## Accelerated B. A. in Biology/Ph.D. in Physical Therapy

(120 Minimum credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>First Year</strong></td>
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<tr>
<td><strong>1st Semester</strong></td>
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<tr>
<td>BIOL 200</td>
<td>Concepts in Biology</td>
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<tr>
<td>CHEM 125</td>
<td>General Chemistry I</td>
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<tr>
<td>MATH 138</td>
<td>General Calculus I</td>
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<td>HUM 101</td>
<td>English Composition: Writing, Speaking, Thinking I</td>
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<td>CHEM 125A</td>
<td>General Chemistry Lab I</td>
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<td>BNFO 135</td>
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<td>Foundations of Biology: Ecology and Evolution Lecture</td>
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<td>Foundations of Biology: Ecology and Evolution Lab</td>
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<td>CHEM 126A</td>
<td>Gen Chemistry Lab II</td>
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<td>CHEM 126</td>
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<td>MATH 238</td>
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<td>English Composition: Writing, Speaking, Thinking II</td>
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<td>BIOL 310</td>
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<td>R120 201</td>
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<td>R120 202</td>
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<td>CHEM 243</td>
<td>Organic Chemistry I</td>
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<td>MATH 105</td>
<td>Elementary Probability and Statistics</td>
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<td>General Education Requirements [2]</td>
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<td>Biology Cluster Elective</td>
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<td>BIOL 340</td>
<td>Mammalian Physiology</td>
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<td>CHEM 244</td>
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<td>BIOL 285</td>
<td>Comparative Vertebrate Anatomy</td>
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Biology Cluster Elective 3
Biology Elective 3
PHYS 102 General Physics 3
PHYS 102A General Physics Laboratory 1
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level) 3

Term Credits 17

2nd Semester
Biology Laboratory Elective 3
Biology Elective 3
Biology Elective 3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone) 3
PHYS 103 General Physics 3
PHYS 103A General Physics Laboratory 1

Term Credits 16

Total Credits 107

Code | Title | Credits
---|---|---
Technical Elective | PTDR 5110 Gross Anatomy | 4
Technical Elective | PTDR 5120 Gross Anatomy | 3
Free Elective | PTDR 5130 | 3
Free Elective | PTDR 5310 Examination and Measurement | 3

Total Credits 13

Biology Electives
One course must be taken from each cluster.

Cluster A – Ecology and Evolution

Code | Title | Credits
---|---|---
BIOL 222 | Evolution | 3
R120 280 | Ecology | 3
R120 382 | Animal Behavior | 3
R120 370 | Plant Ecology | 3

Cluster B – Functional Organism

Code | Title | Credits
---|---|---
R120 211 | Plant Kingdom | 4
R120 230 | Biology Of Seed Plants | 4
R120 330 | Plant Physiology | 4
R120 335 | General Microbiology | 4
R120 340 | Mammalian Physiology | 4
or BIOL 340 | Mammalian Physiology | 4
R120 342 & R120 343 | Developmental Biology and Developmental Biology Lab | 4

Cluster C – Molecular and Cellular

Code | Title | Credits
---|---|---
R120 352 | Genetics | 3
R120 355 | Cell Biology | 3
R120 356 | Molecular Biology | 3
R120 360  Biochemistry  3
or CHEM 473  Biochemistry

| Laboratory Experience Courses |
|-----------------------------|------------------|
| Code                        | Title                     | Credits |
| R120 227                    | Biol Invertebrates       | 4       |
| R120 285                    | Comparative Vertebrate Anatomy | 4       |
| R120 311                    | Flora of New Jersey      | 4       |
| R120 313                    | Mycology                 | 4       |
| R120 325 & R120 326         | Animal Parasites and Parasitology Lab | 4       |
| R120 358                    | Microanatomy Cells       | 4       |
| R120 430                    | Plant Growth & Development | 4       |
| R120 481                    | Marine Biology           | 4       |
| Any course from Functional Organism Cluster | | 4 |
| R120 328                    | Ornithology              | 3       |
| R120 371                    | Field Study Plant Ecology | 3       |
| R120 381                    | Ecological History of North Am | 3       |
| R120 380                    | Field Ecology            | 3       |
| BIOL 475                    | Ecological Field Methods and Analysis | 3       |
| R120 486                    | Tropical Field Biology   | 2       |

| Biology Electives |
|--------------------|---------------------|---------|
| Code               | Title                           | Credits |
| BIOL 225           | Insects and Human Society      | 3       |
| R120 346 or BIOL 346 | Neurobiology            | 3       |
| R120 350           | Immunology                    | 3       |
| R120 365           | Evolutions of Humans          | 3       |
| BIOL 368           | The Ecology and Evolution of Disease | 3       |
| MATH 371           | Physiology and Medicine       | 3       |
| MATH 372           | Population Biology            | 3       |
| MATH 373           | Introduction to Mathematical Biology | 3       |
| BIOL 375           | Conservation Biology          | 3       |
| BIOL 383           | Neural Basis of Behavior      | 3       |
| R120 403           | Biological Ultrastructure     | 3       |
| R120 404           | Intro to Neuroanatomy         | 4       |
| R120 422           | Biological Invasions          | 3       |
| MATH 430           | Analytical and Computational Neuroscience | 3       |
| BIOL 440           | Cell Biology of Disease: Cells gone Bad! | 3       |
| R120 445           | Endocrinology                 | 3       |
| BIOL 447           | Systems Neurobiology          | 3       |
| BIOL 448           | Neuropathophysiology: Nervous System Gone Bad! | 3       |
| R120 451           | Lab Cell Biophysics           | 4       |
| R120 452           | Molecular Biol Techniques     | 4       |
| R120 455           | Molec Cell Biology            | 3       |
| R120 471           | Ecological Physiology         | 3       |
| R120 487           | Syst Ecol:Ecosys in Landscape | 3       |
| BIOL 491 & BIOL 492 | Research and Independent Study | 6       |