SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 24.0101
SEMESTER: DEPARTMENTAL SYLLABUS
COURSE TITLE: Animal Biology
COURSE NUMBER: BIOL-0231
CREDIT HOURS: 3
INSTRUCTOR: DEPARTMENTAL SYLLABUS
OFFICE LOCATION: DEPARTMENTAL SYLLABUS
OFFICE HOURS: DEPARTMENTAL SYLLABUS
TELEPHONE: DEPARTMENTAL SYLLABUS
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KCKCC issued email accounts are the official means for electronically communicating with our students.

PREREQUISITE(S):

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, http://www.kckccbookstore.com/, for the required texts for your particular class.

COURSE DESCRIPTION:
The principles of animal biology and basic life processes are covered with special consideration given to the ecology, evolution, and comparative physiology of the great groups of animals.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
I. Scientific Method
II. The Cell
III. Molecular Biology
IV. Cell Division
V. Inheritance Patterns
VI. Molecular Genetics
VII. Descriptive Embryology
EXPECTED LEARNER OUTCOMES:
A. The learner will acquaint the student with the methods of science, especially as they relate to Zoology.
B. The learner will encourage an understanding of the complexities and interrelationships between and within Animals.
C. Introduce the student to the similarities and differences between the major Animal Phyla.
D. The learner will promote the value of critical thinking both during and after the class.

COURSE COMPETENCIES:

The learner will acquaint the student with the methods of science, especially as they relate to Zoology.

The learner will promote the value of critical thinking both during and after the class.

1. The learner will be able to understand that Animals are made of molecules, which are collections of atoms bound to one another. The life processes within an animal are based, to a large degree on the chemical properties of atoms, ions and molecules.
2. The learner will be able to recognize that carbohydrates and lipids are principle sources of energy for most animals.
3. The learner will be able to explain how proteins, nucleotides and nucleic acids provide the basis for structure, function, information storage, energy transfer and genetic regulation in animals.
4. The learner will be able to understand that the cell is the basic organizational unit of life.
5. The learner will be able to identify different cell types and describe how they are organized into structural and functional units.
6. The learner will be able to recognize that energy drives all the life processes in a cell. Identify the two forms of energy and understand their nature.
7. The learner will be able to describe the laws of thermodynamics.
8. The learner will be able to describe enzymes and understand their role in animal metabolism.
9. The learner will be able to define metabolism.
10. The learner will be able to understand the basic pathways of glycolysis, Krebs cycle and the electron transport system.
11. The learner will be able to summarize the cell cycle.
12. The learner will be able to understand mitosis and meiosis and their roles in animals.
13. The learner will be able to demonstrate basic Mendelian genetics.
14. The learner will be able to analyze the nature of chromosomes and genes.
15. The learner will be able to define the nature of DNA and RNA, as well as, diagram protein synthesis.
16. The learner will be able to explain the types and nature of mutations and their causes.
17. The learner will be able to evaluate and debate gene technology.

The learner will encourage an understanding of the complexities and interrelationships between and within Animals.
18. The learner will be able to understand basic embryology.
19. The learner will be able to describe fertilization.
20. The learner will be able to illustrate Echinoderm development, Illustrate Amphibian
development, Compare and contrast the two.
21. The learner will be able to ascertain the adaptations required for the long term development
periods in a terrestrial environment for reptiles, birds and mammals.
22. The learner will be able to define organic evolution.
23. The learner will be able to understand evolution according to Darwin.
24. The learner will be able to list the various sources of evidence which support the theory of
evolution.
25. The learner will be able to demonstrate an understanding of the basic principles of population
genetics.
26. The learner will be able to define speciation as it relates to reproductive isolation.
27. The learner will be able to relate how DNA is helping modern evolutionists uncover
evolutionary relationships.
28. The learner will be able to define behavior.
29. The learner will be able to list proximate factors that influence behavior.
30. The learner will be able to name two key factors that face each animal.
31. The learner will be able to appreciate the evolution of social systems.
32. The learner will be able to define Ecology.
33. The learner will be able to understand the interactions between and within species.
34. The learner will be able to describe a community and understand their attributes.
35. The learner will be able to describe the major ecosystems around the world.
36. The learner will be able to comprehend how animal relationships are represented by
branching evolutionary-tree diagrams.
37. The learner will be able to understand how animal body plans are categorized according to
how cells are organized into tissues and how body parts are distributed within and around an
animal.
38. The learner will be able to demonstrate the methods used to discern evolutionary
relationships.
39. The learner will be able to understand the significance of the Kingdom Protista as it relates to
humans.

*Introduce the student to the similarities and differences between the major Animal Phyla.*

40. The learner will be able to list and describe the characteristics of the seven phyla of
“protozoa.”
41. The learner will be able to list and describe the characteristics of the phylum Cnidaria and all
of its classes naming examples of each paying particular attention to the characteristics thought
to be derived from lower phyla.
42. The learner will be able to list and describe the characteristics of the phylum Platyhelminthes
and all of its classes naming examples of each paying particular attention to the characteristics
thought to be derived from lower phyla.
43. The learner will be able to list and describe the characteristics of the phylum Nemertea and
all of its classes naming examples of each paying particular attention to the characteristics
thought to be derived from lower phyla.
44. The learner will be able to list and describe the characteristics of the phylum Gastrotricha and
all of its classes naming examples of each paying particular attention to the characteristics
thought to be derived from lower phyla.
45. The learner will be able to list and describe the characteristics of the phylum Rotifera and all
of its classes naming examples of each paying particular attention to the characteristics thought
to be derived from lower phyla.
46. The learner will be able to list and describe the characteristics of the phylum Kinorhyncha and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
47. The learner will be able to list and describe the characteristics of the phylum Nematoda and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
48. The learner will be able to list and describe the characteristics of the phylum Nematomorpha and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
49. The learner will be able to list and describe the characteristics of the phylum Acanthocephala and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
50. The learner will be able to list and describe the characteristics of the phylum Priapulida and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
51. The learner will be able to list and describe the characteristics of the phylum Mollusca and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
52. The learner will be able to list and describe the characteristics of the phylum Annelida and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
53. The learner will be able to list and describe the characteristics of the phylum Arthropoda and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
54. The learner will be able to list and describe the characteristics of the phylum Echinodermata and all of its classes naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
55. The learner will be able to list and describe the characteristics of the class Chondrichthyes and naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
56. The learner will be able to list and describe the characteristics of the class Osteichthyes and naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
57. The learner will be able to list and describe the characteristics of the class Amphibia and naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
58. The learner will be able to list and describe the characteristics of the class Reptilia and naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
59. The learner will be able to list and describe the characteristics of the class Aves and naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.
60. The learner will be able to list and describe the characteristics of the class Mammalia and
naming examples of each paying particular attention to the characteristics thought to be derived from lower phyla.

**ASSESSMENT OF LEARNER OUTCOMES:**
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

**SPECIAL NOTES:**
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center, in room 3354 or call at: 913-288-7670.