Bachelor of Arts in Biology
Overview of Course Requirements

✓ The Bachelor of Arts (BA) degree in Biology is offered as a joint program between Rutgers University and the New Jersey Institute of Technology (NJIT) through the Federated Department of Biological Sciences. The BA major requires 38 credits of course work in biological sciences, plus cognate course credits in chemistry, physics, and mathematics. Courses are offered on the Rutgers and NJIT campuses.

✓ CORE COURSE REQUIREMENTS: All students are required to successfully complete the following courses with final grades of C or better: 120:200 Concepts in Biology (4 credits); 120:201 Foundations of Biology: Cell and Molecular Biology (3 credits) and 120:202 Foundations of Biology: Cell and Molecular Biology Lab (1 credit); 120:205 Foundations of Biology: Ecology and Evolution (3 credits), and 120:206 Foundations of Biology: Ecology and Evolution Lab (1 credit). These five courses are essential prerequisites for all upper level courses in the program.

✓ CLUSTER AND LAB/FIELD REQUIREMENTS: Beyond the core courses, all students must successfully complete (grade of C or better) one course from each of the three Biological Concepts Clusters (10 credits minimum) and two courses designated as Laboratory/Field Experience courses (6 credits minimum). Courses taken in one category cannot be used to fulfill a requirement in another category; e.g., a laboratory course taken to fulfill Cluster B cannot simultaneously be used to fulfill the Lab/Field requirement.

✓ ELECTIVES: Students complete their course of study by successfully completing, with grades of C or better, their courses in biological sciences up to the minimally required 38 credits. It is imperative that students meet with their major advisor early and often in order to properly plan and manage their progress toward a BA degree in Biology.

✓ WRITING REQUIREMENT: Among the courses successfully completed for the BA degree in Biology at Rutgers University-Newark, one must be designated as Writing Intensive (indicated as WI on the accompanying listing of courses). Scheduling and registration systems at Rutgers and NJIT designate these courses as Q and H, respectively. This course is included within the 38 degree-credits in biology.

✓ COGNATE COURSE REQUIREMENTS: All cognate courses must be completed with grades of C or better. Cognate courses can be completed at either Rutgers or NJIT. Please note that in the case of sequential cognate courses (for example General Physics I and II and their labs) the entire sequence must be completed at one or the other campus—you cannot mix and match!

Declaration of Major

✓ RUTGERS MATRICULATED STUDENTS: Upon successful completion of Concepts in Biology 200 and one of the two Foundations course pairs (201/202 or 205/206), Rutgers students can officially declare their intention to pursue a course of study leading to a BA degree in Biology.

✓ To declare their major, Rutgers students must visit the Biological Sciences Office in Boyden Hall 206 to submit an application for admission to the major. At this time the student’s record will be reviewed and, if accepted into the major, an academic major advisor will be assigned. Students should meet with their advisor on a regular basis, at least once a semester, to plan their course of study and eventually complete a graduation audit (see below).

✓ NJIT MATRICULATED STUDENTS: NJIT students may declare their major on entrance or within one year after first registration and to that effect they should visit NJIT’s Biological Sciences Office, which is located in Rm. 429, Colton-Annex on the NJIT campus.

Graduation Pre-certification

✓ Rutgers students preparing to graduate must do a graduation audit with their academic advisor, and complete the graduation pre-certification process. This should be done early in the semester before their last undergraduate semester of study. Specific deadlines are posted in the department office and the Dean of Students Affairs office. Students must officially file for graduation online: http://www.ncas.rutgers.edu/graduation.

✓ NJIT students preparing to graduate must complete an application for graduation (by October 15 for January graduation, and November 15 for May graduation). At this time the NJIT certification coordinator will sign the application and perform a graduation audit with the student. The application must be turned in to the registrar.

✓ Failure to complete the pre-certification process in the proper time window may jeopardize a student’s ability to successfully prepare for graduation.

Last updated 4 August 2016
BACHELOR OF ARTS  
MAJOR IN BIOLOGY  
COURSE OFFERINGS

Below is a listing of all courses offered in Biological Sciences on either the Rutgers or NJIT campuses (school 21 or 28, respectively). All listed courses can be applied toward the major. Typically most courses are taught once a year, however there are exceptions in certain high enrollment or in highly specialized, upper division courses. To assist in the planning process, FA indicates Fall course offerings; SP, Spring; and VR variable. Please note: some courses are offered in different semesters of odd or even years. WI indicates the course meets the Writing Intensive requirement. The scheduling and registration systems at Rutgers and NJIT identify Writing Intensive courses as Q and H, respectively. IMPORTANT: Course offerings may change from year to year, so please check the online schedule or department office to verify current course offerings.

