RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

BIOL-111 Principles of Biology

I. Basic Course Information

A. Course Number and Title: BIOL-111 Principles of Biology

B. Date of Proposal: November 2005

C. Sponsoring Department: Science & Engineering

D. Semester Credit Hours: 4

E. Weekly Contact Hours: Lecture: 3
Laboratory: 2

F. Prerequisite: MATH-023 Algebra Mod 2 Linear Behavior

G. Laboratory Fees: Yes

II. Catalog Description

Prerequisite: MATH-023 Algebra Mod 2 Linear Behavior
This course emphasizes common processes and structures among living things, from energy transfer to natural selection, from chemical structure to organism structure. Included are principles governing energetics, reproduction and development, inheritance and evolution. Credit will not be given for both Principles of Biology and General Biology I (BIOL-101).

III. Statement of Course Need

Principles of Biology (BIOL-111) is a 4 credit laboratory course satisfying the general education requirements in Mathematics and Science and available as a science elective to non-science majors.

IV. Place of Course in College Curriculum

A. Principles of Biology (BIOL-111) is a 4 credit laboratory course satisfying the general education requirements in Mathematics and Science and available as a

- Laboratory science elective for non-science majors.

B. Course transferability: The course transfers as a lab science general elective.

V. Outline of Course Content

1. Introduction: Biology Today
2. Evolution: Unifying theme
3. The Process of Science
4. Essential Chemistry for Biology
5. The Molecules of Life
6. A Tour of the Cell
7. The Working Cell
8. Cellular Respiration
9. Photosynthesis
10. The Cellular Basis of Reproduction and Inheritance
11. Patterns of Inheritance
12. Molecular Biology of the Gene
13. Gene Regulation
14. DNA Today
15. Evolution and Diversity

VI. Educational Goals and Learning Outcomes

Educational Goals

After completion of this course, the student will be able to:

1. Develop an informed understanding of the fundamental concepts in biological sciences (G.E. 1)
2. Demonstrate the fundamentals of problem solving and critical thinking (G.E. 2)

Learning Outcomes

At the conclusion of the course, students will be able to:

1. Demonstrate basic laboratory techniques
2. Organize and analyze data in a comprehensive manner
3. Critique scientific papers
4. Apply biological concepts in meaningful ways
5. Develop oral and written communication skills

VII. Modes of Teaching and Learning

- lecture/discussion
- guest speakers
- laboratory
- student collaboration

- computer assisted instruction

VIII. Papers, Examinations, and other Assessment Instruments

Given the outcomes described above, LIST which of the following assessment methods may be used:

- laboratory products
- written analyses of reading assignments
- computer simulations

IX. Grade Determinants

- Examinations: lecture and final exams
- Laboratory exams
- Reseach paper
- Quizzes

X. Texts and Materials

Suggested Texts:

- ***Essential Biology***, Campbell, Reece & Simon, Benjamin Cummings
- ***Principles of Biology Laboratory,*** RVCC Science Dept, Benjamin Cummings.

XI. Resources

CATT equipped classroom;
Biology laboratory facilities, including computers.

XII. Honors Options

Not applicable