**ZOOLOGY**

# Syllabus Fall 2019

*I turn the handle and the story starts:*

*Reel after reel is all astronomy,*

*Till life, enkindled in a niche of sky,*

*Leaps on the stage to play a million parts.*

*Life leaves the slime and through all oceans darts;*

*She conquers earth, and raises wings to fly;*

*Then spirit blooms, and learns how not to die,*

*Nesting beyond the grave in other’s hearts.*

*I turn the handle; other men like me*

*Have made the film; and now I sit and look*

*In quiet, privileged like Divinity*

*To read the roaring world as in a book.*

*If this thy past, where shall thy future climb,*

*O spirit, built of Elements and Time!*

*Julian Huxley*



**Instructor:** Dr. Jennifer Dearolf **Office:** DW Reynolds 230

Professor **E-mail:** dearolf@hendrix.edu

Pronouns: she, her, hers

**Phone:** 450-4530 **Office Hours**: Tuesdays 8:00-9:00,

Wednesdays 8:30-9:30,

or by appointment

**Class Meetings:** Lecture MWF 10:10 – 11:00

Lab T 1:10 – 4:00

**Statement about pronoun use:**I will gladly honor your request to address you by an alternative name and gender pronoun. Please advise me of this preference early in the semester so that I can be aware and make changes to my course records.

**Required Textbooks:**

Hickman CP, Roberts LS, Keen SL, Eisenhour DJ, Larson A, I’Anson H. 2016. *Integrative*

*Principles of Zoology*. 17th edition. McGraw- Hill Higher Education: New York, NY.

Johnson AA, Sutton JK, Moran MD, Knorek S, Dearolf J 2017. *General Zoology Laboratory*

*Directions*. 12th edition. Hendrix College: Conway, AR.

**Recommended Laboratory Resources:**

Rust TG. 1983. *A Guide to Biology Lab*. 3rd edition. Southwest Educational Enterprises:

Boerne, TX.

Adams BJ, Crawley JL. 2018. *Van De Graaf’s Photographic Atlas for the Zoology Laboratory*.

8th edition. Morton Publishing Company: Englewood, CO.

**Course Website:** <http://homes.hendrix.edu/dearolf/biol220.html>

**Course objectives:** This course is designed as an introduction to the structure, function, and physiology of animals. We will study the evolutionary relationships among organisms by comparing and contrasting their adaptive strategies. Our studies will focus on invertebrate and vertebrate organisms. Specific course objectives include:

1. Describe the taxonomic and evolutionary relationships between major groups of animals through features of their anatomy, physiology, development, behavior, and ecology
2. Apply skills in dissection, microscopy, and self-guided learning to develop anatomical and taxonomic knowledge of animals
3. Design and execute a research project involving experimental design, data collection, analysis, and presentation of the results in oral and written forms
4. Discuss how zoology contributes to scientific progress and influences other disciplines both within and outside of the life sciences

**Grades and Grading:** Your grade will be based on the results of a) lecture and lab examination scores, b) lecture and lab assignments, c) animal behavior lab report, d) poster presentation, and e) comprehensive exam as follows:

3 Lecture Exams 225

9 Lecture Assignments 155

1 Scientific Writing Assignment 25

1 Draft of Experimental Design Wrkst 5

1 Final Draft of Experimental Design Wrkst 10

1 List of Animal Behavior References 5

1 Draft of An Behav Intro 20

1 Draft of An Behav Methods 15

1 Draft of An Behav Figure(s) 5

1 Animal Behavior Laboratory Report 100

1 Poster Presentation 50

13 Illustrated Study Guides 65

1 Lab Practical Quiz 10

4 Lab Practicals 300

1 Comprehensive Final Assessment 125

**A** = 1115 – 998 pts.; **B** = 997 – 887 pts.; **C** = 886 – 775 pts.; **D** = 774 – 664 pts.; **F** < 663 pts.

If the class distribution is well below these cutoffs, the scale may be adjusted (curved) in calculating **final** grades. **There will be no curve on individual exams or assignments.**

**More Details about Grades and Grading:**

Lecture Exams: There will be three lecture exams, each with a value of 75 points. The format of the questions will vary: essay, short answer, fill-in-the-blank, matching, labeling, multiple choice, problem solving, etc. Each exam will cover all material introduced in lecture for that exam period and material in the relevant textbook chapters. Tests will be **administered in class at the scheduled time.** **No early or late exams will be given**, except for students that miss a test because of official college activities. I must receive official notification of the event, and the make-up test must be scheduled **before** the scheduled test date. The only other exception will be for students with valid excuses (e.g. illness with a note from a doctor or nurse).

To keep us all on the same page, I will write on the board the pages of the textbook that you should read for the next class. I will leave time in the class period before the scheduled exam to answer questions that you have about ANY material, but you will need to come to class prepared with questions. If no one puts his or her hand up and asks questions, I will move on to the day’s scheduled topic.

Lecture Assignments: There will be nine lecture assignments. All of these assignments together will total 155 points. These assignments will consist of worksheets that will help you focus in on the important details covered in some chapters of the textbook. You will receive these worksheets in class before you are asked to read specific material in the textbook. You will complete these worksheets as you read and have them completed by the next lecture meeting. These assignments will help you be prepared for each day’s lecture material and will serve as study guides for the exams. You will also turn them in at the end of the next lecture for them to be graded and returned to you.

