3+2 BACHELOR OF SCIENCE / MASTER OF SCIENCE in BIOLOGY: Molecular Biology Option and Thesis Track

Department of Biological and Allied Health Sciences, College of Science and Technology
Effective Fall 2017

At Bloomsburg University qualified undergraduate students may participate in an Accelerated Bachelor's to Master's degree program or an Early/Dual Admission program to a professional Master's degree program.
The Accelerated Program permits qualified students with junior standing to take graduate coursework in order to get an early start on the Master's program. The total number of credits required for both the undergraduate and graduate degrees would be reduced by the number of graduate credits used to satisfy requirements for the undergraduate degree. For example, completing both an undergraduate degree program requiring 120 credits and a graduate degree program requiring 30 credits could be accomplished with a combined total of 138 credits. An example would be a Biology undergraduate interested in a Master's program in Biology (M.S.).
The Early/Dual Admission Program permits qualified undergraduate students to enter into a graduate program without first earning the Bachelor's degree with the intent of earning both Bachelor's and Master's degrees upon successful completion of the combined programs. Examples would include but not be limited to the Business Administration (M.B.A.) and Instructional Technology (M.S.) programs.

Concepts in Biology 1 (BIOLOGY.114) and Concepts in Biology 2 (BIOLOGY.115) should be taken during the freshman year; Microbiology (BIOLOGY.242) and Cell Biology (BIOLOGY.271) should be taken during the sophomore year. Students must complete ≥90 credit hours and maintain a ≥3.0 GPA in order to enroll in graduate courses in their 4th year. In addition to the specified courses listed on this page, the student selects 21 credit hours of approved graduate elective courses in biology.
Chemistry and mathematics courses should be scheduled as early as possible in the program of study.

Biology Core Requirements (29 credits):

BIOLOGY.114 Concepts in Biology I
BIOLOGY.115 Concepts in Biology II
BIOLOGY.242 Microbiology
BIOLOGY.271 Cell Biology
BIOLOGY.332 Genetics
BIOLOGY.333 Molecular Biology
BIOLOGY.334 Molecular Biology Laboratory
BIOLOGY.593 Master of Science Thesis

Physiology Requirement (4 credits)

Required lab course:
BIOLOGY.479 Integrated Physiology Laboratory
With one of the following lecture courses:
BIOLOGY.472 Animal Cell Physiology
BIOLOGY.474 Human Physiology
BIOLOGY.477 Plant Physiology
BIOLOGY.478 Microbial Physiology
BIOLOGY.480 Comparative Animal Physiology

Chemistry Requirement (16 credits)

CHEM.115 Chemistry for the Sciences I
CHEM.116 Chemistry for the Sciences II
CHEM.230 Fund of Organic Chemistry
CHEM.341 Biochemistry 1

(CHEM.442 Biochemistry 2 is strongly recommended)

Physics Requirement (8 credits – Select one pair)

PHYSICS.201 Introductory Physics 1 and PHYSICS.202 Introductory Physics 2

OR

PHYSICS.211 General Physics I and PHYSICS.212 General Physics II

Mathematics Requirement (9 credits)

MATH.141 Introduction to Statistics
MATH.546 Biostatistics

AND

MATH.123 Essentials of Calculus or MATH.125 Calculus I

Biology Elective Requirement (21 credits)

(21 cr hrs of biology graduate electives selected from the lists below. A total of 21 credits, which includes BIOLOGY.593 Master of Science Thesis and MATH.546 Biostatistics, must be taken at the 500 level.)

BIOLOGY.455 Environmental Microbiology
BIOLOGY.457 Entomology
BIOLOGY.472 Animal Cell Physiology
BIOLOGY.474 Human Physiology
BIOLOGY.477 Plant Physiology
BIOLOGY.530 Evolution
BIOLOGY.531 Developmental Biology
BIOLOGY.532 Microbial & Molecular Genetics
BIOLOGY.535 Bioinformatics
BIOLOGY.542 Virology
BIOLOGY.560 Population Biology
BIOLOGY.570 Medical Parasitology
BIOLOGY.571 Endocrinology
BIOLOGY.573 Cancer Biology
BIOLOGY.576 Neurophysiology
BIOLOGY.580 Comparative Animal Physiology
BIOLOGY.589 Current Topics in Biology
HLTHSCI.545 Pharmacology

Students are strongly encouraged to complete the Chemistry Minor by taking CHEM.442 Biochemistry 2. This additional preparation in chemistry will greatly enhance laboratory skills necessary for future molecular biology work.

General Education Requirements

Goal 1	7 points: 3 departments	Goal 6	5 points: 2 departments
Goal 2	2 points: 1 departments	Goal 7	5 points: 2 departments
Goal 3	5 points: 2 departments	Goal 8	2 points: 1 departments
Goal 4	5 points: 2 departments	Goal 9	2 points: 1 departments
Goal 5	5 points: 2 departments	Goal 10	2 points: 1 departments

***Sum total of all courses must add up to 138 Credit Hours or more.**