

# Ecology and Evolution Concentration

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(120 credits minimum)

**First Year**

<b>1st Semester</b>		<b>Credits</b>
BIOL 200	Concepts in Biology	4
CHEM 125 or CHEM 121	General Chemistry I <sup>1</sup> 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
<b>Term Credits</b>		<b>14</b>

**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 <sup>1</sup> or Fundamentals of Chemical Principles II	3
CHEM 126A	Gen Chemistry Lab II	1
MATH 238	General Calculus II	3
ENGL 102	English Composition: Introduction to Writing for Research	3
<b>Term Credits</b>		<b>14</b>

**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
MATH 105	Elementary Probability and Statistics	3
History and Humanities GER 200 level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/</a> )		3
<b>Term Credits</b>		<b>16</b>

**2nd Semester**

R120 211	Plant Kingdom	4
BIOL 222	Evolution	3
CHEM 244	Organic Chemistry II	3
CHEM 244A	Organic Chemistry II Laboratory	2
Social Science GER ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/</a> )		3
<b>Term Credits</b>		<b>15</b>

**Third Year****1st Semester**

R120 280	Ecology	3
Molecular and Cellular Cluster Elective		3
PHYS 102	General Physics	3
PHYS 102A	General Physics Lab	1
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )		3
Free Elective <sup>2</sup>		3
<b>Term Credits</b>		<b>16</b>

**2nd Semester**

Field Course Elective	3
Ecology & Evolution Elective	3
PHYS 103          General Physics	3
PHYS 103A        General Physics Lab	1
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )	3
Technical Elective <sup>3</sup>	3
<b>Term Credits</b>	<b>16</b>

**Fourth Year****1st Semester**

Ecology and Evolution Laboratory Elective	4
Technical Elective <sup>2</sup>	3
Technical Elective <sup>2</sup>	3
Free Elective <sup>2</sup>	3
Humanities and Social Science Senior Seminar GER ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/</a> )	3
<b>Term Credits</b>	<b>16</b>

**2nd Semester**

Ecology and Evolution Elective	3
Technical Elective <sup>3</sup>	4
Free Elective <sup>2</sup>	3
Free Elective <sup>2</sup>	3
<b>Term Credits</b>	<b>13</b>
<b>Total Credits</b>	<b>120</b>

**Biology Credits: 38**

<sup>1</sup> CHEM 121 and CHEM 122 require permission from academic adviser

<sup>2</sup> Free Elective - Any course in any subject at any level

<sup>3</sup> Technical Elective - Any course in BIOL, BME, FRSC, CHEM, CS, EVSC, IT, IS, MIS, MIT, PHYS. **One Technical Elective must be four credits.**

**Electives****Technical Electives**

Any course in chemistry, math or physics beyond major requirements. Any course in environmental science, computer science or engineering. Additional biology electives can be used as technical electives.

**Free Electives**

Any course in any subject at any level.

**ECOLOGY AND EVOLUTION LABORATORY ELECTIVES (One Required)**

Code	Title	Credits
R120 230	Biology Of Seed Plants	4
R120 311	Flora of New Jersey	4
BIOL 321	Comp Vertebrate Anatomy	4
R120 330	Plant Physiology	4
R120 335	General Microbiology	4
R120 342 or R120 343	Developmental Biology Developmental Biology Lab	1-3
R120 452	Molecular Biol Techniques	4

**FIELD COURSE ELECTIVES (One Required)**

<b>Code</b>	<b>Title</b>	<b>Credits</b>
R120 328	Ornithology	3
R120 371	Field Study Plant Ecology	3
R120 380	Field Ecology	3
BIOL 484	Evolution of Animal Behavior Laboratory	3
R120 430	Plant Growth & Development	4
BIOL 475	Ecological Field Methods and Analysis	3

**MOLECULAR AND CELLULAR (One Required)**

<b>Code</b>	<b>Title</b>	<b>Credits</b>
BIOL 352	Genetics	3
or R120 352	Genetics	
R120 356	Molecular Biology	3

**ECOLOGY AND EVOLUTION ELECTIVES(Two Required)**

<b>Code</b>	<b>Title</b>	<b>Credits</b>
R120 305	Vertebrate Evolution	3
BIOL 337	Collective Intel in Biol Syst	3
BIOL 338	Ecology of the Dining Hall	3
R120 365	Evolutions of Humans	3
BIOL 468	Disease Ecology & Evolution	3
R120 370	Plant Ecology	3
BIOL 375	Conservation Biology	3
R120 381	Ecological History of North Am	3
BIOL 382	Animal Behavior	3
R120 422	Biological Invasions	3
R120 431	Modern Plant Biology	3
BIOL 491	Research and Independent Study	1-3
or R120 491	Problems In Biology	
BIOL 492	Research and Independent Study	3
or R120 492	Problems In Biology	