling gill nets, trap nets, seines Basic boat handling Gear decontamination And more... | | | |
| 23-Sep | Entry of lake data (CLL - MSNR Bldg.) | | Review Ch. 2 (pp. 15 - 30) | Aquatic Ecosystems characteristics & sampling |
| 25-Sep | Group discussion and analysis of College Lake Data and discussion of manuscript #1 | | Scientific article (available on Canvas 9/18) | |
| 26-Sep | | <ul style="list-style-type: none"> • Lecture - Aging & Growth • Lab #2: Fish age and growth - Calculations - Aging fish using scales and otoliths | Ch. 15 | |
| 30-Sep | Using length, weight, and structural data | | Ch. 15 | |
| 2-Oct | Water chemistry basics for fisheries biologists | | Ch. 5 (pp. 163 - 170) | |
| 3-Oct | | Fishes: tagging & marking | Ch. 11 (pp. 521-539) | |
| 7-Oct | Streams: physical sampling | | Ch. 4 (pp. 101-015; 108-112; 117-126; 129-143) | |
| 9-Oct | Streams: biological sampling & introduction to aquatic invertebrates | | Ch. 8 | |



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| 10-Oct | | <ul style="list-style-type: none"> • Handling stream sampling gear - introduction to backpack shocking (equipment/safety) - familiarization w/sampling gear | Ch. 8 | |
| 12-Oct | Stream Practical Day (MANDATORY) Backpack shocking Stream fish ID And more... | | | |
| 14-Oct | Entry of stream data (CLL - MSNR Building) | | Review Ch. 2 (pp. 15 - 30) | |
| 16-Oct | Electrofishing in fisheries | | Ch. 8 Reread AFS Fisheries Safety Handbook | |
| 17-Oct | | <ul style="list-style-type: none"> • Lab #3: Common shiner population estimation (FFL) • Lab #4: Start fathead minnow growth experiment (FFL) | TBD | |
| 21-Oct | Fishes: handling & transport | | Ch. 5 (pp. 163 - 170) | |
| 23-Oct | Fish culture: introduction; role of fish culture in fisheries management | | Heidinger 1999 (on course Canvas site) or TBD | |
| 24-Oct | | Lab #5: Stream Habitat Measurement - field trip | Ch. 8 | |
| 28-Oct | MIDTERM - COVERS LECTURES + READINGS AND CONCEPTS FROM LABS | | | |
| 30-Oct | Fish culture II: design of culture systems & common culture techniques | | Stickney 2009 (on course Canvas site) | |
| 31-Oct | | Field trip to CPW Bellvue Hatchery, Laporte, CO (meet on N side of Wagar at 2:00 PM) - pending confirmation | | |
| 4-Nov | Introduction to fish physiology | | No reading | Aquaculture |
| 6-Nov | Roles of hatcheries in fisheries management in CO - Brandon White, Asst. Chief of Hatcheries, CPW. | | No reading | |
| 7-Nov | | <ul style="list-style-type: none"> Lab #6: Introduction to basic fish culture plumbing (FFL) Lab #4: End of growth experiment | See Canvas | |
| 11-Nov | Fish Physiology II | | No reading | |
| 13-Nov | Fish Physiology application: fish passage | | | Current issues in Fisheries Biology |
| 14-Nov | | Lab #7: Creel census - design and application | | |
| 18-Nov | TBD | | | |



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| 20-Nov | Climate change impacts on fisheries (lecture & discussion) | | Roessig et al. 2004 (abstract) Ficke et al. 2007 (abstract) (both on course Canvas site) |
| 21-Nov | | Managing instream connectivity (Myrick) Practical stream restoration (Kondratieff) | |
| Thanksgiving Break (11/23-12/1) | | | |
| 2-Dec | TBD | | TBD |
| 4-Dec | Managing Gold Medal Fisheries in Colorado (Kendall Bakich - pending) | | TBD |
| 5-Dec | | Sampling with toxicants - rotenone projects Ben Felt and Eric Gardunio - CPW Lab #8: Planning a reclamation project | |
| 9-Dec | Warm lakes and shallow rivers - life as an eastern plains CPW biologist: Mandi Brandt (CPW - pending) | | Management summaries for N. Sterling & Jumbo Reservoirs. |
| 11-Dec | Wrap-up day (if necessary) | | |
| 12-Dec | | Fact Sheet Ignite presentations (107 Wagar) | |
| 17-Dec | Final Exam - Comprehensive (6:20- 8:20 PM) | | |