Want To Pursue A Medical Career?

BIOLOGY
Pre-Medicine, Pre-Veterinarian, Pre-Dentistry Option

Get Academic Solutions at Mercer

— PROGRAM OBJECTIVE —
To prepare students to transfer into a four-year program in biology.

Majoring in biology can lead to vocations in such fields as medicine, dentistry, veterinarian science, physician assisting, biotechnology, microbiology, molecular biology, genetic or biochemical engineering, pharmacy, and physical therapy.

BIOLOGY Pre-Medicine, Pre-Veterinarian, Pre-Dentistry Option
ASSOCIATE IN SCIENCE DEGREE

Transfer Career Opportunities

The Biology degree with a pre-medicine, pre-veterinarian and pre-dentistry option 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.

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 multimedia computer laboratory as well as specialty 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.

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.

For Further Information Contact:
Professor Diane Hilker at hilkerd@mccc.edu
Science & Health Professions at 609-570-3367
MCCC Admissions Office at 609-570-3204
(Monday-Friday, 9:00 am - 5:00 pm)
Visit the college’s website www.mccc.edu
Trenton, New Jersey 08690   (609) 586-4800

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Course Descriptions

**BIO 201 - Microbiology** (4 credits)
Prerequisite: BIO 101 or BIO 102 with a minimum C grade
Explores morphology, taxonomy, and metabolism of microbes with emphasis on fungi, protozoa, helminths, viruses and bacteria. Covers the role of microbes in nature, including industrial applications and medical importance; human defense mechanisms; and immunology. The lab develops techniques, reinforces certain lecture content, and introduces new material. 3 lecture/3 laboratory hours

**BIO 202 - Organic Plants** (4 credits)
Prerequisite: BIO 101, OHT 101 or permission of course coordinator
Designed for ornamental horticulture, plant science, and biology majors. The lab consists of field studies stressing sight identification of both native and ornamental species. Covers the use of keys, as time permits. 3 lecture/3 laboratory hours

**BIO 203 - Entomology** (4 credits)
Prerequisite: BIO 101 or BIO 102
Intensive survey of the orders of insects, covering comparative anatomy, life cycles, physiology and economic importance. Includes management, preservation and identification methods. 3 lecture/3 laboratory hours

**BIO 204 - Ecology** (4 credits)
Prerequisite: BIO 101 or BIO 102
Intensive survey of the orders of insects, covering comparative anatomy, life cycles, physiology and economic importance. Includes management, preservation and identification methods. 3 lecture/3 laboratory hours

**CHE 101 - General Chemistry I** (4 credits)
Prerequisite: CHE 102 with a minimum C grade
Follows CHE 201 with increased emphasis on spectrophotometry and the synthesis of important classes of organic compounds. Topics include aromatics, alcohols, ethers, halogenides, substitutions, nucleophilic substitution; elimination reactions; and instrumental methods. Lab work introduces the synthesis, purification, separation and identification of organic compounds. 3 lecture/4 laboratory hours

**CHE 201 - Organic Chemistry I** (4 credits)
Prerequisite: CHE 102 with a minimum C grade
Theoretical principles of reaction mechanisms and the synthesis of important classes of organic compounds. Topics include aromatics, alcohols, ethers, halogenides, substitutions, nucleophilic substitution; elimination reactions; and instrumental methods. Lab work introduces the synthesis, purification, separation and identification of organic compounds. 3 lecture/4 laboratory hours

**CHE 202 - Organic Chemistry II** (5 credits)
Prerequisite: CHE 201 with a minimum C grade
Continued study of reaction mechanisms and the synthesis of important classes of organic compounds. Topics include aromatics, alcohols, ethers, halogenides, substitutions, nucleophilic substitution; elimination reactions; and instrumental methods. Lab work introduces the synthesis, purification, separation and identification of organic compounds. 3 lecture/4 laboratory hours

**BIO 208 - Genetics** (4 credits)
Prerequisite: BIO 102 with a minimum C grade or consent of instructor
Explores gene activity at the molecular and organismal levels. Topics include inheritance, chromosome structure and function, gene mapping, genomics, prokaryotic and eukaryotic gene expression, molecular biology, and population genetics. Includes lab exercises in biotechnology, bioinformatics, and classical genetics. 3 lecture/3 laboratory hours

**BIO 293 - Honors Research in Biology I** (2 credits)
Prerequisite: BIO 102 and CHE 102, minimum 3.0 GPA in biology and chemistry courses, and faculty approval
Under the guidance of an area advisor in an industrial or academic environment, students participate in a biology research project. Requires a written and oral presentation to students and faculty. (Fulfills a technical elective requirement in the Biology and Chemistry programs. May be taken with this Biology program option as extra credits.) 6 laboratory hours per week

**BIO 294 - Honors Research in Biology II** (2 credits)
Prerequisite: BIO 293
Continuation of BIO 293 for students who are participating in a second semester of research at an approved academic or industrial laboratory. Requires a written and oral presentation to students and faculty. 3 laboratory hours per week

**CHE 293 - Honors Research in Chemistry I** (2 credits)
Prerequisite: CHE 102
Continuation of CHE 201 for students who are participating in a second semester of research at an approved academic or industrial laboratory. Requires a written and oral presentation to students and faculty. (Fulfills a technical elective requirement in the Biology and Chemistry programs. May be taken with this Biology program option as extra credits.) 6 laboratory hours per week

**COURSE REQUIREMENTS**

**FIRST SEMESTER CREDITS**

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**TOTAL CREDITS**

62

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MaryJane Harris, a 2007 graduate of MCCC, took advantage of honors research opportunities, where she excelled. She served as student speaker at commencement ceremonies. A former pilot and member of the U.S. Air Force Reserve, she has been accepted to The University of Medicine and Dentistry of New Jersey, School of Osteopathic Medicine. Her goal is to specialize either in neurology or infectious disease. 

"Although I already had a bachelor's degree before attending Mercer, I took all of my medical school prerequisites courses there. I was invited to interview at 12 different medical schools, and I was accepted by four of the five schools whose interviews I attended. (I canceled the rest after being accepted at my top choice.) I hope my success will help dispel the rumor among pre-med students that 'medical schools won't accept prerequisites from community college'"