ICHTHYOLOGY (FISH / BIOL 427) Class Schedule - Spring 2002

( http://www.sfos.uaf.edu/ - see 'Academic Course Websites' )

Note - exact lecture and lab schedule may be somewhat approximate, but assignment deadlines are not.

January
21 - Alaska Civil Rights Day (no class).
23 - Lecture cancelled (no class): apologies (due to past commitments beyond control of instructor).
   - Lab - Cancelled (no lab): apologies (due to past commitments beyond control of instructor).
28 - Agnathan Fishes (Superclass Agnatha) - Lampreys and Hagfish.
30 - General Lamprey Life-History and Biology.
   - Lab - Background and Instruction in Paper Review and Writing, and in Oral Presentations. Resource and Fish Information for both. Concerns, Questions, and Answer Session. Discussion of any other 'Issues'.
   - In-lab assignment (1% of total grade): brief written list of 'criteria' and resources for effective review and writing of papers, and for good oral presentations. Assignment likely to be based on an overview synthetic question.

February
1 - 'Ancient' Fishes.
4 - Grade Chondrichthyes (Chondrichthyan Fishes) - Sharks, Rays, Skates, and Ratfish.
6 - Generalized Shark Life-History, Feeding, and Attacks.
   - In-lab assignment (1% of total grade): construction of a key for species identification.
8 - Subdivisions Clupeomorpha, Elopomorpha, and Osteoglossomorpha - Eels and Herring (also Bonefishes, Bony-tongues, and Tarpon).
11 - Superorder Protacanthopterygii (Protacanthopterygian Fishes) - Pike, Salmonids, and Smells.
13 - General Salmonid Life-History
   - Lab - Major Fish Taxonomic Groups and Overall Systematics. Introduction to, and some background for, Phylogenetic Classification and Taxonomy in Fishes. Introduction to, and associated use of, Fish Osteology.
   - In-lab assignment (1% of total grade): construction of a "phylogeny".
15 - Superorder Ostariophysi (Ostariophysid Fishes).
18 - Series Perciformorph (Perciformorph Fishes).
20 - Skin - Bioluminescence, Colo(u)ration, Integument, and Scales in Fishes.
   - Lab - What is a Species? Introduction to Evolution, Speciation, and Evolutionary Ecology in Fishes.
   - In-lab assignment (1% of total grade): assessment / analysis of a 'new species' or 'species-complex'.
22 - Physiology - Respiration, Blood, and Circulation in Fishes.
25 - Physiology - Buoyancy, Osmoregulation, and Thermoregulation in Fishes.
   * Individual written papers one due (10% of total grade).
27 - Senses - Vision in Fishes.
   - Lab - Superclass Agnatha (Agnathan fishes) - Lampreys and Hagfish.
   - In-lab assignment (1% of total grade): overview synthetic question for brief written essay answer.

March
1 - Senses - Chemoreception, Electoreception, and Sound Detection / Generation in Fishes.
4 - Feeding - Adaptations and Patterns in Fishes.
6 - Feeding - Energetics, Growth, Longevity, and (more) Physiology in Fishes.
   • LAB - Grade Chondrichthyes (Chondrichthyan fishes) - Sharks, Rays, Skates, and Ratfish.
     • in-lab assignment (1% of total grade): overview synthetic question for brief written essay answer.

8 - Reproduction - Sex Determination and Its Evolution in Fishes.
11 - Reproduction - Mechanisms and Modes in Fishes.
13 - Reproduction - Strategies in Fishes.
   * LAB - individual oral presentations one (4% of total grade).

15 - Reproduction - Other (Fishes).
18 - Spring Break (no class).
20 - Spring Break (no class and no lab).
22 - Spring Break (no class).
25 - Ecology - General Phenomena (in Fishes).
27 - Ecology - Early Life-Histories and Larvae (in Fishes)
   • LAB - Superorder Protacanthopterygii (Protacanthopterygian fishes) - Pike, Salmonids, & Smelts.
     • in-lab assignment (1% of total grade): overview synthetic question for brief written essay answer.

   > Discussion of graded individual oral presentations one and the comments for them.

29 - Ecology - Migrations in Fishes.

