PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

HONORS BIOLOGY II
BIO 1520

Class Hours: 3.0  Credit Hours: 4.0
Laboratory Hours: 2.0  Date Revised: Spring 01

Catalog Course Description:

An in-depth, interactive lecture and laboratory study of the diversity of life, plant and animal structure and function, ecology, and animal behavior.

Entry Level Standards:

Must be eligible for enrollment in ENG 1010 and DSM 0840 or higher.

Prerequisite:

Honors Biology 1510 with a grade of C or better, or consent of instructor

Textbook(s) and Other Reference Materials Basic to the Course:

Textbook:

Laboratory book:

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 1    | Lecture: The Prokaryotes & Viruses  
     |       | Lab: K. Monera |
| 2    | Lecture: Protista and Fungi  
     |       | Lab: K. Protista |
| 3    | Lecture: Animal Diversity 1  
     |       | Lab: Invertebrates |
| 4    | Lecture: Animal Diversity 2  
     |       | Lab: Vertebrates 1 |
| 5    | Lecture: Animal Diversity 3  
     |       | Lab: Vertebrates 2 |
| 6    | Lecture: Mammalian Organization  
     |       | Lab: Mammalian Organization |
| 7    | Lecture: Nervous, Sensory & Endocrine Syst. |
Lab: Nervous Syst. & Senses

8
Lecture: Circulatory, Respiratory & Immune Syst.
Lab: Circulation & Respiration

9
Lecture: Digestive & Urinary Syst.
Lab: Digestive & Urinary

10
Lecture: Reproductive Syst. & Development
Lab: Reproductive Syst.

11
Lecture: Plant Diversity
Lab: Plant Diversity

12
Lecture: Plant Structure and Function
Lab: Plant Morphology

13
Lecture: Plant Reproduction
Lab: Plant Reproduction

14
Lecture: Ecology & Ecosystems
Lab: Aquatic Communities

15
Lecture: Communities & Populations
Lab: Terrestrial Communities

16
Lecture: Student Presentations
Lab: None

**II. Course Objectives***:

A. Understand the diversity and complexity of life and will become better stewards of our biosphere. I.5, III.2

B. Understand the relationship between biological structures (a tissue, organ, or organism) and their functions. I.5, III.2

C. Better understand personal health related problems and an ability to communicate more effectively with their health care givers. I.4, I.5

D. Understand and appreciate the issues associated with environmental concerns such as recycling and waste disposal, acid rain, population growth, the introduction of non-native species, the greenhouse effect and global warming. IV

E. Interpret related biological information and determine its validity. III.1, III.2

F. Reason and think more critically. III.2

*Roman numerals after course objectives reference goals of the university parallel program.

**III. Instructional Processes***:

Students will:

1. Locate and evaluate related published scientific information in the ERC and on the World Wide Web. *Information Literacy Outcome, Technological Literacy Outcome*
2. Use related equipment and tools for making biological measurements and observations. 
   **Technological Literacy Outcome**

3. Work in teams to collect data, generate graphs and tables of the collected data, summarize the data and draw conclusions from the data. **Technological Literacy Outcome, Active Learning Strategy**

4. Read and critique scientific writings, including those from the text, biological journals, books and the internet. **Information Literacy Outcome**

5. Develop a vocabulary that allows them to communicate more effectively with scientific literature and community. **Information Literacy Outcome**

6. Participate in a learning experience that promotes independent thinking and required sustained effort and time such as a research project or field trip. **Active Learning Strategy, Transitional Strategy**

7. Examine ethical issues related to biology, such as the use of reproductive technology, and environmental issues such as global warming, the greenhouse effect and human population growth. **Cultural Diversity and Social Adaptation Outcome, Personal Development Outcome, Transitional Strategy**

*Strategies and outcomes listed after instructional processes reference Pellissippi State’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

### IV. Expectations for Student Performance*

Upon successful completion of this course, the student should be able to:

1. Describe basic anatomy (tissues, organs, and organ systems), physiology, reproduction, and development of plants and animals. A, B, C, F

