

Biology

The Biology Department is one of Bridgewater's largest, with six full-time faculty and approximately 200 majors. The department, which occupies all of the first floor of the McKinney Center for Science and Mathematics, contains six major teaching laboratories, six mini-labs for faculty and student research, along with offices and classrooms. The Biology Department offers introductory and advanced courses that prepare majors either for immediate employment or post-baccalaureate studies at graduate or professional schools. The department also provides a service function in that all Bridgewater students must take at least one biology course; many take two or three.

The Biology Department offers **pre-professional** programs in the areas of **medicine, dentistry, physical therapy, and veterinary science**. These programs prepare interested students for graduate and professional work in selected areas.

For more information on pre-professional programs visit www.bridgewater.edu

Rapidly expanding knowledge in cell biology, molecular genetics, and ecology assures bright futures for well-prepared biologists. With a baccalaureate degree, recent graduates have gained employment as life science teachers, laboratory technicians in industry, allied health, and government, environmental and conservation professionals, health officers, caseworkers, naturalists, and pharmaceutical salespersons. With graduate or professional degrees, Bridgewater alumni have become successful physicians, research scientists, veterinarians, medical technologists, environmental lawyers, dentists, physical therapists, genetic counselors, and forestry and wildlife specialists.



► FOR INFORMATION ON CAREERS
IN BIOLOGY, VISIT THE OFFICE OF
CAREER SERVICES OR GO TO: [WWW.
BRIDGEWATER.EDU](http://WWW.BRIDGEWATER.EDU)

Teacher Certification

Teacher certification for Biology consists of completing the major requirements for Biology and at least one semester of organic chemistry, chosen from the following:

CHEM 250 Fundamental Organic Chemistry
OR

CHEM 305 Organic Chemistry I

Refer to the Education Department listings for additional certification requirements.

Articulation Programs

The department has pursued articulation programs with other institutions in other fields as well. These include **Veterinary Medicine** with Virginia Tech, **Physical Therapy** with Shenandoah University, and **Forestry** with Duke University. The department also articulates mentored internships with numerous local and regional governmental agencies, clinics, industries, and research labs. Recently, biology majors have interned with the Virginia Commission of Game and Inland Fisheries, the Wildlife Center of Virginia, the Virginia Department of Environmental Quality, West Virginia State University research labs, local hospitals, industries, and veterinary clinics.

COURSES

BIOL 100 The Nature of the Biological World 4 Credits F, S

A survey of the discipline of biology designed for the non-major. Content varies with the expertise of the instructor, but all sections focus on the relevance/importance of biology in everyday life. Laboratory focuses on understanding science as a process and includes an independent research project with oral presentation. Three lectures and one lab per week.

General Education: Natural Science

BIOL 205 The Biology of Horses 3 Credits I

An introduction to morphology, physiology, genetics, and reproductive biology, using the horse as the object of study. Elements of applied animal behavior, breed variations, nutrition, disease pathology, and livestock management will be illustrated during the field trips, which will include visits to the Maryland-Virginia Regional College of Veterinary Medicine, the Virginia Equine Research Center, the Eastern Regional Veterinary Pathology Laboratory, and selected horse breeding farms in central and western Virginia.

BIOL 207 Organisms I 4 Credits F, S

A survey of the biodiversity of the Monera, Fungi and Plant Kingdoms, as well as an introduction to cellular biology: structure, function, chemistry, DNA, genetics and metabolism. Three lectures and one laboratory per week.

General Education: Natural Science

BIOL 208 Organisms II 4 Credits F, S

A survey of the biodiversity of the Protist and Animal Kingdoms, as well as an introduction to ecology and evolution. Three lectures and one laboratory per week.

General Education: Natural Science

Note: Either BIOL 207 or 208 may be taken first in the sequence

BIOL 210 Hijacking Genes 3 Credits I

An exploration of promises, applications, and expectations of modern molecular biology, including movement of genes among species, DNA in criminology, and advances that might make us free of disease and hunger.

Prerequisites: BIOL 100, 207 or 208, or permission of instructor

NUTRITION AND WELLNESS

A minor in Nutrition and Wellness consists of the following courses:

FCS 240	Contemporary Nutrition and Wellness
FCS 355	Nutrition for the Athlete
BIOL 305	Introduction to Human Anatomy
CHEM 250	Fundamental Organic Chemistry
ES 300	Personal and Community Health
ES 325	Principles of Health and Physical Fitness Assessment
ES 335	Physiology of Exercise
ES 427	Health Promotion and Wellness

PRE-PROFESSIONAL PROGRAMS AND ARTICULATION AGREEMENTS

Majors in Allied Health Science and Athletic Training can specifically prepare a student for graduate school admissions in the fields of **physical therapy and occupational therapy**. The student should team with his/her advisor in order to devise a plan allowing the student to complete all prerequisite courses for graduate school admissions. Certain articulation agreements exist which may provide graduates of Bridgewater College certain priority placement in physical therapy schools. Bridgewater College has articulation agreements with Shenandoah University and The George Washington University for **physical therapy** education. Students applying to these programs having achieved minimal admissions criteria will be strongly considered for admissions into the Doctorate of Physical Therapy Program. All questions regarding the articulation agreements, including specific admissions criteria and dual enrollment options, should be directed to the student's advisor or the Department Chair of Health and Exercise Science. For more information on pre-professional programs visit www.bridgewater.edu

GENERAL EDUCATION REQUIREMENTS

In addition to major offerings, the Department of Health and Exercise Science contributes to the

College's general education program. All students are required to complete ES 105: Wellness, and to develop skill in a physical activity by completing a 1-credit activity course. No more than four credits in activity courses may be applied toward graduation. Activity courses meeting the College's general education requirement are listed as follows:

ES 120	Bowling; 1 Credit; F, S
ES 123	Ballet; 1 Credit; F, S
ES 126	Aerobic Dancing; 1 Credit; F, S
ES 135	Golf; 1 Credit; F, S
ES 145	Handball-Racquetball; 1 Credit; S
ES 152	Snow Skiing; 1 Credit; I
ES 155	Snowboarding; 1 Credit; I
ES 162	Swimming; 1 Credit; F, S
ES 163	Aqua Aerobics; 1 Credit; F, S
ES 165	Tennis; 1 Credit; F, S
ES 175	Conditioning and Weight Training; 1 Credit; F, S
ES 177	Fitness-Jogging; 1 Credit; F, S
ES 180	Fitness and Weight Control; 1 Credit; S
ES 185	Horseback Riding; 1 Credit; F, S
ES 190	Cycling; 1 Credit; F
ES 362	Lifeguard Training; 1 Credit; S

COURSES

ES 105

Wellness

2 Credits F, I, S

A general education course examining the principles of wellness and encouraging the lifelong practice of wellness habits. Emphasis is placed upon personal assessment, behavioral change, and lifetime applications.

General Education: Core Skills

ES 200

Equine Development and Behavior

3 Credits S

The course includes the history of the horse and continues through the development and behavior of the horse today. The student will have an appreciation of the evolutionary development of the horse; his mental and physical capabilities; and as