JEFFERSON COLLEGE

COURSE SYLLABUS

BIO 206

GENERAL ZOOLOGY

5 Credit Hours

Prepared by:
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Revised Date:
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Ms. Linda Abernathy, Division Chair, Math, Science & Business
Ms. Shirley Davenport, Dean, Arts & Science Education
BIO206: GENERAL ZOOLOGY

I. CATALOG DESCRIPTION

A. Course pre-requisites/co-requisites:
   High school biology and chemistry or equivalent
   BIO101 (General Biology) with a grade of “C” or better within the previous five years of registration date
   Reading proficiency

B. 5 semester credit hours

C. General Zoology deals with animal cell structure and chemical processes, the structure and function of various organ systems, and an introduction to animal genetics, evolution and ecology. Laboratory time is required and consists of classification and identification of representatives of the various animal phyla. (S)

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

<table>
<thead>
<tr>
<th>Expected Learning Outcomes</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify cellular organelles and describe the function of each; students will diagram the structure of the cell membrane; students will differentiate between active and passive transport processes and osmosis and diffusion; students will predict the resulting changes to be exhibited in vertebrate cells placed in different tonic solutions</td>
<td>Classroom lecture, classroom discussion, exam, and laboratory activities</td>
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<tr>
<td>Compare and contrast mitosis and meiosis; students will recognize the different stages of cell cycle (mitosis and meiosis).</td>
<td>Classroom lecture, classroom discussion, and exam</td>
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<tr>
<td>Know Mendelian genetics and the relevant associated genetic terminologies; students will perform various genetics problems; students will differentiate between monohybrid and dihybrid crosses; students will differentiate between traits that follow Mendelian genetics with those that do not in animals</td>
<td>Classroom lecture, classroom discussion, homework assignments, exam, and laboratory activities</td>
</tr>
<tr>
<td>Distinguish between the various scientists, including but not limited to Darwin and Wallace, involved in the development of the Theory of Evolution; students will differentiate between the various causes of</td>
<td>Classroom lecture, classroom discussion, exam, and writing assignments from <em>Into the Jungle</em></td>
</tr>
<tr>
<td>Evolution</td>
<td>Students will identify representative species from Kingdom Protista; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural histories for members of each taxonomic group.</td>
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<tr>
<td>Speciation</td>
<td>Identify representative species from Kingdom Animalia, Phylum Porifera; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group.</td>
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<tr>
<td>Classifications</td>
<td>Identify representative species from Kingdom Animalia, Phylum Cnidaria; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group.</td>
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<tr>
<td>Natural History</td>
<td>Students will identify representative species from Kingdom Animalia, Phylum Platyhelminthes; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group.</td>
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<tr>
<td>Taxonomic Groups</td>
<td>Students will identify representative species from Kingdom Animalia, Phylum Mollusca; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group.</td>
</tr>
<tr>
<td>Classroom Activities</td>
<td>Students will identify representative species.</td>
</tr>
</tbody>
</table>
from Kingdom Animalia, Phylum Annelida; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group

Students will identify representative species from Kingdom Animalia, Aschelminthes; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group

Students will identify representative species from Kingdom Animalia, Phylum Arthropoda; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group

Students will identify representative species from Kingdom Animalia, Phylum Echinodermata; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group

Students will identify representative species from Kingdom Animalia, Phylum Chordata; students will distinguish between the various characteristics that define each taxonomic group discussed; students will examine natural and life histories for members of each taxonomic group

Students will demonstrate the ability to formulate hypotheses and carry out various experiments to test the hypotheses

Laboratory activities

Laboratory activities, and laboratory exams

Classroom lecture, classroom discussion, laboratory activities, and laboratory exams

Classroom lecture, classroom discussion, laboratory activities, and laboratory exams

Classroom lecture, classroom discussion, laboratory activities, and laboratory exams

Classroom lecture, classroom discussion, laboratory activities, and laboratory exams

Laboratory activities

III. COURSE OUTLINE

A. Cytology
   1. Cell theory
   2. Structure and function of animal cell organelles
   3. Cell membrane physiology
4. Cell division

B. Genetics and heredity
1. Gregor Mendel
2. Monohybrid cross
3. Test cross
4. Independent assortment
5. Dihybrid cross
6. Incomplete dominance
7. Codominance
8. Multiple alleles
9. Dominance modification
10. Lethal alleles
11. Epistasis
12. Chromosomes and sex determination
13. Sex linkage
14. X-inactivation
15. Sex ratio
16. Sex pre-selection
17. Sex influenced genes

