RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

SCIE-296H
Science HONORS RESEARCH CAPSTONE

I. Basic Course Information

A. Course Number and Title: SCIE-296H, Science Honors Research Capstone

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. Prerequisites/Corequisites: Student must be enrolled in his or her last Honors College academic year before graduation.

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. II. Catalog Description

Prerequisite: Student must be enrolled in his or her last Honors College academic year before graduation.

This course is intended to guide sophomore Honors College students from all disciplines through the stages of conducting a semester-long science research project in Science and Engineering. In consultation with and approval of a faculty mentor, students select a research topic, perform a literature search, design and complete appropriate research. Students will be required to complete

a formal paper or project detailing the research. Additional culminating experiences, as directed by the instructor will include an oral presentation or a poster display.

III. III. Statement of Course Need

A. Research on the value of intensive undergraduate research experiences abounds, and requiring enrollment in this research capstone will provide RVCC Honors College students with: a strong student-faculty collaboration and scholarship; an original research to the discipline; an understanding of intensive research in preparation for classes in the major or for more intensive graduate school research; and a high profile project that will aid in transfer applications.

Class will consist of five major components: library instruction, research and guidance with faculty member, group discussions on topics and progress, the final written (or artistic) project, and a formal presentation.

B. This course may have a lab component

C. This course is not designed for transfer, but dependent on the transfer institution may transfer as a Science program 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 meets a program requirement for the Honors College.
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

Class will consist of the following major components:

1. Information literacy instruction to support research in Science or Engineering
2. Advanced Science or Engineering topic exploration
3. Literature research utilizing discipline-specific information sources, databases, interlibrary loan, etc.
4. Background research and discussion of the capstone topic with capstone Science or Engineering faculty advisor to create a timeline of completion, i.e., chemistry majors will conduct a research project on a topic in chemistry with guidance from a chemistry faculty member. Disciplines relevant to SCIE-296H include Biology, Chemistry, Engineering, Environmental Science, and Physics.
5. Develop methods to understand and analyze the Science or Engineering research topic
6. Application of Science or Engineering research topic and results to relevant situations

7. Research and guidance with capstone Science or Engineering faculty advisor via weekly consultations to discuss results, assess progress and adjust timeline as needed.
8. The final Science or Engineering capstone project
9. A formal capstone presentation (Capstone Day).

VI. A. Course Learning Outcomes:

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

1. Logically and persuasively state and support orally and in writing their findings from the research or creative project. (GE-1*)
2. Evaluate relevance and authority of information. (GE-IL)
3. Create and revise drafts and/or review the process to address capstone objectives and employ standard appropriate editing practices for the specified discipline. (GE-1)
4. Use discipline-specific information sources and/or databases to better understand the research topic and find existing research in the field. (GE-IL)
5. Complete a research project or develop a product that incorporates newly acquired and prior information, and is delivered in a medium appropriate to the discipline and intended audience. (GE-IL, 1)
6. Cite sources, compile a bibliography, and make consistent and correct use of a citation style appropriate to the discipline (GE-IL)

(*Embedded critical thinking)

B. Assessment Instruments

1. Research process
2. Final capstone product
3. Capstone project presentation

VII. Grade Determinants

A. Research process
B. Completion of agreed upon timeline deadlines
C. Revisions of drafts and/or review of artistic process
D. Final capstone product oral presentation

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

A. Lecture/discussion
B. Small-group work
C. Computer-assisted instruction
D. Guest speakers and lecturers
E. Student oral presentations

F. Student-faculty collaboration
G. Independent study and research

VIII. Texts and Materials

Any texts and materials will be dependent upon individual capstone project requirements.

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

A. Databases
B. Archives
C. Subject matter experts