April
1 - Ecology - Other (Fishes).
3 - Ecology / Evolution - Special Habitats and Adaptations in Fishes.
   • LAB - Superorder Ostariophysi (Ostariophysid Fishes).
     • in-lab assignment (1% of total grade): overview synthetic question for brief written essay answer.

5 - Evolution - General Genetic and Morphometric Diversity in Fishes.
8 - Evolution - General Phenomena and Speciation in Fishes.
10 - Evolution - Specific Examples and Studies of Fishes.
   • LAB - Series Percomorpha (Percamorph Fishes).
     • in-lab assignment (1% of total grade): overview synthetic question for brief written essay answer.

12 - Evolution - Unisexual Fishes, and General Hybridization in Fishes.
15 - Zoogeography - (Fishes in) Freshwater Environments.
   * Individual written papers two due (20% of total grade).
17 - Zoogeography - (Fishes in) Marine Environments.
   • LAB - Fishes of Alaska (with some attention to more common fish groups, and to representative Alaskan examples of higher taxonomic groups of fish species not yet covered in past labs due to time constraints).
     • in-lab assignment (1% of total grade): identification by keys of some families, genera, and species.

   > Discussion of, and examples for, lab exam (March 24th). Concerns, questions, and answers session.

19 - Zoogeography - (Fishes in) Alaska, Arctic, and Pacific Northwest.
22 - Conservation Biology - General for Fish.
   > Return and discuss graded individual written papers two and the comments on them.
24 - Conservation Biology - Specific Examples, Issues, and Problems for Fish.
   * LAB - lab exam (15% of total grade).
26 - All Campus Day (no class).
29 - Freshwater Fishes of Alaska - Non-salmonid Fishes.

May
1 - Freshwater Fishes of Alaska - Salmonid Fishes.
   * LAB (10% of total grade) - group / class symposium (4%), with individual oral presentations two (6%).

3 - Marine Fishes of Alaska.
6 > Return and discussion of lab exam, and of individual oral presentations two and the group / class symposium. Final questions for, preparatory discussion of, and examples for final lecture exam. Concerns, questions, and answers session.

10 * Lecture exam: (30% of total grade).
ICHTHYOLOGY (FISH / BIOL 427)

Grading Outline I - Spring 2002

(available at http://www.sfos.uaf.edu/ - see ‘Academic Course Websites’)

Grade Breakdown

lecture = 3 credits (75% of total grade)
laboratory = 1 credit (25% of total grade)

Assignments and Examinations:

two written exams (45% of total grade):
- W course = ‘written intensive’. Writing forms majority of course examination and grading, as per UAF criteria for written component posted at http://www.uaf.edu/corerev/guidelines.htm.
  1) lecture exam (30% of total grade).
  2) lab exam (15% of total grade).

two written papers (30% of total grade):
- W course = written intensive. Two written papers meet UAF written component criteria posted at http://www.uaf.edu/corerev/guidelines.htm. Both written papers are part of lecture grade.
  3) written paper one (10% of total grade).
    - individual detailed critique and examination of a specific primary literature paper and its citations.
  4) written paper two (20% of total grade).
    - individual general critique and synthesis of a subject area, species, or topic through broader review of several primary literature papers.
      - each written paper two must be independent, yet also be a coherent component of an overall group focus or theme topic collectively decided upon and organized by the class.
      - basically, each individual written paper two and oral presentation two should be composed of different aspects (eg. species or topics) within an overall group subject (see oral presentation and group seminar headings below).

two individual oral presentations, second given within overall group/class format (10% of total grade):
- O course = ‘oral communication intensive’. Two individual oral presentations meet individual component of UAF criteria for oral communication component posted at http://www.uaf.edu/corerev/guidelines.htm. Both individual oral presentations are part of lecture grade.
  5) oral presentation one (4% of total grade).
    - individual oral presentation based on written paper one.
  6) oral presentation two (6% of total grade).
    - individual oral presentation based on written paper two, but within an overall group (class) seminar.
      - each individual written paper two and oral presentation two must be independent, yet also be a coherent component, of an overall group focus or theme topic collectively decided upon and organized by the class.
      - basically, each individual written paper two and oral presentation two should be composed of different aspects (eg. species or topics) within an overall group subject (see written papers heading above and group seminar heading below).

