RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

SCIE 101 The Nature of Science

I. Basic Course Information

A. Course Number and Title: SCIE 101 The Nature of Science

B. New or Modified Course: Modified

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

D. Effective Term: Fall 2023

E. Sponsoring Department: Science & Engineering

F. Semester Credit Hours**: 3**

G. Weekly Contact Hours**:** Lecture**:** 3
Laboratory**:** 0
Out of class student work per week: 6

H. ☐ Prerequisite (s): none
☐ Corequisite (s): none
☐ Prerequisite (s) and Corequisite (s): none

I. Additional Fees**:** none

J. Name and E-Mail Address of Department Chair and Divisional Dean at time of approval**:** Marianne Baricevic, marianne.baricevic@rartianval.edu and Sarah Imbriglio, sarah.imbriglio@raritanval.edu

II. Catalog Description

There are no prerequisites. In this course, students will examine the development of scientific theories and discuss how science is viewed by the public through various forms of media sources. The use of the scientific method to conduct research and experiments will encourage students to distinguish credible science from false scientific claims. The importance to society of scientists and citizens making informed decisions on science/technology issues are stressed.

III. Statement of Course Need

A. Science literacy is severely lacking at the local, national and global levels of society. However, science literacy is necessary to understand and make informed decisions of science and technology issues. This course will use inquiry and research to provide a rich introduction to the scientific method, scientific tools and technology, and various fields of science, including medicine and health, environmental science, biotechnology, and other areas of current, popular science and pseudoscience. The course will engage students in the process of critical thinking and discovery, and will reinforce the specific habits that generate a scientific perspective on the world.

B. There is no lab component

C. This course generally transfers as a non-lab general education science course.

IV. Place of Course in College Curriculum

A. Free Elective (This applies automatically to all college level credit courses in the College.)
B. This course serves as a General Education course in Science.
C. 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. What is science vs. pseudoscience?
B. History of scientific influence on society
C. The scientific method and research tools
    1. Observation and research
    2. Hypothesis synthesis
    3. Testable predictions and experimentation
    4. Data interpretation, results and evidence
    5. Theory formation
D. Media literacy
    1. Television
    2. Print
    3. Internet
E. Implications for false scientific claims
    1. Ethical
    2. Legal
    3. Social
F. Scientific topics of discussion
    1. Ecology
    2. Climate

3. Nutrition
4. Biotechnology
5. Medicine
6. Genetics
7. Other current topics

VI. A. Course Learning Outcomes:

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

1. Identify and critically evaluate sources of scientific information. (GE-IL*)
2. Discuss the ethical implications of being scientifically responsible and think critically about the influence of science on society (GE-ER*).
3. Use the scientific method to evaluate a problem and generate conclusions. (GE-3).
4. Demonstrate the use of inquiry to validate current scientific claims.
5. Distinguish between science and pseudoscience and demonstrate scientific literacy.
6. Identify and discuss the roles of media sources in the dissemination of science to the public
7. Discuss the need for scientific literacy as an informed citizen.

(* embedded critical thinking)

B. Assessment Instruments

1. Research papers (required)
2. Experiments using the scientific method (required)
3. Essays
4. Discussions (required)
5. Presentations (required)
6. Tests

VII. Grade Determinants

A. Research papers (required)
B. Essays
C. Discussions (required)
D. Presentations (required)
E. Tests

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
B. small-group work
C. computer-assisted instruction

D. guest speakers
E. laboratory
F. student oral presentations
G. simulation/role playing
H. student collaboration
I. independent study
J. other (please describe)

VIII. Texts and Materials

LIST which of the following types of course materials will be used. Specify title and publication information about textbooks and any other major text sources or other materials.

A. lecture/discussion
B. experiments
C. small-group work
D. computer-assisted instruction
E. guest speakers
F. student oral presentations
G. student collaboration
H. independent study
I. interviews/surveys

(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. Computer with internet and research capabilities

X. Honors Options: No honors option