LABORATORY FOR
PRINCIPLES OF ZOOLOGY

Professor:  Stephen Mullin
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Office Hours: Mon. & Thurs. 1330-1500 h; or, by appointment.

Course Description – Honors Section: One semester hour, three hours of lab per week.
Fundamental principles of animal life, including invertebrate and vertebrate animals.
Required lab fee.

Synopsis – This course is structured to give an overview of the animal phyla, examining the
diversity of body plans and their functions that are representative of Kingdom Animalia.
Material presented in lecture will be supplemented with laboratory examinations of, and
experimentation with, both living and preserved specimens. Evolutionary relationships
between major taxonomic groups within the animal kingdom will be emphasized throughout
the semester. I also assume that students enroll in this course because they enjoy the
challenge of learning more about animals.

Co-requisite – Bio133 lecture
Note, that there is a laboratory fee associated with this course (appearing on your tuition bill).
This fee is assessed to all students to partially defray expenses associated with lab supplies.

Required Materials – lecture:
Hickman, CP, Jr., LS Roberts, SL Keen, DJ Eisenhour, A Larson & H. l’Anson.

Optional Materials – laboratory:
Experiment/exercise notebook (3-ring binder w/ paper)

Attendance –
This laboratory section meets on Tuesday from 1400-1650 h. Attendance is mandatory for
the lab exercises: more than two unexcused absences during the term will result in your
receiving a failing grade (“F”) for the entire course. If you expect to miss a lab because of an
official SFA-related function, see me in advance of that week, as you will be responsible for
the material taught during that time.
I would like to discourage distractions during our meeting times. Therefore, any student will
be penalized ten (10) points if their pager/mobile telephone/tablet/etc. emits any audible noise
during any class meeting, or if I observe anybody using those devices to send text messages.
**Exams** — The four lab practicals and the lab final take place during lab periods and test your ability to correctly identify and classify organisms, their life-history traits or distinguishing features, and their evolutionary relationships. Practicals are timed exams and there are NO make-ups; only the last of these exams will be comprehensive (with emphasis on the last eight weeks of the term).

**Semester Project** — As a class, we will be completing a semester-long research project that examines the biology of an assigned animal species. This project will require plenty of advance consideration (i.e., procrastination will cause you to fail this portion of the course). We will be completing this project in stages, with each stage requiring some work on your part (due dates announced in advance). Your grade on the project will be based on the quality of your work during each stage and your overall participation (i.e., cooperation is expected throughout all phases of the project).

**Proper English counts!** One point will be deducted from your exam total for every 5 spelling/grammar/context/syntax/punctuation errors on any exam, lab worksheet, or any assignments related to the semester project.

**Grading** — Laboratory

There will be 4 practical exams given over the course of the semester during lab period, each worth 20 points – none of these exams will be comprehensive (each covering only material directly preceding the exam date). The Final Lab Exam (60 points) emphasizes the latter portion of the course, but also is comprehensive.

So the point breakdown for the course looks like this:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
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<tbody>
<tr>
<td>Laboratory practicals (4 @ 20 points each)</td>
<td>80</td>
</tr>
<tr>
<td>Final lab practical exam</td>
<td>60</td>
</tr>
<tr>
<td>Semester Project</td>
<td>120</td>
</tr>
<tr>
<td>Miscellaneous (lab assignments, etc.)</td>
<td>90</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>350 points</td>
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</tbody>
</table>

Thus, your awarded grade for the lab will be based on a 350-point scale. At the end of the term, the percent score that you earn in this portion of the course is forwarded to the professor for your lecture section. You will then be assigned an overall grade for the combined lecture and lab portions of the course using the following formula:

$$\text{Bio133 course grade} = \frac{3 \times (\text{lecture grade}) + \text{lab grade}}{4} \times 100$$

**Desire 2 Learn** — I will be managing both the content and the assessment of your performance in this course using the D2L platform that is accessible through your mySFA account. You should habitually check the course homepage at that site for any updates to lab material, or other related announcements. You can also monitor your performance in the lab portion of the course using D2L because that’s where I’ll keep a running tally of your grades.
Further Assistance with course material -- If you suddenly find yourself with a question that is burning a hole in your brain, and cannot reach me, there are several ways of obtaining the answer. Here are some examples:

1. The authors of your lecture text have thoughtfully provided a variety of resources for you to follow up on presented material. The citations and websites are listed at the end of each chapter in the text.

2. SFA provides the Academic Assistance and Resource Center (AARC) for all aspects of your academic achievement. To make an appointment, call 936.468.4108, or go to their office in the 1st floor of the Steen Library.

3. Help each other -- get to know your fellow students! Active learning through testing each other on the material is one of the most effective ways to learn where your weaknesses lie with this subject matter.
Miscellany as required by the University:

Students with Disabilities
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices.

