I. Basic Course Information

A. Course number and Title: BIOL-102H- General Biology II Honors

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Fall Year: 2018

D. Effective Term: Fall 2019

E. Sponsoring Department: Science & Engineering

F. Semester Credit Hours: 4

G. Weekly Contact Hours: 6

   Lecture: 3
   Lab: 3
   Out of class student work per week: 7.5

H. Prerequisites: General Biology I (BIOL-101) or General Biology I Honors (BIOL-101H) Precalculus I (MATH-112) or Precalculus Honors (MATH 114H); GPA 3.5 or permission of instructor.

I. Laboratory Fees: Yes

J. Department Chair & Divisional Dean: Dr. Marianne Baricevic, marianne.baricevic@raritanval.edu, Dr. Sarah Imbriglio, sarah.imbriglio@raritanval.edu

II. Catalog Description

Prerequisites: General Biology I (BIOL-101) or General Biology I Honors (BIOL-101H) and Precalculus I (MATH 112) or Precalculus I Honors (MATH 114H); GPA 3.5 or permission of instructor.

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. The honors course will fulfill a similar requirement for the students enrolled in the college’s Honors College Program.

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: Biology, Environmental Science, General Science/Pre Health Professional, Pre-Medical Professional, Pre-Pharmacy, 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. General Education and Course Learning Outcomes

A. General Education Learning Outcomes:

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

A. General Education Learning Outcomes:

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

(* Embedded critical thinking)

B. Course Learning Outcomes:

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

1. Demonstrate an informed understanding of the fundamental concepts in biological sciences and apply those biological concepts to real world societal issues.
2. Demonstrate basic laboratory techniques in molecular genetics and ecology.

C. Assessment Instruments:

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

1. Warm-up assignments
2. Case studies
3. Laboratory activities
4. In class discussions or debates

VII. Grade Determinants

A. Data interpretation (Required)
B. Literature research and analysis
C. Exams
D. Laboratory reports
E. Laboratory quizzes
F. Oral presentation

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

VIII. Text 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. Honors Option: This is an honors course