

Course of Study
Academy of Biological Sciences

Freshman

Microsoft Office & Digital Literacy	5 credits
Honors Lab Chemistry for Biological Science	5 credits
Principles of Biomedical Science	5 credits
Fitness for Life I	5 credits
Honors English I	5 credits
Honors US History I	5 credits
Honors Level Mathematics	5 credits
Honors Lab Biology	5 credits
Honors Spanish I or Italian I	5 credits

Sophomore

College Level General Biology for Biological Science	7.5 credits
Medical Interventions	7.5 credits
Fitness for Life II	5 credits
Honors English II	5 credits
Honors US History II	5 credits
Honors Level Mathematics	5 credits
Financial Literacy (online)	5 credits
Honors Spanish II or Italian II	5 credits
Performing Arts	5 credits

Junior

College Level General Biology II	7.5 credits
Biotechnician Assistant Certification (Semester 2)	2.5 credits
Advanced Topics in Research I & II (Semester 1 & 2)	10 credits
Fitness for Life III or Fitness for Life III – Independent/Sports	5 credits
Honors English III	5 credits
College Level World History	5 credits
Honors or College Level Mathematics	5 credits
World Language III or elective	5 credits

Senior

College Level Phys Fitness/Contemporary Health at RCSJ	5 credits
College Level English Composition 101 at RCSJ	5 credits
College Level Electives	5-30 credits

Attention: Understand that registering for a college-level course, means college level credit will be awarded. Regardless of the final grade, this information will be posted to the student's PERMANENT academic transcript at Rowan College of South Jersey. Be aware that unsuccessful completion of these courses may negatively affect a students' eligibility for financial aid in the future.

Academy of Biological Sciences – Freshman

Microsoft Office & Digital Literacy

5 credits

This course teaches the relevant computer concepts and skills needed in today's digital world. You'll learn practical, "real world" skills that can be applied on the job or in the classroom. From basic computer skills to file management and digital citizenship; students will gain a strong foundation before venturing into the world of word processing and spreadsheets and slideshow presentations using Word, Excel, and PowerPoint. This class also prepares the students for the Microsoft Office Specialist: Associate Certification which could lead to college credit for Computer Literacy.

Honors Lab Chemistry for Biological Science

5 credits

This course approaches chemistry as a qualitative and quantitative study of the interactions of matter on the subatomic and molecular level. It will begin with the most fundamental of chemical units, the atom. Students will be involved in laboratory research, problem solving, and classroom presentations. Problem solving is essential in defining the intrinsic quantitative nature of chemistry. All students must have a scientific calculator capable of working with exponents. The course is intended for serious and inquisitive students desiring to broaden their knowledge of the physical world. For students of the Academy of Biological Science, this course will cover areas and topics that specifically relate to that career area.

Principles of Biomedical Science

5 credits

In this course, students explore the concepts of biology and medicine as they take on roles of different medical professionals to solve real-world problems. Over the course of the semester, students are challenged in various scenarios including investigating a crime scene to solve a mystery, diagnosing and proposing treatments to patients, tracking down a disease outbreak in a hospital, stabilizing a patient during an emergency and collaborating with peers and professionals to design solutions to local and global medical problems.

Academy of Biological Sciences – Sophomore

College Level General Biology for Biological Science

7.5 credits

This course offers an investigative approach to the science of biology involving the molecular structure and function of the cell. This is extended to the tissue level of organization and coordinated with the total organism. Emphasis is on nutrition and energy release in an attempt to note the importance of bio-energetics to the cell and organism at large. Laboratory exercises parallel lecture and reading assignments. ****Must have successfully passed high school Lab Biology and meet college placement test exemption.***

Medical Interventions

7.5 credits

In this project- and problem-based course, students will apply knowledge of scientific principles and laboratory methods to understand how biomedical science goes "from bench to bedside". Building upon previous study of scientific methods and biological sciences, this course will continue to develop student laboratory skills and understanding of the scientific principles behind essential processes in biotechnology and laboratory processes. As a result, students will get a big picture understanding of how new and improved medical treatments are developed, tested, and evaluated for safety and

efficacy. Ethical dilemmas about deployment of new biotechnologies and career pathways in medical research will also be explored.

Academy of Biological Sciences - Junior

College Level General Chemistry I

5 credits

This is a rigorous college level introduction to chemistry. Topics covered include atomic and molecular structure, bonding, periodic law, chemical reactions, stoichiometry, enthalpy, kinetic molecular theory and gas laws, and solution chemistry. Students will be involved in laboratory research that supports topics covered in the course. Students are required to have a calculator. **Must meet college Placement Test Exemption.*

College Level General Chemistry II

5 credits

This continuation of College Level General Chemistry I covers solutions, kinetics, equilibrium, oxidation-reduction, electrochemistry, nuclear chemistry, systematic treatment of metals and nonmetals, thermochemistry, and a brief introduction to organic chemistry. The laboratory exercises support lecture topics. **Must meet college Placement Test Exemption.*

Advanced Topics in Research I & II

10 credits

This is an honors elective course emphasizing biological research and analysis. The course briefly reviews concepts from life science and moves on to pursue biology topics in more depth. The course focuses on ecology, biotechnology, genetics, evolution, current research and environmental issues, and study skills for science class environments. Students who wish to independently investigate some of their own interests in biology are encouraged to enroll. **Must meet Honors level requirements.*

College Level General Biology II

5 credits

The origin of new cells and organisms as well as the manner by which genetic material is passed from parent to offspring are investigated in detail through lecture, discussion and lab exercises. Classical and molecular genetics are reviewed and permit the concurrent consideration of the theories relevant in biology today. DNA technology and molecular biology of the gene will be investigated including genetic evolution and the evolution of behavior. **Must meet college Placement Test Exemption.*

Biotechnician Assistant Certification

2.5 credits

This course will prepare students to sit for the Biotechnology Assistant Credentialing Exam (BACE), an industry-valued credential. Students will review both knowledge and practical skills related to safe and effective laboratory practices. Topics include scientific methods, equipment use and maintenance, measurement and technical skills, applied mathematics, and workplace safety.

Academy of Biological Sciences – Seniors

Biological Science students may choose the following senior options:

1. Take HSOP courses on RCSJ's campus for a discounted fee.
2. Take College English Composition 101 and College Physical Fitness/Contemporary Health on RCSJ's campus and return to GCIT for elective courses that can be found under the "Elective" title in this course guide.