2. Identify causes and treatments of various basic medical concerns such as ulcers, diabetes, depression, osteoporosis and infertility. A, B, D, F

3. Compare and contrast organisms representing the five kingdoms of living things. A, B, D, F

4. Identify the importance of organism from the five kingdoms of living things to the health of the biosphere. A, D, F

5. Explain basic concepts of population growth and community interactions. D, E, F

6. Describe the major concepts of ecology and environmental concerns. A, D, F

7. Use dichotomous keys to identify unknown organisms and report data using graphs. E, F

8. Locate biologically related material in the ERC and on the WWW. Evaluate biological information they read about or see on TV. E, F

9. Interpret and draw conclusions from graphically presented data. E, F

*Letters after performance expectations reference the course objectives listed above.

### V. Evaluation:
A. Testing Procedures:

For evaluation purposes the course material will be divided into four units of approximately equal length. Within each unit a combination of exam and assignments will be given worth a 150 points. The exams will be a mixture of objective and discussion questions.

B. Laboratory Expectations:

Students are expected to attend and complete the laboratory exercises assigned each week. Make-up laboratory times are not available.

Students are expected to attend and complete the laboratory exercises assigned each week. Make-up laboratory times are not available.

It is expected that the students in the honors will learn significantly from one another. Class participation is expected.

Students are expected to dress appropriately for the laboratory to minimize the possibility of the spread of contamination and risk to personal safety. No open-toed shoes are allowed, and garments that cover the legs are recommended. Students are required to report to their laboratory instructor any concern for personal safety or injury sustained during various exercises.

Drink, food, and any form of tobacco are not allowed in the classroom or laboratory.

Student Participation in Dissections: During Honors Biology II, students will study the anatomy and physiology of several organisms which may include roundworms, clams, crayfish, grasshoppers, earthworms, starfish, sharks, frogs, fish, and fetal pigs as representative organisms.

As are ALL laboratory exercises in Honors Biology I and II, the laboratory investigations involving dissections are mandatory. All students enrolled in the course are expected to participate. However in consideration of religious and/or moral objections of isolated individuals, students wishing to be excused from the actual physical dissection may petition for a waiver by submitting a written request to the Honors Bio II Lead Instructor. Students requesting waivers should support their request with pertinent evidence or documentation. Requests for waivers MUST be submitted at least two weeks prior to the start of dissections. Full time biology faculty members reserve the right to grant or deny waivers. Appeals may be made to the Office of the Vice President for Academic Affairs. Students waiving the vertebrate and invertebrate exercises will be excused only from the actual physical dissection and expected to attend lab, master all materials presented in laboratory, and be responsible for all assignments and quizzes. All students are required to take the laboratory exams which include material from the animal dissection exercises. Pregnant students or students whose health is at high risk are advised to consult their physician about their attendance of the dissection labs. With proper documentation from the physician, alternate activities will be assigned to pregnant students.

C. Field Work:

Class activities may take place out-of-doors. Students may be required to read supplemental articles or papers on reserve in the library.

D. Other Evaluation Methods:

A term paper worth a possible 100 points is required of every student. Additional evaluation methods may be arranged at the discretion of the lead instructor and lecture instructor.

VI. Policies:

A. Attendance Policy:

Consistent tardiness and excessive absenteeism may lower the final grade. Pellissippi State
Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course.

B. Academic Dishonesty:

With any form of valid proof of dishonesty with regard to student work or testing, the instructor may elect from a range of actions. Academic dishonesty could lead to failure for the entire course on consultation with the lead instructor, department head, and dean. Additionally, dismissal from the institution is an option and may be sought.

C. Other Policies:

Classroom disruptions during lecture or laboratory, any form of communication during testing, or any other form of behavior that may prove distracting to others will not be tolerated and may lower the final grade.

Students are expected to work on biology related materials and participate in meaningful discussion where time permits.

Visitors are not allowed in the classroom or laboratory without instructor approval.