Syllabus

**MSL 305: Invertebrate Zoology**

Class Schedule: Fairbanks-
Instructor: Dr. Amanda Kelley
School of Fisheries and Ocean Sciences
Office: Irving II rm 331
Phone: (907) 474-2474
Email: alkelley@alaska.edu
Office hours: Tues 1:00-2:00 pm

Lecture: MWF 1:00 – 2:00 Oneill 214
Lab: R 2:00 - 5:00 AHRB 1 W09

**Course Description:** This course will examine the tremendous diversity among invertebrates—both marine and terrestrial, through lectures and laboratory exercises. We will focus on the evolutionary relationships between and among groups by discussing different adaptive strategies, including development, reproduction, physiology, body structure and function, and sexual systems of such groups. Labs will focus on experimentation using visual observations, including the use of microscopes, drawings, and recording the information in a lab notebook.

**Course Goals:** The goal of this course is to introduce students to the field invertebrate zoology by learning techniques biologists use to identify and group species. After taking this course, students should be able to apply this knowledge in other fields, including marine biology, etymology, global change biology, the study of invasive species, and comparative physiology, for example.

**Specific Learning Objectives:**
1. Learn all the major groups of invertebrates.
2. Learn to identify major phyla based on approaches learned in lecture and lab.
3. Discuss the role invertebrates play in ecosystem processes.
4. Understand major events in the evolutionary history of invertebrates.
5. Be able to identify major anatomical structures in diverse invertebrate species.
4. Understand the different approaches to classifying animal relationships- cladistics (phylogenetic systematics) vs taxonomy (binomial nomenclature).
5. Understand the impact invertebrates have on human society.
6. Learn to organize and keep a laboratory notebook.

**Instructional method:**
This class will use multiple modes of learning, including: lecture, small groups, presentations, laboratory studies and scientific literature/current events in science.

**Course reading (required):**
Class Evaluation:
Midterm #1..................................................15 points
Midterm #2..................................................15 points
Lab quizzes..................................................5 points
Lab notebook.............................................8 points
Lab midterm ...............................................8 points
Independent research project.........................10 points
Research project presentation.........................5 points
Final exam..................................................20 points
Lab final exam............................................9 points
Class assignments......................................5 points
Total.........................................................100 points

Grading:
90-100% A
80-89% B
70-79% C
60-69% D
< 59% F

Course Schedule

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**Independent Research Project and Presentation:**
Undergraduate research is considered a “high-impact practice” by the Association of American Colleges and Universities (https://www.aacu.org/leap/hips). The goal of this research project for this course is to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions.

The research project will be a review of current peer-reviewed literature. Students will pick an invertebrate species to research and will generate a research outline which will be reviewed by the instructor. Using peer-reviewed research articles, students will then write a five page single spaced (no larger than 12 font) research paper (Abstract, Introduction, Discussion, and Conclusion). See class schedule for the research paper timeline- above. Finally, students will give a 12 minute presentation based on the results of their particular research project, with 5
minutes for questions from the audience. A grading rubric will be used to standardize the evaluation process for both the paper and the presentation.

Course Policies:

(1) Attendance: Students are expected to attend all scheduled classes, and are responsible for all material presented in lecture, and in the assigned readings. Students who miss class are welcome to ask to borrow the notes of their classmates; the instructors will not be responsible for providing notes. Please note that no in-class quizzes or participation points can be made up, regardless of the reason for missing class.

Expectations for lab attendance follow the above and have the following additional specifications: labs are only set up one day each week, so there is little opportunity to make-up a missed lab. Lab attendance and participation are part of your grade and there will be no opportunity to review the missed material if you do not attend lab. Note that labs meet once a week for three hours – FYI.

(2) Exams and Quizzes: Exams will be based on any material covered during the lecture period or assigned in the reading may be included in the lecture exams. This can include textbook illustrations, films, Powerpoint slides, and actual lectures. Take notes! Quizzes may be given at any time during lecture or lab, and there will be no make-up quizzes. If you must arrive within 5 minutes after the start of lecture or lab in order to take the quiz. Make-up exams will only be available in cases of medical and/or family emergencies, or for official academic activities (in which case the instructor should be contacted a minimum of two weeks in advance). The student is responsible for scheduling timely make-up exams with the instructor.

(3) Support and Disability Services: The Office of Disability Services can be reached by phone-(907) 474-5655, or email- fydso@uaf.edu, and can be located in WHIT 203 on the UAF campus. The Office of Disability Services is available for students with physical or learning disabilities. If you feel that you are differently abled and need these services, please contact the office or ask the instructor to make arrangements.

(4) Courtesy: Please turn off all audible sounds to any electronic devices (phones, laptops, tablets etc.) while in lecture. Refrain from using your laptops for activities not related to lecture during class time, e.g. emailing or browsing the web. Use of these items is strictly prohibited during exams. Students are free to record lectures. You may bring food or drink in the classroom unless otherwise instructed, for example when shared computers are in use.

(5) Plagiarism and academic integrity: Plagiarism will not be tolerated in any way during this course. All assignments are expected to consist of students’ original ideas and/or information from properly cited published sources. Students may seek assistance with proper referencing of scientific literature from the instructor as needed. Students are expected to conduct themselves according to the UAF Student Code of Conduct, which can be found in the course catalog. Failure to comply with these guidelines will result in a failing grade, and the student may face consequences at the university level, depending on the severity of the offense. I also use a program that can identify plagiarism from any internet source. So please consider this when contemplating using cut and paste for your assignments and research project.