

Ecology and Evolution Concentration

(120 credits minimum)

First Year

1st Semester		Credits
BIOL 200	Concepts in Biology	4
CHEM 125 or CHEM 121	General Chemistry I ¹ or Fundamentals of Chemical Principles I	3
CHEM 125A	General Chemistry Lab I	1
MATH 138	General Calculus I	3
ENGL 101	English Composition: Introduction to Academic Writing	3
FYS SEM	First-Year Student Seminar	0
Term Credits		14

2nd Semester

BIOL 205	Foundations of Biology: Ecology and Evolution Lecture	3
BIOL 206	Foundations of Biology: Ecology and Evolution Lab	1
CHEM 126 or CHEM 122	General Chemistry II ¹ or Fundamentals of Chemical Principles II	3
CHEM 126A	Gen Chemistry Lab II	1
ENGL 102	English Composition: Introduction to Writing for Research	3
MATH 105	Elementary Probability and Statistics	3
Term Credits		14

Second Year**1st Semester**

BIOL 201	Found of Biol: Cell & Molecula	3
BIOL 202	Found of Biol: Cell & Molecula	1
CHEM 243	Organic Chemistry I	3
BNFO 135 or CS 101	Programming for Bioinformatics or Computer Programming and Problem Solving	3
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
Social Sciences GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
Term Credits		16

2nd Semester

R216 211	Plant Kingdom	4
BIOL 222	Evolution	3
CHEM 244	Organic Chemistry II	3
CHEM 244A	Organic Chemistry I Laboratory	2
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
Term Credits		15

Third Year**1st Semester**

R216 280	Ecology	3
Molecular and Cellular Cluster Elective		3
PHYS 102	General Physics I	3
PHYS 102A	General Physics I Lab	1
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
Free Elective ²		3
Term Credits		16

2nd Semester

Field Course Elective		3
Ecology & Evolution Elective		3
PHYS 103	General Physics II	3
PHYS 103A	General Physics II Lab	1
Technical Elective ³		3
Ecology and Evolution Elective		3
Term Credits		16

Fourth Year**1st Semester**

Ecology and Evolution Laboratory Elective		4
Technical Elective ³		3
Ecology and Evolution 400-level Elective ²		3
Free Elective ²		3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
Term Credits		16

2nd Semester

Technical Elective ³		4
Free Elective ²		3
Technical Elective ³		3
Free Elective ²		3
Term Credits		13
Total Credits		120

Biology Credits: 41

¹ CHEM 121 and CHEM 122 require permission from academic adviser

² Free Elective - Any course in any subject at any level

³ Technical Elective - Any course in BIOL, BME, FRSC, CHEM, CS, EVSC, IT, IS, MIS, MIT, PHYS.

One Technical Elective must be four credits (PHYS 202 and 202A, PHYS 203 and 203A, FRSC 307, FRSC 359)

ECOLOGY AND EVOLUTION LABORATORY ELECTIVES (One Required)

Code	Title	Credits
R216 230	Biology Of Seed Plants	4
R120 311	Flora of New Jersey	4
BIOL 421	Comparative Vertebrate Anatomy	4
R216 330	Plant Physiology	4
R120 335	General Microbiology	4
R120 452	Molecular Biol Techniques	4

FIELD COURSE ELECTIVES (One Required)

Code	Title	Credits
BIOL 328	Ornithology - The Life of Birds	3
R216 371	Field Study Plant Ecology	3
R216 380	Field Ecology	3
BIOL 475	Ecological Field Methods and Analysis	3
BIOL 484	Evolution of Animal Behavior Laboratory	3

MOLECULAR AND CELLULAR (One Required)

Code	Title	Credits
BIOL 352 or R120 352	Genetics Genetics	3

R120 356	Molecular Biology	3
CHEM 473	Biochemistry	3

ECOLOGY AND EVOLUTION ELECTIVES(Two Required)

Code	Title	Credits
BIOL 328	Ornithology - The Life of Birds	3
BIOL 337	Collective Intel in Biol Syst	3
BIOL 338	Ecology of the Dining Hall	3
BIOL 352	Genetics	3
or R120 352	Genetics	
BIOL 375	Conservation Biology	3
BIOL 376	Biological Applications of Geographic Information Systems	3
BIOL 382	Animal Behavior	3
BIOL 453	Applied Genetics & Genomics	3
BIOL 462	Comparative Biomechanics	3
BIOL 468	Disease Ecology & Evolution	3
BIOL 475	Ecological Field Methods and Analysis	3
BIOL 484	Evolution of Animal Behavior Laboratory	3
BIOL 491	Research and Independent Study	3
BIOL 492	Research and Independent Study	3
R216 305	Vertebrate Evolution	3
R120 356	Molecular Biology	3
R216 365	Evolutions of Humans	3
R120 370	Plant Ecology	3
R216 381	Ecological History of North Am	3
R216 422	Biological Invasions	3
CHEM 360	Environmental Chemistry of Air Pollution and Climate Change	3
CHEM 361	Environmental Chemistry of Water and Soil Pollution	3
EVSC 375	Environmental Biology	3
EVSC 385	Environmental Microbiology	3