



SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) DIVISION
1400 TANYARD ROAD, SEWELL, NJ 08080
856-468-5000

SCI 105: Introduction to Experimentation

SYLLABUS

LECTURE HOURS/CREDITS: 4/4

CATALOG DESCRIPTION

Prerequisite:

An introductory course exploring the Scientific Method and the concepts of experimental design. This is a one-credit course designed for students pursuing careers in science or students wanting to have a better understanding of the scientific process.

TEXTBOOK AND COURSE MATERIALS

It is the **responsibility of the student** to confirm with the bookstore and/or their instructor the textbook, handbook and other materials required for their specific course and section.

Please see current textbook prices at rcgc.bncollege.com

EVALUATION AND ASSESSMENT

Grading Distribution

Individual instructors may include the following assessment(s): <ul style="list-style-type: none">• Exams• Quizzes• Class Discussions• Written Assignments• Attendance and Participation	Grading to be determined by individual instructors
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Grading Scale Example

The grading scale for each course and section will be determined by the instructor and distributed the first day of class.

SCI 105 CORE COMPETENCIES

This course focuses on one of RCGC's Core Competencies:

- Scientific Knowledge and Reasoning

STUDENT LEARNING OUTCOMES: SCI 105 – Introduction to Experimentation

Successful completion of SCI 105 will help students:	RCGC Core Competencies	Evaluation / Assessment
1. Demonstrate an understanding of steps in the scientific method	- Scientific Knowledge and Reasoning	- Quizzes - assignments
2. to set up a testable null hypothesis.	- Scientific Knowledge and Reasoning	- Quizzes - project
3. to set up an experiment that will test a hypothesis.	- Scientific Knowledge and Reasoning	- Project - Quizzes
4. to critically evaluate an experimental design.	- Scientific Knowledge and Reasoning	- peer review

PURPOSE OF THE COURSE

An introductory course exploring the Scientific Method and the concepts of experimental design. This is a one-credit course designed for students pursuing careers in science or students wanting to have a better understanding of the scientific process.

GENERAL OBJECTIVES OF THE COURSE

1. To present the basic concepts of the Scientific Method.
2. To develop scientifically literate citizens through an understanding of the methods of science and the role of science in society and everyday living.
3. To provide opportunities for growth in the functional understanding of the Scientific Method through the completion of a small project.
4. To provide an opportunity to critically evaluate experimental designs.

COURSE POLICIES

ATTENDANCE – Students attain maximum academic benefit through regular class attendance. Therefore, students are expected to attend all class sessions for which they are scheduled. If you miss a class, it is your responsibility to make up all material missed. You should make arrangements with someone who attended the class to get copies of handouts and notes. Attendance is mandatory and will be recorded every day in class.

WEB ENHANCED – Students will access eLearning for weekly readings.

QUIZZES – A short quiz based on each homework assignment will be given at the very beginning of the class. These quizzes cannot be made up so it is important that you not be late for class. Failure to take a quiz will result in a zero for all questions asked. Online quizzes may also be assigned periodically.

PROJECT– Each student will develop a hypothesis and set up an experimental design to test the hypothesis using principles learned in class.

MAKE UP POLICY – Missed quizzes or assignments will result in a zero (0) grade for that work.

ACADEMIC INTEGRITY – In cases of cheating, plagiarism and/or fabrication, faculty have the authority to impose an academic sanction that is reasonable and commensurate with the violation (Rules and Regulations #R-8019). Students will receive grade of “0” for cheating violation. Make sure you reference your sources of information, including internet sources.

ELECTRONICS – Use of cell phones, MP3 players, pagers, and similar electronic devices is not permitted during class time. Approval must be gained from the instructor prior to student use of audio or video recording devices in class.

SCI 105 TOPICAL OUTLINE

1. What is science and “ The Scientific Method”
 2. The goal of experiments
 3. How to set up and run experiments
 - a) Background research – reading scientific papers
 - b) Hypotheses
 - Null and Alternative Hypotheses

YOUR PROJECT

Develop a hypothesis to test.

Decide which question to address next, and clearly state your question.

This process should include:

 - A list of hypotheses to be tested or effects to be estimated.
 - An ordering of these hypotheses or effects by importance.
 - An ordering of these hypotheses or effects by logical or time sequence if some should be examined before others. - c) Experimental Design
 - variables
 - treatments
 - controls
 - replication
 - measurements
 - cost/budget

YOUR PROJECT

Design an experiment to test your hypothesis

 - d) Running an experiment
 - e) Data analysis, significance
- YOUR PROJECT**
- Show anticipated results
- g) Presenting results – graphs, tables, papers
 - f) Drawing conclusions
4. Peer reviews of student projects.