Academic Integrity (A-9.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as by abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

Withheld Grades Semester Grades Policy (A-54)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Program Learning Outcomes:
PLO 1: The student will demonstrate a good knowledge base in biological concepts.
PLO 4: The student will be able to design, carry out, and analyze experiments to answer biological questions using the scientific method.
PLO 6: The student will demonstrate preparation for future career and educational goals.

General Education Core Curriculum Objectives / Outcomes
EEO #1: To understand and apply method and appropriate technology to the study of natural sciences.
EEO #2: To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretations both orally and in writing.
EEO #3: To identify and recognize the differences among competing models of scientific theories.
EEO #4: To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
EEO #5: To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution, to modern culture.

General Education Core Curriculum
This course has been selected to be part of Stephen F. Austin State University’s core curriculum. The Texas Higher Education Coordinating Board has identified six objectives for all core courses: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these objectives.

The table below indicates the core objectives addressed by this course, the assignment(s) that will be used to assess the objectives in this course and uploaded to LiveText this semester, and the date the assignment(s) should be uploaded to LiveText. Not every assignment will be collected for assessment every semester.

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
<th>Due Date in LiveText</th>
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</thead>
<tbody>
<tr>
<td>Critical Thinking Skills</td>
<td>To include creative thinking, innovation, inquiry, and analysis and evaluation of information.</td>
<td>Shoaling behavior in zebrafish</td>
<td>Provided in lab</td>
</tr>
<tr>
<td>Empirical &amp; Quantitative Skills</td>
<td>To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.</td>
<td>Shoaling behavior in zebrafish</td>
<td>Provided in lab</td>
</tr>
<tr>
<td>Teamwork</td>
<td>To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.</td>
<td>Flatworm phototropism</td>
<td>Provided in lab</td>
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Student Learning Outcomes:
Student’s understanding will be evaluated with weekly assignments and scheduled laboratory practical exams covering multiple exercises. The final lab grade counts 1/4 of their final Bio133 grade. Students who successfully complete the Principles of Zoology Laboratory will be able to:

1. Give concise and accurate answers to questions. (EEO 2, 3, 4; PLO 1, 4, 6).
2. Demonstrate a competent knowledge of the relationships of the organisms studied. (EEO 1, 3, 5; PLO 1, 4).
3. Demonstrate proper microscope usage skills. (EEO 1, 2, 5; PLO 1, 4, 6).
4. Demonstrate a proficient vocabulary of biological terms. (EEO 1, 2; PLO 1, 4, 6).
5. Demonstrate a competent knowledge of the binomial system of nomenclature. (EEO 1, 3, 4; PLO 1, 4, 6).
<table>
<thead>
<tr>
<th>Date</th>
<th>Lab # — Subject matter</th>
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<tbody>
<tr>
<td>23 Jan.</td>
<td>1. Introductory overview of the Phyla</td>
</tr>
<tr>
<td>30 Jan.</td>
<td>2. Evolution Game</td>
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<tr>
<td>6 Feb.</td>
<td>3. Classification &amp; Phylogeny; [and practical exam on labs 1 &amp; 2]</td>
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<tr>
<td>13 Feb.</td>
<td>4. Studying diversity — analytical techniques &amp; applications</td>
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<tr>
<td>20 Feb.</td>
<td>5. Systems &amp; Processes</td>
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<tr>
<td>27 Feb.</td>
<td>6. Protozoa</td>
</tr>
<tr>
<td>6 Mar.</td>
<td>7. Porifera, Cnidaria, &amp; Platyhelminthes; [and practical exam on labs 5 &amp; 6]</td>
</tr>
<tr>
<td>13 Mar.</td>
<td>SPRING BREAK</td>
</tr>
<tr>
<td>20 Mar.</td>
<td>8. Project design/execution</td>
</tr>
<tr>
<td>27 Mar.</td>
<td>9. Project execution</td>
</tr>
<tr>
<td>3 Apr.</td>
<td>10. Rotifera, Acanthocephala, &amp; Mollusca</td>
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<tr>
<td>10 Apr.</td>
<td>12. Nematoda &amp; Annelida; [and practical exam on labs 7 &amp; 10]</td>
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<td>17 Apr.</td>
<td>13. Arthropoda</td>
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<td></td>
<td>[and Semester Project papers due on 20 Apr.!]</td>
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<tr>
<td>1 May</td>
<td>15. Final laboratory practical exam. (covers metazoans only)</td>
</tr>
</tbody>
</table>

**NOTE:** Each practical exam will cover material only from the labs indicated on that exam date. The exception is the final practical exam that will emphasize the last eight weeks of lab material, but also contain questions about earlier lab exercises.

Feel free to contact me at your convenience (936.468.3601 or sjmullin@sfasu.edu).