Scientific Writing Assignment: To help you prepare your lab report (see below), you will be asked to complete one assignment that focuses on scientific writing. This assignment is a worksheet, and it is designed to help you identify the parts of a scientific paper and the specific information that is included in each part. This scientific writing assignment is worth 25 points.

Laboratory Report: One of the goals of this course is to teach you how to write a lab report in the form of a scientific paper. The focus of your lab report will be an Animal Behavior experiment that you and possibly your lab partners design. You can work on your experiment by yourself, if you choose to do so. During the fifth week of lab, you will begin to plan your Animal Behavior experiment and turn in a draft of your Experimental Design Worksheet. You will choose the invertebrate organism (examples: earthworms, fiddler crabs, crayfish, hermit crabs, starfish, etc.) that you will use and possibly identify the behavior you will investigate. Three weeks after this lab meeting, you will turn in final draft of your Experimental Design Worksheet. The following week, you will turn in a list of FIVE references that you think may have useful background information for the introduction of your lab report. In all likelihood, you will have to request these articles through interlibrary loan. The following week, you will turn in a draft of the Introduction of your Animal Behavior lab report and order or collect the animals for your experiment. You will collect your data on November 5th, and the following week, you will turn in a draft of the Methods section of your lab report. You will analyze your data on November 26th, in order to create drafts of your figure or figures, which you will turn in at the end of that lab period. The final draft of your Animal Behavior lab report, including an Abstract, Revised Introduction and Methods, Results, Discussion, and Literature Cited, will be due on December 18th. The final draft of your lab report will be worth 100 points.

Poster Presentation: In addition to journal articles, scientists present their results in the form of posters for scientific meetings. Thus, in addition to writing up your Animal Behavior experiment in the form of a journal article, you will also create a poster in order to present your study to your classmates. Posters will be presented during the last lab meeting of the semester. This assignment will be worth 50 points.

Illustrated Study Guides: To help you master the material for the lab practicals, you will be creating 13 illustrated study guides, one per lab meeting. At the beginning of each lab, you will be provided with a handout that will list the specimens that you will need to draw or photograph and the structures you will need to label on your photos or sketches. You will then complete your study guide during the lab and turn it in at the beginning of the next lab period. Each study guide will be worth 5 points.

Lab Practical Quiz: To help you prepare for the lab practicals, there will one quiz during the lab meeting before the first lab practical (September 24th). The quiz will consist of two to four lab practical stations, and each station will have one to four questions. This quiz will be worth 10 points.

Lab Practicals: There will be four laboratory practical exams, each with a value of 75 points. Specimens and slides will be left out for you to study. **There will be NO makeup lab practicals!**

Comprehensive Lecture Assessment: The final lecture assessment for the course will be cumulative and will be comprehensive over the entire course (this means some lab material will be included). It has a value of 125 points.

**Attendance policy:** To do well in this course, you must be here, both in body and in mind. Formal attendance will not be taken in class; however, if attendance is low, or if students are ill prepared for class, pop quizzes may be administered. If you have a legitimate reason for missing class, notify me **before** class, and if a quiz is administered, there may be no penalty for missing. Poor attendance will make it difficult to prioritize material while studying for exams. A student with a poor attendance record may not be eligible for any grade curving conducted at the end of the course.

**Attendance in the laboratory is mandatory.** Due to class size, the nature of the laboratory, and the preparation involved in setting up the labs, **make-up labs are impossible**. You will be working in groups to complete most projects; therefore, you need to make every effort to attend lab.

**Laboratory:** The laboratory component of this course is designed to investigate in detail certain components of how animals solve the problems of life. We will also spend a lot of time in the laboratory learning the basic taxonomic groups of animals and about their micro and gross anatomies.

Laboratory supplies will be provided for each lab session. Reference texts may be checked out of the library for the semester. These books will be kept in the laboratory; should they disappear, replacement costs will be borne equally by all enrolled students.

**Cell phone policy**: In recent years, the use of cell phones by students in my classes has become very distracting, both to other students in the class and to me. This has forced me to adopt a no-use/no-see policy. Your cell phone needs to be OFF or in SILENT mode (NOT VIBRATE) during lecture. If your cell phone rings during class or I see you using and/or looking at it, you will have to give it to me. To get your cell phone back, you will have to come and talk with me during my office hours.

**Academic honor code:** Hendrix College is committed to high standards of honesty and fairness in academic pursuits. Such standards are central to the process of intellectual inquiry, the development of character, and the preservation of the integrity of the community. It is required that all instances of academic dishonesty be reported to the Committee on Academic Integrity. Please familiarize yourself with the college’s statement of Academic Integrity, which can be found at:

<https://www.hendrix.edu/Catalog/2019-2020/Academic_Policies_and_Regulations/Policies_and_Appeals/Academic_Integrity/>

**Students with Disabilities or Special Needs:** It is the policy of Hendrix College to accommodate students with disabilities, pursuant to federal and state law.  Students should contact Julie Brown in the Office of Academic Success (505-2954; [brownj@hendrix.edu](mailto:brownj@hendrix.edu)) to begin the accommodation process.  Any student seeking accommodation in relation to a recognized disability should inform the instructor at the beginning of the course.