C. Evolution
1. Definitions
2. Spontaneous generation
3. Special creation
4. Inheritance of acquired characteristics
5. Charles Darwin
6. Alfred Russel Wallace
7. Evidence of evolution
8. Phylogeny
9. Causes of evolution
10. Speciation
11. Evolutionary rates

D. Kingdom protista
1. Characteristics
2. Super group Excavata; subgroup Fornicata
3. Super group Excavata; subgroup Parabasalia
4. Super group Excavata; subgroup Euglenozoa
5. Super group Amoebozoa; subgroup Tubulinea
6. Super group Amoebozoa; subgroup Acanthamoebida
7. Super group Amoebozoa; subgroup Entamoebida
8. Super group Rhizaria; subgroup Foramenifera
9. Super group Chromalveolata; subgroup Alveolata
E. Kingdom Animalia; phylum Porifera
   1. Characteristics
   2. Representative examples

F. Kingdom Animalia; phylum Cnidaria
   1. Characteristics
   2. Class Hydrozoa
   3. Class Scyphozoa
   4. Class Anthozoa

G. Kingdom Animalia; phylum Ctenophora
   1. Characteristics
   2. Representative examples

H. Kingdom Animalia; phylum Platyhelminthes
   1. Characteristics
   2. Class Turbellaria
   3. Class Trematoda
   4. Class Cestoidea

I. Kingdom Animalia; phylum Mollusca
   1. Characteristics
   2. Class Gastropoda
   3. Class Bivalvia
   4. Class Cephalopoda
   5. Class Polyplacophora
   6. Class Scaphopoda

J. Kingdom Animalia; phylum Annelida
   1. Characteristics
   2. Class Polychaeta
   3. Class Clitellata

K. Kingdom Animalia; phylum Rotifera
   1. Characteristics
   2. Representative examples

L. Kingdom Animalia; phylum Nematoda
   1. Characteristics
   2. Representative examples

M. Kingdom Animalia; phylum Nematomorpha
   1. Characteristics
   2. Representative examples
N. Kingdom Animalia; phylum Arthropoda
   1. Characteristics
   2. Subphylum Trilobitomorpha
   3. Subphylum Chelicerata
   4. Subphylum Crustacea
   5. Subphylum Myriapoda
   6. Subphylum Hexapoda

O. Kingdom Animalia; phylum Echinodermata
   1. Characteristics
   2. Class Asteroidea
   3. Class Ophiuroidea
   4. Class Echinoidea
   5. Class Holothuroidea

P. Kingdom Animalia; phylum Chordata
   1. Characteristics
   2. Infraphylum Hyperotreti
   3. Infraphylum Vertebrata
   4. Class Amphibia
   5. Class Reptilia
   6. Class Aves
   7. Class Mammalia

IV. METHOD(S) OF INSTRUCTION

A. Lecture
B. PowerPoint presentations
C. Textbook assignments
D. Class discussions
E. Laboratory exercises
F. Field trips to Riverlands Ecological Demonstration Area, Valleyview Glade, and Victoria Glade
G. DVDs

V. REQUIRED TEXTBOOK(S)


VI. REQUIRED MATERIALS

No materials required

VII. SUPPLEMENTAL REFERENCES

No supplemental references required

VIII. METHOD OF EVALUATION

A. Distribution of final Grade

Students are evaluated by five hourly exams, a comprehensive final exam, laboratory exercises, four laboratory exams, 10 writing assignments from *Into the Jungle* and one day-long, required field trip.

B. Assignment of final letter grades

90-100% = A  
80-89% = B  
70-79% = C  
60-69% = D  
Below 60% = F

C. Attendance policy

Student attendance is mandatory. There are no excused absences. If a student misses more than 15% of the total time (including lecture and laboratory) that the class meets in a semester, the student may be prohibited from attending the class by the instructor. In such cases, the student must officially withdraw from the course, by the designated withdrawal date, in order to reduce the possibility of receiving an “F” for the course.

No make-up exams are given, however students are allowed to drop their lowest grade on one of the hourly tests or laboratory exams so if they are absent on a test day, the missed test is automatically dropped. Students arriving more than 10
minutes late will not be allowed to take the test and that test grade will be dropped. Any additional missed tests/late arrivals will result in a grade of zero and the test grade will not be dropped.

Students arriving late to lab will not be allowed to participate in the laboratory activity and will receive a grade of zero. Students that leave lab before the successful completion of the lab will also receive a grade of zero. Laboratory exercises cannot be made up.

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library phone 636-481-3169)

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College Website, http://www.jeffco.edu/jeffco/index.php?option=com_weblinks&catid=26&Itemid=84)

XI. ATTENDANCE STATEMENT

Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.