

## Biochemistry Major - Suggested Course Sequence

		FALL	SPRING
Freshman		01:160:161 General Chemistry I (4) 01:119:115 General Biology I (4) 01:640:151 Calculus for Math & Physical Sciences I (4) 01:355:101 Expository Writing (3) 15 credits	01:160:162 General Chemistry II (4) 01:119:116 General Biology II (4) 01:640:152 Calculus for Math & Physical Sciences II (4) 01:160:171 Intro to Experimentaton (1) 15 credits
	Sophomore	01:160:307/315 Organic Chemistry I (4) 11:115:201 Contemporary issues in Biochemistry (2) 01:750:XXX Physics (3 to 5) 01:447:380 Genetics (4) RU option elective (3) 16 to 18 credits	01:160:308/316 Organic Chemistry II (4) 01:160:309/311 Organic Chemistry Lab (2) 01:750:XXX Physics (3 to 5) RU option elective (3) 16 to 18 credits
Junior		11:115:403 General Biochem I (4) 11:115:413 Experimental Biochem I (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) 16 credits	11:115:404 General Biochem II (3) 11:115:414 Experimental Biochem II (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) 18 credits
	Senior	11:115:493 Research Problems in Biochem (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) 15 credits	11:115:494 Research Problems in Biochem (3) 11:115:406 Problem Solving in Biochemistry (2) 11:115:409 Principles of Biophysical Chemistry (3) 11:115:491 Biochemistry Communications (3) RU or Biochemistry elective (3) RU or Biochemistry elective (3) 17 credits

- Student with a strong science background can taken an additional RU Option Elective (3 credit) both semester of their Freshman year.
- Calculus can be delayed to the Sophomore year. General Biology & General Chemistry must be taken the Freshman year.
- 11:115:201 - Contemporary Issues in Biochemistry can be taken either semester of the Sophomore year.
- Physics may be delayed to the Junior or Senior years.
- A total of 128 credits are needed to graduate from Rutgers. The above is the bare minimum needed to achieve 128 credits.
- It is highly recommended to find a research lab in your Junior year and to start doing research before your Senior year.
- If you take at least three semesters of Research Problems in Biochem (minimum of 3 credits per semester in the same lab) then you may request to be excused from the 11:115:406 Problem solving requirement.
- 11:11:491 Biochemical Communications can be taken either semester of Senior year. It is advisable to have taken at least one semester of Research Problems in Biochemistry before taking Biochemistry Communications.
- Ethics in Biochem Res (115:321) will be offererd both semester and also counts as jr/sr colloquium.

## Technology/Techniques Courses

<b>Course Name</b>	<b>Course Code</b>	<b>Credits</b>	<b>Offered Fall</b>	<b>Offered Spring</b>	<b>Offered Summer</b>
Analytical Chemistry	01:160:251	3	Yes	Yes	No
Basic Statistics for Research	01:960:401	3	Yes	Yes	No
Homology, Modeling of Proteins	11:115:428	3	No	Yes	No
Molecular Genetics Laboratory	11:126:482	4	No	Yes	No
Nucleotide Sequence Analysis	11:126:383	3	No	Yes	No
Bioinformatics	11:126:485	3	Yes	No	No

## General Option Electives

<b>Course Name</b>	<b>Course Code</b>	<b>Credits</b>	<b>Offered Fall</b>	<b>Offered Spring</b>	<b>Offered Summer</b>
Systems Physiology	01:146:356	3	Yes	Yes	No
Systems Physiology Laboratory	01:146:357	1	Yes	Yes	No
Bacterial Physiology	01:447:498	3	Not Offered	Not Offered	Not Offered
Integrative Physiology	11:067:300	4	Yes	Yes	No
Integrative Physiology Laboratory	11:067:301	1	Yes	Yes	No
Endocrinology	11:067:450	4	Yes	Yes	No
Reproductive and Developmental Toxicology	11:067:491	3	Not Offered	Not Offered	Not Offered
Molecular and Cellular Physiology	11:067:492	3	No	Yes	No
Biochem of Cancer	11:115:421	3	No	Yes	No
Biochemical Mechanisms of Toxicology	11:115:422	3	Yes	No	No
Molecular Toxicology	11:115:434	1.5	Not Offered	Not Offered	Not Offered
Molecular Toxicology Laboratory	11:115:436	2.5	No	Yes	Not Offered
Comparative Virology	11:126:407	3	Not Offered	Not Offered	Not Offered
Analytical Microbiology	11:126:486	4	Not Offered	Not Offered	Not Offered
General Microbiology	11:680:390	4	Yes	Yes	No
Applied Microbiology	11:680:494	4	Yes	No	No
Microbial Genetics and Genomics	11:680:480	3	No	Yes	No
Advanced Nutrition I: Regulation of Macronutrient Metabolism	11:709:400	3	Yes	No	No

## General Option Electives

Advanced Nutrition II: Energy and Micronutrient Metabolism	11:709:401	3	No	Yes	No
General Plant Pathology	11:776:302	3	Yes	No	No
General Plant Pathology Laboratory	11:776:311	1	Yes	No	No
Plant Science	11:776:242	3	No	Yes	No
Plant Genetics	11:776:305	4	Yes	No	No
Medicinal Plants	11:776:312	3	Yes	No	No
Plant Physiology	11:776:382	4	No	Yes	No
Plant Science Techniques	11:776:403	3	Not Offered	Not Offered	Not Offered
Plant Tissue Culture and Engineering	11:776:452	3	No	Yes	No
Plant Biochem Metabo	16:765:520	3	Not Offered	Not Offered	Not Offered
Pathophysiology	30:718:304	3	No	Yes	No
Pharmacology I	30:718:405	0	Yes	No	No
Pharmacology II	30:718:406	2	No	Yes	No