PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

GENERAL BIOLOGY II
BIOL 1120

Class Hours: 3.0  Credit Hours: 4.0
Laboratory Hours: 2.0  Date Revised: Spring 03

Catalog Course Description:

Plant and animal anatomy (tissues, organs, and organ systems), physiology, reproduction, and growth; microorganisms; fungi; ecology.

Entry Level Standards:

Eligible for enrollment in English 1010 and DSPM 0850 or higher.

Prerequisites:

None

Corequisites:

Students enrolled in lecture must be registered for the corequisite laboratory during the same semester.

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

Required Materials:

Optional Materials:
A study guide to accompany the textbook is available. New books are sold with the study guide and a guide for using the Internet.

I. Week/Unit/Topic Basis:

<table>
<thead>
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<th>Week</th>
<th>Topic</th>
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| 1    | Lecture: The Hidden World of Microbes  
Lab: No Labs |
| 2    | Lecture: The Fungi; The Plant Kingdom  
Lab: Monerans and Protistans #15 |
| 3    | Lecture: The Plant Kingdom; Land Plant Structure |
Lab: Fungi #16

4 Lecture: Plant Nutrition and Transport; Plant Reproduction and Development
Lab: Mosses, Ferns and Gymnosperms #18, 19, 20
Unit 1 - 100 pts. Chapters 21-23, 25, 26

5 Lecture: Plant Responses; The Animal Kingdom
Lab: Plant Structure #27

6 Lecture: The Animal Kingdom; Circulation
Lab: Angiosperms #21

7 Lecture: Circulation; Respiration
Lab: Sponges, Cnidarians, Flatworms and Roundworms #22, 23
Unit 2 - 100 pts. Chapters 24, 27, 28, 30

8 Lecture: Nutrition and Digestion; The Urinary System
Lab: Lab Practical 1

9 Lecture: The Urinary System; The Immune Response
Lab: Mollusks, Annelids, Arthropods and Echinoderms #24, 25
Unit 3 - 100 pts. Chapter 31-34

10 Lecture: The Endocrine System; The Nervous System
Lab: Vertebrate Dissections; Sheep Hearts #29, 30

11 Lecture: The Nervous System
Lab: Vertebrate Dissections; Sheep Kidneys and Brains #31

12 Lecture: The Muscles and Skeleton; Animal Reproduction
Lab: Circulation and Respiration; Blood Typing Handout #34, 35

13 Lecture: Animal Reproduction
Lab: Sensations and Reflexes; Senses Handout #32
Unit 4 - 100 pts. Chapters 35, 36, 38 & 39

14 Lecture: Population Growth and Regulation
Lab: No Labs

15 Lecture: Community Interactions; Ecosystems= Structure and Function
Lab: Ecology #38

16 Lecture: Ecosystems' Structure, Function and Diversity
Lab: Lab Practical 2
Unit 5 - 100 pts. Chapters 43-46

FINAL EXAM PERIOD - MANDATORY COMPREHENSIVE FINAL; worth approximately 12% of the final grade.

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 the structure of something (a tissue, organ, or organism) and its function. I.5, III.2
C. Better understand personal health related problems and demonstrate an ability to communicate more effectively with students health care providers. I.5, III.2

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. I.5, III.2

E. Demonstrate the ability to interpret related biological information and determine its validity. III.2, VI.1

F. Demonstrate an ability to reason and think more critically. III.1, III.2, VI.1

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

III. Instructional Processes*:

Students will:

1. Locate and evaluate related scientific information in the library and on the Internet. Information Literacy Outcome, Technological Literacy Outcome

2. Use related equipment and tools for making biological measurements and observations. Technological Literacy Outcome

3. Collect data, generate graphs and tables of the collected data, summarize the data and draw conclusions from the data. Numerical Literacy Outcome, Active Learning Strategy

4. Read and evaluate scientific writings. Communication Outcome

5. Develop a vocabulary that allows students to communicate more effectively with health care providers. Transitional Strategy, Communication Outcome, Personal Development Outcome

6. Participate in laboratory exercises and lecture activities that develop teamwork, problem solving, and data analysis. Problem Solving and Decision Making Outcome, Active Learning Strategy

7. Select a learning experience that promotes independent thinking and required sustained effort and time such as a research project, job shadowing, community service project, interviews or field trip. Personal Development Outcome, Transitional Strategy

