

# B.A. in Biology/Physician Assistant

(120 credit minimum)

## First Year

1st Semester		Credits
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
HUM 101	English Composition: Writing, Speaking, Thinking I	3
BNFO 135 or CS 101	Programming for Bioinformatics or Computer Programming and Problem Solving	3
FRSH SEM	First-Year Seminar	0
Term Credits		17

## 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
HUM 102	English Composition: Writing, Speaking, Thinking II	3
STS 210	Introduction to Psychology	3
Term Credits		17

## Summer

R120 141	Anatomy & Physiology (or BIO 121) <sup>2</sup>	
R120 142	Anatomy & Physiology (or BIO 122) <sup>2</sup>	
Term Credits		0

## 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
MATH 105	Elementary Probability and Statistics	3
Social Science GER		3
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
Term Credits		16

### 2nd Semester

BIOL 340	Mammalian Physiology	4
CHEM 473 or R120 360	Biochemistry or Biochemistry	3
CHEM 244	Organic Chemistry II	3
CHEM 244A	Organic Chemistry II Laboratory	2
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
Term Credits		15

## Third Year

### 1st Semester

BIOL 321	Comp Vertebrate Anatomy	4
R120 335	General Microbiology	4

Biology Ecology & Evolution Cluster Elective <sup>3</sup>		3
PHYS 102	General Physics	3
PHYS 102A	General Physics Lab	1
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
Term Credits		18
<b>2nd Semester</b>		
BIOL 352 or R120 352	Genetics or Genetics	3
Biology Elective		3
Biology Elective		3
PHYS 103	General Physics	3
PHYS 103A	General Physics Lab	1
Free Elective		3
Term Credits		16
Total Credits		99

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

<sup>2</sup> Anatomy and Physiology may be taken at Rutgers Newark (R120 141/142) or Essex County College (BIO 121/122) or at another institution with approval from NJIT Biology Department

<sup>3</sup> Choice of Evolution (Biol 222 or R120:222), Ecology (R120:280), Animal Behavior (BIOL 382), Plant Ecology (R120:370)

\* Other courses may be substituted as necessary

Code	Title	Credits
<b>Physical Assistant Courses Transferred to NJIT*</b>		
Technical Elective	PHYA4139 Microbiology and Immunology	4
Technical Elective	PHYA4120 Anatomy and Physiology I	3
Free Elective	PHYA4180 Biochemistry	3
Free Elective	PHYA4161 Cell Biology & Histology	3
Total Credits		13

Code	Title	Credits
NJIT Credits		107
Transfer Credits		13
Biology Credits		39
Total Credits		120

## Biology Electives

Code	Title	Credits
BIOL 315	Principles of Neurobiology	3
BIOL 320	Discovering Biological Research	3
R120 325 & R120 326	Animal Parasites and Parasitology Lab	4
R120 328	Ornithology	3
BIOL 337	Collective Intel in Biol Syst	3
R120 330	Plant Physiology	4
BIOL 338	Ecology of the Dining Hall	3
BIOL 341	Introduction to Neurophysiology	3
BIOL 342	Developmental Biology (Embryology)	3
BIOL 344	Physiological Mechanisms	3
BIOL 345	Comparative Physiology	3
BIOL 350	Immunology	3
R120 355	Cell Biology	3

R120 356	Molecular Biology	3
R120 365	Evolutions of Humans	3
BIOL 368	The Ecology and Evolution of Disease	3
R120 370	Plant Ecology	3
BIOL 375	Conservation Biology	3
BIOL 383	Neural Basis of Behavior	3
BIOL 492	Research and Independent Study	3
BIOL 400	Biology in Science Fiction	3
R120 402	Biology of Cancer	3
R120 422	Biological Invasions	3
R120 430	Plant Growth & Development	4
BIOL 432	Intro to Comp Neuroscience	3
BIOL 436	Advanced Neuroscience Modeling	3
BIOL 440	Cell Biology of Disease: Cells gone Bad!	3
BIOL 445	Endocrinology	3
BIOL 447	Systems Neurobiology	3
BIOL 448	Neuropathophysiology: Nervous System Gone Bad!	3
BIOL 453	Applied Genetics & Genomics	3
R120 455	Molec Cell Biology	3
R120 456	Virology	3
BIOL 462	Comparative Biomechanics	3
BIOL 470	Dynamic Princ in Systems BIOL	3
R120 472	Environmental Assessment	3
BIOL 475	Ecological Field Methods and Analysis	3
BIOL 498	Special Topics in Biology	3
BIOL 491 & BIOL 492	Research and Independent Study and Research and Independent Study	6
BIOL 495	Honors Seminar in Biology	3