

Biology

Program 21400
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, biotechnology, and preprofessional 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, and The College of New Jersey.

Recent graduates 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 a 24-station multimedia computer laboratory as well as 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 provides eligible students with the opportunity to participate in a research project under the supervision of faculty at nearby Rider University and other institutions.

Successful graduates of the program will be able to:

- 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
ENG 101	English Composition I (3/0)	3
BIO 101	General Biology I (3/3)	4
CHE 101	General Chemistry I (3/3)	4
CMN 111	Speech: Human Communication (3/0)	3
	OR	
CMN 112	Public Speaking (3/0)	3
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ENG 102	English Composition II (3/0)	3
MAT 146	Pre-Calculus (4/0) ^A	4
BIO 102	General Biology II (3/3)	4
CHE 102	General Chemistry II (3/3)	4
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BIO —	Biology elective ¹	4
— —	Technical electives ^{2,B}	8
— —	Social Science general education elective	3
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HPE 110	Concepts of Health and Fitness (1/2)†	2
BIO —	Biology elective ¹	4
— —	Technical elective ^{2,C}	4
— —	Humanities general education elective ^C	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 Science & Health Professions division office.

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

†HPE 111 is an acceptable alternative.

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:

Pre-Medicine, Pre-Veterinarian, Pre-Dentistry

SEMESTER 1

additionally include MAT 151 Calculus I (4 credits)

SEMESTER 2

^A Humanities general education elective (3 credits)
in place of MAT 146 Pre-Calculus (4 credits)

SEMESTER 3

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

SEMESTER 4

^C CHE 202 Organic Chemistry II (5 credits)
in place of Technical elective (4 credits)
and in place of Humanities general education elective (3 credits)

NOTE: All program listings are subject to periodic updates. Please consult your program advisor, academic division, or www.mccc.edu/programs_degree