RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

BIOL 102 General Biology II

I. Basic Course Information

A. Course Number and Title: BIOL 102 General Biology II

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Fall Year: 2023

D. Effective Term: Fall 2024

E. Sponsoring Department: Science & Engineering

F. Semester Credit Hours**: 4**

G. Weekly Contact Hours**:** 6

Lecture**:** 3
Laboratory**:** 3
Out of class student work per week: 7.5

H. ☒ Prerequisite (s): General Biology I (BIOL 101) and Pre-Calculus I (MATH 112).
☐ Corequisite (s):
☐ Prerequisite (s) and Corequisite (s):

I. Additional Fees**:** None

J. Name and E-Mail Address of Department Chair and Divisional Dean at time of approval**: Dr. Marianne Baricevic, Marianne.Baricevic@raritanval.edu; Dr. Sarah Imbriglio, Sarah.Imbriglio@raritanval.edu**

II. Catalog Description

Prerequisites: General Biology I (BIOL-101) and Precalculus I (MATH-112)

This lecture and laboratory course considers the diversity of living things, molecular biology, evolution and ecology. Lecture and laboratory will use an investigative approach to these topics and stress both individual and team study related to theory, scientific methods and techniques, experimental design, and data analysis and interpretation.

III. Statement of Course Need

A. This is the second course in a two-course sequence providing an in-depth study of biological sciences. General Biology II is a 4 credit general education laboratory science course designed for students majoring in science and/or science related disciplines.
B. In the laboratory portion of the course, students will learn to work independently on projects including an aquatic ecology and molecular biology project.
C. This course generally transfers as a program requirement and/or a free elective.

IV. Place of Course in College Curriculum

A. This course is a free elective.
B. This course is a general education laboratory science course.
C. This course meets a program requirement in the following AS programs: Biological Sciences AS Degree Program, Environmental Science, Engineering – Biomedical Track and the AA Environmental Studies program. This course is a program option for Physics AS, Mathematics AS and Computer Science AS.
D. Course transferability; for New Jersey schools go to the NJ Transfer website, www.njtransfer.org. For all other colleges and universities go their individual websites.

V. Outline of Course Content

A. Scientific Inquiry
    1. Independent research projects
    2. Data analysis and statistics
    3. Public Health/policy issues
B. Ecology
    1. Introduction to Ecology
    2. Organismal, Community, and Ecosystem Ecology
    3. Aquatic ecology
C. Molecular Biology
    1. DNA tools and application
    2. DNA sequence analysis
D. Mechanisms of Evolution
    1. An Introduction to Evolution
    2. Population Genetics
    3. Origin of Species/Macroevolution

VI. A. <u>Course Learning Outcomes</u>:

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

1. Apply the scientific method to analyze a problem and draw conclusions from data and evidence. (GE-3*)
2. Construct graphs and charts, interpret them, and draw appropriate conclusions (GE-2*)

3. Develop oral and written communication skills. (GE-1)
4. Demonstrate an informed understanding of the fundamental concepts in biological sciences and apply those biological concepts to real world societal issues. (GE-3 *)
5. Demonstrate basic laboratory techniques in molecular genetics and ecology.
(* Embedded critical thinking)

B. Assessment Instruments

Given the outcomes described above, the following assessment methods may be used:
1. Warm-up assignments
2. Laboratory activities
3. In class activities or discussions

VII. Grade Determinants

A. Data interpretation (Required)
B. Exams
C. Laboratory reports
D. Laboratory quizzes
E. Oral presentation

Given the goals and outcomes described above, the following formats, modes, and methods for teaching and learning may be used in the course:
A. lecture/discussion
B. computer-assisted instruction
C. laboratory
D. student oral presentations
E. Group research projects

VIII. Texts and Materials

A. suggested textbook
B. primary sources
C. web sources

Sample of specific text that may be featured:
Campbell's Biology, Urry et al. Pearson.

Please Note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.

IX. Resources

Students may need to use library databases and other library resources for research assignments and/or computers.

X. Check One: ☐Honors Course ☐Honors Options ☒ N/A