

BIOLOGICAL STUDIES MAJOR

The BA in Biological Studies is a program for students who enter Saint Joseph's University through one of the block-transfer agreements, and who have completed two-years in a biology major, or closely related program. This degree has fewer requirements than the BS in Biology, which will allow block-transfer students to normally graduate in two years.

The BA in Biological Studies can be an excellent program for block-transfer students who want to enter allied health professions programs such as Physician Assistant, Doctor of Physical Therapy, Doctor of Occupational Therapy, Doctor of Pharmacy, and others. It is also an excellent program for students wanting to enter various industries in the life sciences, or who wish to pursue a research-based graduate degree.

It is important note that, due to the reduced range of course requirements, the BA in Biological Studies does not include the pre-requisite courses for medical, dental, or veterinary school. Students interested in entering these programs after graduating from Saint Joseph's University should enroll in the BS in Biology program instead.

Learning Goals and Outcomes

Goal 1: Students will understand cell structure and function, the organization of biological systems, and the evolution of biological diversity.

Outcome 1.1: Students will be able to describe the mechanisms of evolutionary change and the diversity of life.

Outcome 1.2: Students will be able to describe biochemical processes of living organisms and the role of macromolecules in these processes.

Outcome 1.3: Students will be able to describe how organisms interact with their abiotic and biotic environment.

Outcome 1.4: Students will be able to describe molecular, classical, and population genetics.

Goal 2: Students will develop skills in experimental design and the presentation of scientific information.

Outcome 2.1: Students will be able to design an experiment, operate basic laboratory equipment, reduce and present data that includes the interpretation of statistical tests.

Outcome 2.2: Students will be able to develop written and oral presentations of scientific content.

Goal 3: Students will demonstrate career preparation through learning opportunities that are closely related to the field.

Outcome 3.1: Students will complete the BIO 290 Career Development Seminar, attend at least three semesters of the BIO 390 Seminar series, and be exposed to various professions in biologically-related areas.

Requirements

The BA in Biological Studies is a major that is only open for students entering SJU with an Associate's Degree in Biology or a closely-related discipline, through a block-transfer agreement. This program of study has fewer requirements compared to the BS in Biology or Biomedical

Sciences, and can be completed by most block-transfer students in four semesters.

The BA in Biological Studies provides an excellent route in various career options, including graduate programs in the allied health professions, direct-entry jobs in industry, and some other graduate programs. Please note that it is not ideal for students looking to enter medical, dental, veterinary, or other similar professional school programs, nor is it designed for students looking to enter a PhD program in the life sciences after graduation. The traditional BS in Biology degree is a better option for those pursuits.

Core Requirements: If one of these PHL/THE courses were completed as part of your Bachelor's program at SJU, they will apply to the core requirements; however, to meet program credit hours a student will need to take a 3 credit general elective. Please see the Block Transfer policy (<https://academiccatalog.sju.edu/programs/#blocktransfer>) for more information.

Transfer of Associates Degree courses will transfer in under "Block" up to 60 credits.

Must Be Taken at SJU

Code	Title	Hours
PHL Level 1	Core Requirement	3
THL	Core Requirement	3
Total Hours		6

Major Requirements

Code	Title	Hours
MAT 120 or MAT 155	Precalculus (May be taken for CCC Mathematics) Fundamentals of Calculus	3
MAT 128	Applied Statistics	3
CHM 120 & 120L	General Chemistry I and General Chemistry Lab I	4
CHM 125 & 125L	General Chemistry II and General Chemistry Lab II	4
BIO 101 & 101L	Bio I: Cells and Bio I: Cells Lab (May be taken for CCC Natural Science)	4
BIO 102 & 102L or BIO 151L	Bio II: Genetics and Bio II: Genetics Lab Phage Lab	4
BIO 201 & 201L	Bio III: Organismic Biology and Bio III: Organismic Biol Lab	4
BIO 290	Career Development Seminar	0
BIO 390	Biology Seminar (Three semesters required after taking BIO 290)	0

Three upper-level biology courses, from from Group A, one from Group B, and one from Group C, below: ¹

Group A: Cell Structure and Function		4
BIO 402	Advanced Cell Biology	
BIO 411	Molecular Genetics	
BIO 416	Microbiology	
BIO 421	Molecular&Cellular Biophysics	
BIO 424	Biotechnology	
BIO 427	Human Genetics	

BIO 428	Histopathology	
BIO 430	Neurological Disorders	
Group B: Systemic Organization		4
BIO 405	Biomechanics	
BIO 412	Neurobiology	
BIO 413	Plant Physiological Ecology	
BIO 415	Immunology	
BIO 417	Systemic Physiology	
BIO 425	Bacterial Pathogenesis	
Group C: Evolution and Diversity of Life		4
BIO 401	Animal Behavior	
BIO 472	Aquatic Biology	
BIO 406	Human Anatomy	
BIO 409	Ecology	
BIO 419	Invertebrate Zoology	
BIO 420	Bioinformatics	
BIO 422	Applied & Environ Microbiology	
BIO 423	Evolution	
BIO 426	Fermentation Science	
BIO 429	Environmental Science	
At least 6 additional credits of upper-level Biology courses. These credits can be from any of the courses in group A - C above, as well as in groups D and E, below.		6
Group D courses ²		
BIO 218	Hematology	
BIO 230	Basic Concepts & Proc MLS	
BIO 348	Applied Clinical Microbiology	
BIO 433	Parasitology	
Group E courses: Non-lab courses		
BIO 219	Nutrition	
BIO 404	Biochemistry ³	
BIO 474	Emrg Bio Threat & Gbl Sustain	
Chemistry/Physics Elective		8
Students may choose to take either both semesters of Organic Chemistry (CHM 210 & CHM 210L, CHM 215 & CHM 215L) or both semesters of General Physics (PHY 101 & PHY 101L, PHY 102 & PHY 102L). Transfer credit may be applicable and may fulfill this major requirement.		
Total Hours		52

¹ BIO 101 (<https://academiccatalog.sju.edu/search/?P=BIO%20101>), BIO 102 (<https://academiccatalog.sju.edu/search/?P=BIO%20102>), BIO 201 (<https://academiccatalog.sju.edu/search/?P=BIO%20201>) and CHM 120 (<https://academiccatalog.sju.edu/search/?P=CHM%20120>), CHM 125 (<https://academiccatalog.sju.edu/search/?P=CHM%20125>) are prerequisite for all 400 level BIO courses.

² One semester of BIO 493 or BIO 494 (Independent Research) and/or BIO 492 (Biology Internship) may count as one Group D biology elective. For students doing a year-long honors thesis, both BIO 493 and BIO 494 may be counted as Group D biology electives. For non-honors research, the second semester of research will count as a free elective.

³ CHM 215/CHM 215L is a prerequisite or co-requisite for BIO 404