



Biology

Program **BIO.AS**
CIP 240101

Associate in Science Degree in Liberal Arts and Sciences

The Biology option of the Liberal Arts and Sciences program primarily prepares graduates for transfer into the junior year of programs such as ecology, conservation, biology, microbiology, pharmacy, forestry, entomology, genetics, biotechnology, and pre-professional fields of medicine and dentistry. Biology graduates have transferred to colleges throughout Pennsylvania, New Jersey and the northeast, including Rider University, Temple University, Cornell University, Rutgers University, Stockton College, The College of New Jersey, and Rowan University.

Graduates earning a four-year degree have been employed by firms such as Bristol-Myers Squibb, Johnson & Johnson, and various New Jersey governmental departments. Others have successfully completed medical, dental, chiropractic, pharmaceutical, physical/occupational therapy, physician's assistant, veterinary medicine, and other graduate programs.

The biology facilities include specially equipped laboratories for microbiology, genetics/molecular biology, and anatomy/physiology. Students learn a wide variety of investigative techniques, including microscopy, spectrophotometry, and gel electrophoresis. Real-life systems are studied through field trips to sites in the New Jersey Pinelands and elsewhere. A special honors sequence affords eligible students the opportunity to participate in a research project under the supervision of faculty at nearby Rider University, Monmouth University, or Princeton University as well as other research institutions.

PROGRAM OUTCOMES

- Demonstrate an understanding of the fundamental principles, concepts, and terminology of biology;
- Explain the structures and fundamental processes of life at molecular, cellular, and organismal levels;
- View the living world with greater understanding, insight, and appreciation as it relates to the field of biology and contemporary problems and issues;
- Demonstrate the ability to apply the scientific method of inquiry to gather and use information for the purposes of critical thinking, information analysis, and problem solving;
- Exhibit proficiency in the laboratory and in the field by using standard equipment and measurement and observation techniques that allow one to gather, analyze, and interpret qualitative and quantitative data.

Most courses may be completed through part-time study in the evening. Course selection and program of study must be approved by an academic advisor.

Admission to the Biology option requires a high school diploma or equivalent with at least one year of science (biology, chemistry, or physics) and two years of academic mathematics. Successful completion of the Biology option results in the award of the Associate in Science degree in Liberal Arts and Sciences.

Curriculum

Code	Course (lecture/lab hours)	Credits
FIRST SEMESTER		
BIO 101	General Biology I (3/3)	4
CHE 101	General Chemistry I (3/3)	4
CSW 100	College Success and Personal Wellness (2/0)†	2
ENG 101	English Composition I (3/0)	3
MAT 146	Pre-Calculus (4/0) ^A	4
SECOND SEMESTER		
BIO 102	General Biology II (3/3)	4
CHE 102	General Chemistry II (3/3)	4
CMN 111	Speech: Human Communication (3/0) OR	3
CMN 112	Public Speaking (3/0)	3
ENG 102	English Composition II (3/0)	3
THIRD SEMESTER		
BIO —	Biology elective ¹	4
— —	Technical electives ^{2,B}	4
— —	Technical electives ^{2,B}	4
— —	Social Science general education elective	3
FOURTH SEMESTER		
BIO —	Biology elective ¹	4
— —	Technical elective ^{2,C}	4
— —	Humanities general education elective	3
— —	General Education elective ³	3
		60

¹ Approved biology electives: BIO 201, 202, 203, 204, 208. Final grade must be C or above for biology majors.

² Select from approved list of BIO, CHE, MAT, PHY, and COS courses available from biology advisors or Business & STEM division office. Minimum grade of C required for BIO courses being applied as a Technical elective.

³ Select course from either Social Science or Humanities general education categories.

†Some exemptions apply. Consult academic advisor for details.

The Biology degree with a **Pre-Medicine, Pre-Veterinarian, Pre-Dentistry** concentration primarily prepares graduates for transfer into the junior year of programs such as pre-medicine, pre-veterinarian, pre-dentistry, physician assisting, biotechnology, microbiology, molecular biology, genetic or biochemical engineering, pharmacy and physical therapy.

Students follow the standard Biology curriculum (above), with course substitutions as follows, for a total of 62 credits:

Concentration

Pre-Medicine, Pre-Veterinarian, Pre-Dentistry

SEMESTER 1

^AMAT 151 Calculus I in place of MAT 146

SEMESTER 3

^BCHE 201 Organic Chemistry I (5 credits) and
MAT 152 Calculus II (4 credits) in place of Technical electives (8 credits)

SEMESTER 4

^CCHE 202 Organic Chemistry II (5 credits)
in place of Technical elective (4 credits)