Affirmative Action Statement

The Board of Trustees is committed to providing an educational and workplace environment free from unlawful harassment and discrimination. All forms of employment and educational discrimination and harassment based upon race, creed, color, national origin, age, ancestry, nationality, marital or domestic partner or civil union status, sex, pregnancy, gender identity or expression, disability, liability for military service, affectional, or sexual orientation, atypical cellular or blood trait, genetic information (including refusal to submit to genetic testing) are prohibited and will not be tolerated.

For questions concerning discrimination contact Almarie J. Jones, Executive Director, Diversity and Equity, Affirmative Action/Title IX Officer at 856-415-2154 or ajones@rcgc.edu.

For disability issues, contact Dennis M. Cook, Director, Department of Special Services, ADAAA/504 Officer at 856-415-2265 or dcook@rcgc.edu.

Department of Special Services

The Department of Special Services, located in the Instructional Center, room 425A, welcomes students of all abilities. The staff members in Special Services are committed to providing support services and ensuring equal access to eligible students with documented disabilities as outlined by the Americans with Disabilities Act (ADA) and the Americans with Disabilities Act with Amendments Act (ADAAA).

To maximize the potential of eligible students who self-identify, the Special Services staff provides an array of support services which may include extra time for tests and quizzes, testing in a separate location, advisement, interpreters, scribes, tutors, assistive technology (such as magnification devices and audio amplification), touch screen computers, audio books and note-taking assistance.

As students embark on their academic journey, they are encouraged to meet with staff members to identify, develop and implement support services that are in accord with their individual academic needs. Students are also encouraged to make use of other college support services that are available to all RCGC students currently enrolled in credited academic courses, such as tutoring services and the college library, which offer online information research and other materials needed to complement their studies.

Students registered with the Department of Special Services and who plan to earn an associate degree, further their education and transfer to a four-year institution, or enter the workforce, are encouraged to choose a corresponding program of study (college major) as soon as possible. The Special Services staff assists enrolled students with additional support that focuses on advancing students through their selected programs of study towards a goal of graduating.

Students who request academic support from the Department of Special Services can be assured that confidentiality will always be maintained. Accommodations are provided to address the special needs of individuals with disabilities under Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) of 1990 together with the ADA Amendments Act of 2008 (ADAAA). Under these acts, the office advocates a user-friendly campus for accessibility and a learning-friendly campus for academic success.

For more information or to schedule an appointment to meet Special Services staff, please call 856-415-2265 or visit RCGC.edu/SpecialServices.

To Register with Special Services

Students must follow these steps:

- Complete and submit the Student Profile form. Access the [Student Profile Form](#).
- Submit documentation detailing the student's disability. Support services will not be granted without documentation specifying the student's disability. Documentation should include the following information:
 - a. Diagnosis with written evaluation of current disability;
 - b. Date the student was diagnosed;
 - c. Tests used to reach diagnosis;
 - d. Credentials of the medical professional conducting evaluation; and
 - e. How the disability affects daily activities and/or academic performance.
- By clicking on the following links, students can download the [Special Education Records Release Form](#) and/or Medical Release Form to present to their medical care professional.

- Contact the Special Services office to schedule a meeting with a staff member.
 1. Students should schedule a meeting after submitting the [Student Profile Form](#), proper documentation and completing the College's placement test. (Click on [Special Accommodations for Placement Testing](#) to determine whether student should arrange his/her placement test through the Special Services office or the general Testing Center.
 2. During the meeting, the student and staff member will discuss his or her disability and determine eligible accommodations.

Accommodations

Students who qualify for accommodations are encouraged to register with the Department of Special Services at RCGC before they begin their academic career at Rowan College. This allows students to take advantage of any special accommodations and auxiliary aids that they might need and be eligible to receive.

- **Special accommodations** include but are not limited to extended time on tests, private test rooms to complete tests with the assistance of a reader or scribe, as well as a distraction-free test room.
- **Auxiliary aids** include but are not limited to note takers, tape recorders, large display calculators, interactive calculators, desktop magnifiers, large-screen computer monitors, touch-screen computer monitors, touch-screen laptop computers and JAWS® software. More information about adaptive technology can be found on the [technology](#) link. Students are responsible for identifying which accommodations and auxiliary aids they require for academic support.

Confidentiality

Students who register with the Department of Special Services are assured that their information is kept confidential.

In addition, the student's transcript will not indicate that the he or she is registered with the Department of Special Services. The student's specific special need is not disclosed to the student's instructors. However, accommodation letters are sent to each of the student's professors if the student needs testing accommodations or accommodations in the classroom. It is the student's choice whether or not to disclose the specifics of his or her special need.