BIO 102
Biological Sciences II

Course Description
This course is a continuation of introductory biology which includes classification of organisms and structural and functional considerations of all kingdoms (particularly major phyla as well as viruses.) Vertebrate animals and vascular plants are emphasized.

Prerequisites: BIO 101

4 Cr (3.0 lect/pres, 3.0 lab, 0 other)

Course Focus
The purpose of this general education core course is to enable the student to gain an appreciation and working knowledge of basic biological principles. In order to develop skills to demonstrate scientific principles and the application of these principles, students will:

- Know the anatomy and physiology of major structures associated with the following organ systems: Integumentary System, Skeletal System, Muscular System, Nervous System (includes special senses of sight, hearing, smell and taste), Endocrine System, Cardiovascular System (includes blood), Lymphatic System, Respiratory System, Digestive System, Urinary System, and Reproductive Systems.
- Know the basic chemical principals dealing with the structure of matter, chemical formulas, acids and bases, and biochemistry.
- Know the structures of cells, metabolic processes of cells, and various tissue types present in the human body.

Text and References

BIO 102 Core Curriculum Competencies
All courses approved for the general education core curriculum help students develop communication skills.
This course develops critical thinking skills through instruction that emphasizes the understanding of Biological Sciences concepts from several sub-disciplines. This understanding will be demonstrated by assessments on the common final exam. The student will demonstrate the following critical thinking objectives:

Following standard Scientific Method, students will interpret laboratory observations and data, and determine relevance of their findings to expected values.

Students will recognize key biological assumptions and make inferences justified by data and observations.

Course Goals
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. (*designates a CRUCIAL goal)

1. Relate water and life
2. List agents of evolutionary change
3. Compare species genomes
4. Associate evolution and natural selection
5. Give natural selection examples
6. Define evolutionary fitness
7. Discuss evolutionary evidence
8. Define biological species
9. Construct evolutionary tree
10. List life properties
11. Classify organisms
12. Draw virus structure
13. Explain virus action
14. Compare HIV bacteriophages and influenza
15. Describe prokaryotic structure
16. Illustrate prokaryotic gene transfer
17. Outline prokaryotic metabolism
18. List prokaryotic diseases
19. Review endosymbiotic theory
20. Classify green plants
21. Identify major fungi
22. List general animal features
23. Trace animal body evolution
24. Characterize acoelomate animals
25. Compare coelomate invertebrates
26. Contrast vertebrate and non-vertebrate chordates
27. Justify primate success
28. Label plant parts
29. Trace plant fertilization path
30. Analyze plant transport mechanisms
31. Predict plant transport results
32. Recognize soil contributions
33. Identify plant defense mechanisms
34. Investigate plant signal transduction
35. Label flower parts
36. Recognize plant life spans
37. Characterize tissue types
38. Define body homeostasis
39. Outline nervous system organization
40. Draw nerve impulse process
41. Distinguish among sensory receptors
42. Describe hormone action
43. Compare nervous and endocrine function
44. Recognize bone histology
45. Summarize bone development
46. Model muscle contraction physiology
47. Integrate circulatory and respiratory function
48. Connect temperature and osmotic regulation
49. Observe kidney function
50. Define immune system parts
51. Link immunity and life
52. Outline human digestion
53. Trace human fertilization
54. Watch human embryonic development
55. Relate development and evolution
56. Understand animal behavior
57. Define biological population
58. Predict environmental effects on population
59. Predict population genetic variation
60. Define biological community
61. Represent niche interactions
62. Recall biogeochemical cycles
63. Trace ecosystem energy
64. Name biosphere biomes
65. Debate conservation options

Student Contributions:
Classes are designed to employ a variety of teaching techniques. In order to maximize learning, required readings should be done prior to a unit. If a student is falling behind in lab performance or academic achievement, it is imperative to seek immediate assistance from the instructors.

Course Evaluation
- Student progress will be evaluated through a series of tests, quizzes in-class and out of class assignments and will be detailed in the attachment to this syllabus.
- Blackboard: lecture notes, handouts, podcasts, study hints, tutor information, syllabi, and other course information is available on the course blackboard page.
- Laboratory Component: This course has a required lab component which supplements the information presented in lecture. The lab will be independently evaluated primarily through lab practicals, in class and out of class lab assignments (such as research papers). For specific details about lab evaluations, please refer to the attachment to this syllabus.
GRADING SCALE:
90-100  =  A
80-89   =  B
70-79   =   C
60-69   =   D
below 60 =  F

Course Schedule
The class meets for 3 lecture/presentation hours and 3 lab hours per week.

Developed/Revised: November 11, 2009

ADA STATEMENT
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

ACADEMIC MISCONDUCT
There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

ATTENDANCE
The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Reinstatement requires the signature of the division dean.

- In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.
- When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance.
Under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.
- A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

HAZARDOUS WEATHER
In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLVH 101.1, WSOX 1230 AM, WAVE 97.3, WTOC TV, WSGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

EXTRA:

Emergency Text Message Alert
Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on “emergency TextAlert at TCL” and fill out the form or go to www.tcl.edu/textalert.asp

GRADING METHODOLOGY
The final grade must be 70 or more (a grade “C” or better) in order to pass the course and progress to the next course. Students absent from an examination or presentation will receive a “0” grade for the examination unless other arrangements are made with the individual instructor prior to the examination or presentation day or on the examination or presentation day before the test/presentation is scheduled to be given.

The student is responsible for notifying the instructor for the reason of the absence. It is also the responsibility of the student to contact the appropriate instructor to arrange to make up the examination. Arrangements may be completed by telephone.

If the instructor is not available, a message should be left on the instructor’s voice mail AND with another member of the faculty or administrative assistant. The make-up exam will be scheduled and the instructor will decide the method of examination. Messages sent by other students are unacceptable.