one group seminar development, organization, and operation (5% of total grade):
- O course = ‘oral communication intensive’. The group seminar organization of oral presentations meets group oral communication component of UAF criteria posted at http://www.uaf.edu/corerev/guidelines.htm. The group seminar is part of the lecture grade.
(7) group seminar (5% of total grade).
- individual oral presentation two of written paper two occurs within an overall group (class) seminar.
  - individual written paper and oral presentation two must be independent, yet also be a coherent component, of an overall group focus or theme collectively decided upon and organized by the class (see written paper and oral presentation headings above).
  - basically, each individual paper two and presentation two should be composed of different aspects (eg. species / topics) within an overall group subject.

ten in-lab written assignments (10% of total grade):
- W course = 'written intensive'. Writing forms majority of course examination and grading, as per UAF criteria for written component posted at http://www.uaf.edu/corerev/guidelines.htm. The in-lab assignments are part of the lab grade.
- O course = 'oral communication intensive'. The suggested small group format and inter-group communication for the in-lab assignment further meets the group oral communication component of UAF criteria posted at http://www.uaf.edu/corerev/guidelines.htm. The in-lab assignments are part of the lab grade.

(8) one in-lab assignment per ten teaching labs (1% of total grade each).
- teaching labs are those in which presentations or examinations do not otherwise occur. All in-lab assignments are do-able and to be fully completed and handed in by end of each lab.
  - in-lab assignments are best done collectively in small groups, with only one written answer sheet needing to be submitted per such group. These small groups will be decided by the class, and need not be consistent for each in-lab assignment.
  - communication between everyone and all the small groups in discussing the in-lab materials and in lab assignments is strongly encouraged, as are questions to and discussions with the instructor and TA.
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Grading Outline II - Spring 2002

(available at http://www.sfos.uaf.edu/ - see ‘Academic Course Websites’)

Grade Determination

lecture = 3 credits (75% of total grade)
laboratory = 1 credit (25% of total grade)

Assignments and Examinations:

(1) lecture exam (30% of total grade) - May 10th, 2002 (10\textsuperscript{15} to 12\textsuperscript{15}).
- will receive instruction and materials to assist with preparation (see class schedule).
- based only on lecture material taught for the entire term.
- one written exam approximately two hours long.
  - several short written answers to questions about specific content.
  - ‘longer’ written paragraph or ‘mini-essay’ type answers to questions requiring
    interpretation, organization, and synthesis of taught information and knowledge.
- graded by instructor and/or TA, and available from instructor or on his office door by mark
  submission deadline.
  - all answers must be in ink, or no discussion of the grade may take place afterward.

(2) laboratory exam (15% of total grade) - April 24th, 2002.
- will receive instruction and materials to assist with preparation (see class schedule).
- based only on laboratory material taught in the ten teaching labs for the entire term.
- two individual oral presentations and group / class symposium will not be re-examined.
- one written exam approximately one to two hours long.
  - will be utilization of material learned from / summarized by in-class lab assignments.
- graded with comments from instructor and/or TA, and returned by May 6th, 2002. A brief
  discussion will take place at that time.
  - all answers must be in ink, or no discussion of the grade may take place afterward.

(3 - 4) two written papers (30% of total grade) - February 25th and April 15th, 2002.
- will receive instruction and materials to assist with preparation (see class schedule).
  - both papers must cite literature and references appropriately, and must properly use
    and spell scientific names properly. Precise guidance for citing literature, species,
    and taxonomy will be part of the instruction and preparatory materials.
  - reference use guideline - written paper one should properly cite and use
    approximately five appropriate primary scientific journal literature articles.
  - reference use guideline - written paper two should properly cite and use
    approximately ten appropriate primary scientific journal literature articles.
- must both be based on scientific literature published in primary journals.
- both written papers should be approximately five to ten typed pages
  - both papers need not be typed, but if handwritten should be equivalent in length and
    very legible.
  - any handwritten papers must be in ink, or no discussion of the grade may take place afterward.
  - both papers must be at least 1.5 (or 2 = double) line spaced, regardless of
being typed or handwritten.

