RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

ENVI-201 Environmental Capstone

I. Basic Course Information

A. Course Number and Title: ENVI-201 Environmental Capstone

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Spring Year: 2022

D. Effective Term: Fall 2022

E. Sponsoring Department: Science & Engineering

F. Semester Credit Hours: 1

G. Weekly Contact Hours: Lecture: 2
Laboratory: 0
Out of class student work per week: 4

H. Prerequisites/Corequisites: ENVI-105, BIOL-102, and ENVI-101 (or ENVI-102)

I. Laboratory Fees: No

J. Name and Telephone Number or E-Mail Address of Department Chair and Divisional Dean at time of approval: Marianne Baricevic (marianne.baricevic@raritanval.edu); Sarah Imbriglio (sarah.imbriglio@raritanval.edu)

II. Catalog Description

Prerequisites: ENVI-105, BIOL-102, and ENVI-101 (or ENVI-102). Offered in Spring Semester Only.
A capstone class where students will review, synthesize and articulate what they have learned in ecology and environmental science. The class will make use of hands-on research and case studies to reinforce skills in scientific research and communication in the interest of solving real-world environmental problems. Students will also be introduced to areas of environmental specialization and major job sectors in order to help them identify and prepare for various academic and career pathways. One weekend field trip required.

III. Statement of Course Need

A. This course is the capstone course required for students in their fourth semester of study in the Environmental Science A.S. and Environmental Studies A.A. degree programs. This course challenges students to integrate the concepts and skills learned in ecology, environmental science, and other coursework and develop scientifically informed, evidence-based solutions to real-world environmental problems. This includes effective communication of scientific results to both the scientific community and the general public. Doing so provides them with opportunity to reinforce what they have learned in earlier studies and translate it to higher-level applications needed to be successful academically and professionally. Students will also be exposed to major academic and professional pathways in order to prepare them for transfer and employment.

B. No laboratory – scientific methods will be integrated into regular lecture activities and projects

C. Transferability of this course

a. This course does not ~~generally~~ transfer as a general education science course.
b. This course generally transfers as an ecology or environmental science program requirement, for those that require 1-credit capstone classes.
c. This course generally transfers as a 1-credit ecology or environmental science elective.

IV. Place of Course in College Curriculum

A. Free Elective

B. This course does not serve as a General Education course.

C. This course is a required course for the Environmental Science Option A.S. and the Liberal Arts (Environmental Studies Option) A.A.

D. Course transferability: This course is similar to courses with study abroad/travel components taught at other institutions. To see course transferability: a) for New Jersey schools, go to the NJ Transfer website, www.njtransfer.org; b) for all other colleges and universities, go to the individual websites.

V. Outline of Course Content

A. Applied Environmental Science
    1. Integrated Research Case Study
        a. Literature research and resources
            i. Library databases
            ii. Literature review
            iii. Citation styles for environmental sciences
        b. Environmental data collection and management
            i. Online data platforms and apps (ArcCollector)
        c. Data analysis and interpretation
            i. quality control and data management
            ii. Summarizing and representing data (MS Excel)

ii. Statistical testing and interpretation (R)
iii. Spatial Analysis and Map-making (GIS)

d. Environmental communication and outreach
a. Scientific poster presentations
b. Public presentations, writing and outreach

B. Academic and Career Pathways
1. Areas of Environmental Specialization
i. Guest lectures
2. Degree programs
i. Transfer institutions
3. Career pathways
i. Sector analysis and trade-offs
ii. Resumes and Cover Letters
iii. Jobs databases

VI. General Education and Course Learning Outcomes

A. General Education Learning Outcomes:

At the completion of the course, students will be able to:
1. Communicate and collaborate with others in a clear, logical manner about environmental issues (GE-NJ1)
2. Use technological tools to acquire, analyze and integrate environmental data into planning and management solutions (GE-NJ 4, IL)
3. Apply quantitative reasoning to interpret data (GE-NJ3 *)

B. Course Learning Outcomes:

At the completion of the course, students will be able to:
1. recognize and discuss local environmental problems and the scientific methods used to study and address them
2. compare and contrast scientific results in a critical manner;
3. develop solutions to environmental problems;

C. Assessment Instruments

Given the outcomes described above, the following assessment methods may be used:
A. laboratory products
B. research papers
C. essays
D. poster presentations
E. discussions

VII. Grade Determinants

The following may be used to determine the final grade:

F. research project
G. presentations
H. service learning
I. laboratory assignments
J. homework assignments

Given the goals and outcomes described above, the primary formats, modes, and methods for teaching and learning that may be used in the course include:

K. lecture/discussion
L. small-group work
M. computer-assisted instruction (GIS, remote sensing, statistical software)
N. guest speakers
O. laboratory and field work
P. student oral presentations
Q. student collaboration

VIII. Texts and Materials

The following types of course materials may be used:

A. Articles from scientific journals and periodicals
B. Books and Book Reviews

Hanna-Attisha, M. 2019. What the Eyes Don't See. Penguin Books, New York

C. Internet Databases and Information Sources
D. Laboratory and Computer Equipment

(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

A. RVCC passenger van;
B. Library journal databases and other library resources;
C. Natural areas on campus and elsewhere;
D. RVCC greenhouse and related supplies;
E. Environmental monitoring, GPS, and forest ecology field equipment;
F. Computers with Excel, ArcMAP (GIS), and SAS-JMP statistical software;