

**RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE**

**SCIE - 210H INDEPENDENT RESEARCH IN SCIENCE AND
ENGINEERING I -HONORS**

I. Basic Course Information

A. Course Number and Title: SCIE-210H

B. New or Modified Course: Modified

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

D. Effective Term: Fall 2023

E. Sponsoring Department: Science & Engineering

F. Semester Credit Hours: 3

G. Weekly Contact Hours: Lecture: 0
 Laboratory: 0
 Independent Research: 135 hours
 Out of class student work per week:

H. Prerequisite (s): GPA 3.5; permission of instructor in Science & Engineering department.

Corequisite (s):

Prerequisite (s) and Corequisite (s):

Prerequisites/Corequisites:

I. Additional 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 and Sarah Imbriglio, sarah.imbriglio@raritanval.edu

II. Catalog Description

Prerequisite: Minimum GPA of 3.5; permission of instructor in Science and Engineering department.

Independent research provides students with an opportunity to engage in scientific research with the guidance of a faculty member. In consultation with and approval of the faculty member, students select a research topic, perform a literature search, design and complete appropriate research. Students will be required to complete a formal paper detailing the research; including the purpose, methods, results and conclusions. Additional culminating experiences, as directed by the instructor, may include an oral presentation, a poster display at a local or regional conference, or submission of a research paper to a journal.

III. Statement of Course Need

- A. The course provides an opportunity for students to conduct independent scientific research on a topic of interest. It may strengthen their applications to transfer or graduate institutions.
- B. This is a lab course. A lab setting is required to conduct scientific research.
- C. This course is not designed for transfer.

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 not a requirement for any programs.
- D. 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. Introduction to research.
- B. Literature research techniques.
- C. Introduction to scientific writing.
- D. Oral presentation of scientific research.

VI. A. Course Learning Outcomes:

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

1. Locate, review, interpret and analyze scientific information. (GE-IL*)
2. Apply fundamental concepts in engineering and science (GE-3*)
3. Demonstrate understanding of the scientific method to solve a problem (GE-3)
4. Analyze and interpret data (GE-1)
5. Write a formal research proposal and effectively communicate scientific research findings (GE-1)

B. Assessment Instruments

1. performance of laboratory techniques
2. presentation of research findings
3. analysis of reading assignments
4. other, as specified by instructor

VII. Grade Determinants

- A. performance of laboratory techniques
- B. presentation of research findings
- C. analysis of reading assignments
- D. other, as specified by instructor

Primary formats, modes, and methods for teaching and learning that may be used in the course:

- A. laboratory
- B. presentations
- C. independent study

VIII. Texts and Materials

- A. Lab notebook
- B. primary sources
- C. web sources
- D. other computer-based sources

The following statement should be included in the outline:

(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 critical research assignments and/or computers.