- **both** written papers must be about FISH, not any other aquatic or taxonomic group(s).
- **both** written papers must be on fish BIOLOGY, not fisheries, management, etc.
  - if these topic specifications are still unclear, please see instructor or TA before beginning written paper. You are responsible for choosing an appropriate topic, but this can be discussed / assisted by the instructor and/or TA.
- **both** written papers will be independently graded by instructor and/or TA with grade and comments largely based on content, proper format (introduction, main ideas and points, and conclusions), ideas, understanding, organization, and appropriateness of subject.
  - **both** written papers will then be further independently graded, but with less emphasis, based on tone, word choice, sentence structure, grammar, punctuation, and spelling.
- **both** written papers must be handed in on time at beginning of lecture that day to enable instructor to meet deadlines for grading, comments and oral presentations, and also for his potential feedback and re-writes.
  - will deduct one letter grade for each lecture (2 or 3 days) late in the case of **both** written papers.
- if instructed by written comments on either written paper, then student must immediately schedule an appointment before the next lecture session (ie. in two days). This is for assistance and instruction with the two written papers and to help prevent similar problems with the two oral presentations associated with each written paper.
  - if necessary, this assistance / instruction could eventually require a re-write of either written paper.
  - a re-write of either written paper would be re-evaluated, but not re-graded (also see overall policy on re-grading at end of this document).

(3) written paper one (10% of total grade) - due February 25th, 2002.

- must have complete photocopy of primary literature journal paper that was reviewed (including its full reference etc. sections) attached to submission of written paper one.
- independently graded with comments from instructor and/or TA, and returned by March 4th, 2002. A brief discussion to facilitate feedback, understanding, and improvement will take place at that time.

(4) written paper two (20% of total grade) - due April 15th, 2002.

- each written paper two must be independent, yet also be a coherent component, of an overall group focus or theme topic collectively decided upon and organized by the class.
  - basically, each individual written paper two and oral presentation two should be composed of different aspects (eg. species or topics) within an overall group subject (see oral presentation and group seminar headings below).
- independently graded with comments from instructor and/or TA, and returned by April 22nd, 2002. A brief discussion to facilitate feedback, understanding, and improvement will take place at that time.

(5 - 6) two individual oral presentations (10% of total grade) - March 13th and May 1st, 2002.

- will receive instruction and materials to assist with preparation (see class schedule).
- **both** oral presentations are individual efforts and preparations, and the resulting talks should be approximately five to ten minutes each per person.
- each oral presentation will be followed by a brief 'question / answer' period by class and instructor / TA.
- **both** oral presentations will be independently graded with comments based on proper format (introduction, main ideas and points, and conclusions), effective speaking, and appropriate development and use of visual aids.
  - visual aids can be as simple as overheads as long as appropriate, useful, and interpretable
- **both** oral presentations will then be further independently graded with comments based on clarity, 'mastery' of subject material, organization, synthesis, and understanding.

(5) oral presentation one (4% of 10% total grade for two oral presentations) - March 13th, 2002.
• graded by March 27th 2002 with comments only by instructor and teaching assistant. A brief discussion to facilitate feedback, understanding, and improvement will take place at that time.

• if instructed by professor, TA, or through written comments for oral presentation one, then student must immediately schedule an appointment before the next lecture session (ie. in two days). This is for assistance and instruction with the oral presentations, and to help prevent similar problems with oral presentation two.

  • if necessary, assistance / instruction could require a brief re-presentation of oral presentation one to only the instructor, TA, and maybe that student’s selected classmates.

  • a re-presentation of oral presentation one would be re-evaluated, but not re-graded (also see overall policy on re-grading at end of this document).

(6) oral presentation two (6% of 10% total grade for two oral presentations) - May 1st, 2002.

• graded by May 6th 2002 with comments by class, and by instructor and teaching assistant. A brief discussion will take place at that time.

• each person in class will be provided with ‘anonymous’ individual score sheets for evaluations of every oral presentation two which will be summarized and used in grading. These class evaluations will be summarized and will form an important part of the grade for oral presentation two, within the context of the grades from the instructor and TA.

(7) one group seminar development/organization/operation (5% of total grade) - May 1st, 2002.

• will receive instruction and materials to assist with preparation (see class schedule).

• graded by May 6th 2002 with comments by class, and by instructor and teaching assistant. A brief discussion will take place in the lecture at that time.

