

Cell Biology Concentration

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
HUM 101	English Composition: Writing, Speaking, Thinking I	3
FRSH SEM	First-Year Seminar	0
Term Credits		14

2nd Semester

BIOL 201	Found of Biol: Cell & Molecula	3
BIOL 202	Found of Biol: Cell & Molecula	1
CHEM 126 or CHEM 122	General Chemistry II ¹ 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
Term Credits		14

Second Year

1st Semester

BIOL 205	Foundations of Biology: Ecology and Evolution Lecture	3
BIOL 206	Foundations of Biology: Ecology and Evolution Lab	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
MATH 105	Elementary Probability and Statistics	3
Term Credits		16

2nd Semester

BIOL 222	Evolution	3
CHEM 244	Organic Chemistry II	3
CHEM 244A	Organic Chemistry II Laboratory	2
Cell Biology Laboratory Elective		4
Social Science GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
Term Credits		15

Third Year

1st Semester

R120 342 & R120 343	Developmental Biology and Developmental Biology Lab	4
R120 356	Molecular Biology	3
PHYS 102	General Physics	3
PHYS 102A	General Physics 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		17

2nd Semester

R120 355	Cell Biology	3
PHYS 103	General Physics	3
PHYS 103A	General Physics Lab	1
Cell Biology Elective		3
Technical Elective ³		3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
Term Credits		16

Fourth Year**1st Semester**

Cell Biology Laboratory Elective		4
Technical Elective ²		3
Technical Elective		3
Free Elective ¹		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

Cell Biology Elective		3
Technical Elective ³		3
Free Elective ²		3
Free Elective ²		3
Term Credits		12
Total Credits		120

Biology Credits: 39

- ¹ CHEM 121 and CHEM 122 require permission from the academic adviser
- ² Free Elective - Any course in any subject at any level
- ³ Technical Elective - Any course in BIOL, CHEM, CS, EVSC, IT, IS, PHYS, or any engineering course

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.

Cell Biology Electives

Code	Title	Credits
BIOL 315	Principles of Neurobiology	3
BIOL 341	Introduction to Neurophysiology	3
BIOL 344	Physiological Mechanisms	3
BIOL 350	Immunology	3
or R120 350	Immunology	
BIOL 352	Genetics	3
or R120 352	Genetics	
R120 360	Biochemistry	3
R120 402	Biology of Cancer	3
BIOL 440	Cell Biology of Disease: Cells gone Bad!	3
R120 444	Cell Neurobiology	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
CHEM 474	Biochemistry II	3
BIOL 491 or R120 491	Research and Independent Study Problems In Biology	1-3
BIOL 492 or R120 492	Research and Independent Study Problems In Biology	3

Cell Laboratory Electives(Two Required)

Code	Title	Credits
R120 325 & R120 326	Animal Parasites and Parasitology Lab	4
R120 330	Plant Physiology	4
R120 335	General Microbiology	4
BIOL 347	Lab Approaches in Neuroscience	4
R120 404	Intro to Neuroanatomy	4
R120 405	Microanatomy of Cells	4
BIOL 451	Cell Physiology and Imaging	4
R120 452	Molecular Biol Techniques	4
CHEM 473 & CHEM 475	Biochemistry and Biochemistry Lab I	5