8. 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. Personal Development Outcome, Cultural Diversity and Social Adaptation Outcome

*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 library and on the Internet. Evaluate biological information they read about or see on TV.  E, F

9. Interpret and draw conclusions from data presented in graphic form.  E, F

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

V. Evaluation:

A. Testing Procedures:

Each lecture unit will be evaluated using one or more tests totaling 100 points. Exams will be a mix of discussion questions and objective questions. There are no makeup lecture tests. There will be a comprehensive final for the course worth 100 points. The comprehensive final may be used to take the place of one missed exam if there is evidence of a valid and reasonable excuse. The comprehensive final exam score may also be used to replace the lowest unit exam score if all exams were attempted. The additional 50 points associated with lecture will be earned by doing a variety of activities to be determined by your instructor. The activities may include reading and summarizing articles, writing a position paper, attending a seminar, and summarizing a videotape that was viewed. The 15 points of assignments associated with lab will be determined and announced by your laboratory instructor.

B. Laboratory Expectations:

Students are expected to go to the appropriate laboratory for which they are enrolled and complete the assignments in a timely manner. Laboratory work will not be accepted late. Makeup laboratory sessions and practicals may be possible within the same laboratory session week where approvals have been given and space is available. Students should notify their lab instructor of their need to miss lab and should attempt to contact the instructor of the lab they wish to attend. Students are required to read the scheduled lab exercise before coming to class. To encourage preparation, five pre-lab quizzes will be given on randomly selected dates. Students must be present to take the pre-lab quiz. There are NO make-ups.
After each exercise, students are required to complete the assigned post-lab questions. Students are encouraged to work cooperatively together to complete the questions, but not to plagiarize notebook work. These post-lab questions will be collected and graded on five randomly selected dates. It is the student's responsibility to turn in post-lab questions, if collected, to their lab instructor in a timely fashion. Post-lab questions will not be accepted late. Students may not make up more than one lab in a semester. Missing more than four labs in a
semester will result in failure of the entire course. 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 Biology 1120, students will study the anatomy and physiology of vertebrates using fetal pigs and rats as representative organisms. The anatomy and physiology of invertebrates will be studied using clams, crayfish, earthworms and starfish as representative organisms. As are ALL laboratory exercises in Biology 1110 and 1120, 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 Biology Program Coordinator, Room 232 Alexander Building. Students requesting waivers are encouraged to support their request with pertinent evidence or documentation. Full time biology faculty members reserve the right to grant or deny waivers. Appeals may be made to the Office of the vice president of 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 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:

Students may be required to read supplemental articles or papers on reserve in the library.

D. Other Evaluation Methods:

Other evaluation methods may be arranged at the discretion of the lead instructor and lecture instructor.

E. Grading Scale:

<table>
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<tr>
<th>Point Distribution:</th>
<th>Laboratory</th>
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<tbody>
<tr>
<td>Lecture tests and Assignments</td>
<td>Laboratory</td>
</tr>
<tr>
<td>Unit 1  100 pts.</td>
<td>Post-lab questions  50 pts. (5x10)</td>
</tr>
<tr>
<td>Unit 2  100 pts.</td>
<td>Pre-lab quizzes  25 pts. (5x5)</td>
</tr>
<tr>
<td>Unit 3  100 pts.</td>
<td>Leaf collection/dich.</td>
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<tr>
<td>Unit 4  100 pts.</td>
<td>key exercise  5 pts.</td>
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<tr>
<td>Unit 5  100 pts.</td>
<td>Lab Practical - 1  50 pts.</td>
</tr>
<tr>
<td>Comp. Final  100 pts.</td>
<td>Lab Practical - 2  50 pts.</td>
</tr>
<tr>
<td>Assignments  50 pts.</td>
<td>Assignments  15 pts.</td>
</tr>
<tr>
<td>TOTAL  650 pts.</td>
<td>TOTAL  215 pts.</td>
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Letter grades will be distributed as follows:
A  90% and above 778 or more points earned
B+  87-89%  752-777 points
B  80-86%  692-751 points
C+  77-79%  666-691 points  
C    70-76%  604-665 points  
D   60-69%  519-603 points  
F  59% and below 518 or fewer

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. Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent.

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.