• each person in class will be provided with ‘anonymous’ individual score sheets for evaluations of every other class member’s contribution in terms of preparation, work, and participation. These class evaluations will be summarized and will form an important part of the grade for oral presentation two, within the context of the grades from the instructor and TA.

  • the same criteria will form the grade from the instructor and TA.

(8) ten in-lab written assignments (10% of total grade).

• will receive instruction and materials to assist with preparation (see class schedule).

• each written in-lab assignment is due at the end of its lab period (see class schedule). The emphasis is on writing, but diagrams and drawings where necessary, or for clarity / explanation, are very suitable and encouraged.

  • each written in-lab assignment is to present a ‘correct’ answer in a coherent and organized fashion that covers and demonstrates understanding of each lab’s materials.

  • each hand-written in-lab assignment must be at least 1.5 (or 2 = double) line spaced, and it must be very legible.

  • all answers must be in ink, or no discussion of the grade may take place afterward.

• in-lab assignments are to be done collectively in small groups, with only one written answer sheet needing to be submitted per such group.

  • these small groups will be decided by the lab class, and need not be the same for each in-lab assignment.

  • these small groups should consist of two to four individuals (or maybe five if necessary).

    • individuals will not be involuntarily excluded from small groups

    • the class is fully expected and instructed to behave maturely and properly incorporate everyone into functioning small groups

• each written in-lab assignment must have the names of each member of all small group written clearly on the top.

• each person in any small group collectively doing each written in-lab assignment will receive the same grade for that particular in-lab assignment.
• communication between everyone and all the small groups in discussing the in-lab materials and in lab assignments is strongly encouraged, as are questions to and discussions with the instructor and TA.
  • the instructor and TA will assist where and as possible, short of giving the absolute answer to the in-lab assignments.
• each written laboratory assignment (and any appropriately requested or useful diagrams or drawings) will be independently graded by instructor and/or TA with comments largely based on content, format, flow of thought / ideas, understanding, and organization.
  • each written laboratory assignment will then be further independently graded, but with less emphasis, based on tone, word choice, sentence structure, grammar, punctuation, and spelling.
• each written laboratory assignment will be returned and briefly discussed at the beginning of the next teaching lab session to facilitate feedback, understanding, and improvement.

Overall Relevant Policies:

'Re-Grading': Please bring any assignment that has grading inaccuracies due to incorrect addition of points or something of that nature, and this will be corrected. If you would like a re-assessment of any segment of an assignment for reasons of disagreement with the grade, then I will gladly do so, but will also re-grade the entire assignment and not just the disputed portion. Grading is often subjective and based on a composite of marks given throughout any one assignment, and this policy permits this to be maintained in any possible re-determination of grades.

Plagiarism and / or 'Cheating': Each student is fully expected to be honest in all their work in this course. Anything else will be considered an extremely serious offense and will subject the student to strong disciplinary action. Under this discipline, it will be my suggestion and preference that such a student at least fails this course, and that depending on the nature of the offense more serious discipline could then be recommended to the UAF University Disciplinary and Honor Code Committee (please see UAF Student Academic Honor Code for details - http://www.uaf.edu/catalog/catalog_01-02/undergrad/regs3.html and http://www.uaf.edu/catalog/catalog_01-02/grad/regs3.html).
ICHTHYOLOGY (FISH / BIOL 427) Contact Information - Spring 2002

(http://www.sfos.uaf.edu/ - see ‘Academic Course Websites’)

instructor:
Dr. Gordon Haas
office: O'Neil 235
   • message board on door
email (remote contact preference): haas@sfos.uaf.edu
office phone: 474-5231

teaching assistant:
Chris(tine) Foshee
personal (individual) email (remote contact preference): ftcbf@uaf.edu
   general (shared) lab: O'Neil 134
   general (shared) lab phone: 474-7918

class lectures: M - W - F (10:30 to 11:30 am)
   • room: Irving II 138A
   • make office appointments after class.

laboratory: W (2:00 to 5:00 pm)
   • room: Bunnell 409
   • make office appointments during or after lab.

'recommended' (not mandatory) textbooks:
     River, NJ, USA.
note - these textbooks, and other resource books / materials, are on reserve in Biosciences Library in
Arctic Health Building.
   • primary literature journals in this library are main source for individual written papers and oral
     presentations.
   • also, consultation and discussion with instructor and teaching assistant.