1. CORE COURSES – 12 credits
21:120:200 Concepts in Biology  FA, SP  4 cr
21:120:201 Foundations: Cell & Molecular Biology  FA, SP  3 cr
21:120:202 Foundations: Cell & Molecular Biology Lab  FA, SP  1 cr
28:120:205 Foundations: Ecology and Evolution  FA, SP  3 cr
28:120:206 Foundations: Ecology and Evolution Lab  FA, SP  1 cr

2. BIOLOGICAL CONCEPTS CLUSTERS – 10 credits
A) Ecological and Evolutionary Framework (1 course required)
21:120:211 Plant Kingdom  SP  4 cr
28:120:222 Evolution  FA  3 cr
21:120:280 Ecology  FA  3 cr
21:120:282 Animal Behavior  SP  3 cr
B) The Functional Organism (1 course required)
21:120:230 Biology of Seed Plants  SP  4 cr
21:120:330 Plant Physiology  FA  4 cr
21:120:335 General Microbiology  FA  4 cr
21:120:340 Mammalian Physiology  FA, SP  4 cr
21:120:342 and Developmental Biology and  FA  4 cr
21:120:343 Developmental Biology Lab  FA  4 cr
C) Molecular and Cellular Mechanisms (1 course required)
21:120:352 Genetics  SP  3 cr
21:120:355 Cell Biology  SP  3 cr
21:120:356 Molecular Biology  FA  3 cr
21:120:360 Biochemistry  SP  3 cr

3. LABORATORY EXPERIENCE – 2 courses required, minimum 6 credits
21:120:211 Plant Kingdom  SP  4 cr
21:120:230 Biology of Seed Plants  SP  4 cr
21:120:285 Comparative Vertebrate Anatomy  FA  4 cr
21:120:311 Flora of New Jersey (WI)  FA  4 cr
21:120:325 and Animal Parasites (WI) and  FA  3 cr
21:120:326 Parasitology Lab  1 cr
21:120:328 Ecology of Birds  FA  4 cr
21:120:330 Plant Physiology  FA  4 cr
21:120:335 General Microbiology  FA  4 cr
21:120:340 Mammalian Physiology  FA, SP  4 cr
21:120:342 and Developmental Biology and  FA  4 cr
21:120:343 Developmental Biology Lab  FA  4 cr
21:120:381 Ecological History of North America (WI)  FA  3 cr
28:120:385 Evolution of Behavior  FA  3 cr
21:120:405 Microanatomy of Tissues  SP  4 cr
21:120:430 Plant Growth and Development (WI)  SP  4 cr
21:28:120:451 Cell Physiology and Imaging  SP  4 cr
21:120:452 Lab in Molecular Biotechniques (WI)  FA/SP  4 cr
28:120:475 Ecological Field Methods and Analysis (WI)  FA  3 cr

4. BIOLOGY ADDITIONAL COURSES
28:120:315 Principles of Neurobiology  FA, SP  3 cr
28:120:320 Discovering Biol. Research  FA  3 cr
28:120:338 Ecology of the Dining Hall  FA  3 cr
21:120:341 Intro to Neurophysiology  FA  3 cr
21:120:342 Developmental Biology  FA  3 cr
28:120:344 Physiological Mechanisms  SP  3 cr
28:120:345 Comparative Physiology  SP  3 cr
21:120:350 Immunology  SP  3 cr
21:120:365 Evolution of Humans (WI)  FA  3 cr
28:120:368 Ecology and Evolution of Disease (WI)  SP  3 cr

5. COGNATE COURSES

A) Rutgers Courses
21:160:115 General Chemistry I  FA, SP  4 cr
21:160:116 General Chemistry II  SP  4 cr
21:160:117 General Chemistry Lab  FA, SP  1 cr
21:160:114 General Chemistry Lab  FA, SP  1 cr
21:160:335 Organic Chemistry I  FA  4 cr
21:160:336 Organic Chemistry II  SP  4 cr
21:160:331 Organic Chemistry Lab  FA  2 cr
21:640:135 Calculus  FA, SP  4 cr
21:750:203 or General Physics I or  FA  4 cr
21:750:213 University Physics T  SP  4 cr
21:750:204 or General Physics II or  SP  4 cr
21:750:214 University Physics II  SP  4 cr
21:750:205 Intro Physics Lab I  FA  1 cr
21:750:206 Intro Physics Lab II  SP  1 cr

B) NJIT Courses
CHEM 124 General Chemistry Lab  FA, SP  1 cr
CHEM 125 General Chemistry I  FA, SP  3 cr
CHEM 126 General Chemistry II  SP  3 cr
CHEM 243 Organic Chemistry I  FA, SP  3 cr
CHEM 244 Organic Chemistry II  SP  3 cr
CHEM 244A Organic Chemistry Lab  SP  2 cr
MATH 111 Calculus I  FA, SP  4 cr
PHYS 111 Physics I  FA, SP  3 cr
PHYS 121 Physics II  SP  3 cr
PHYS 111A Physics Lab I  FA, SP  1 cr
PHYS 121A Physics Lab II  FA, SP  1 cr

Last updated 4 August 2016