



Rensselaer

BIOCHEMISTRY & BIOPHYSICS B.S.

FIRST YEAR

Fall			Spring		
Number	Course	CR	Number	Course	CR
MATH 1010	Calculus I	4	MATH 1020	Calculus II	4
CHEM 1110	Chemistry I with Adv.Laboratory ¹	4	CHEM 1200	Chemistry II	4
BIOL 1010	Introduction to Biology	4	BIOL 2120	Intro. Cell & Molecular Biology	4
BIOL 1015	Introduction to Biology Laboratory	4		HASS Elective ²	4
	HASS Elective ²				

SECOND YEAR

Fall			Spring		
Number	Course	CR	Number	Course	CR
CHEM 2250	Organic Chemistry I	3	CHEM 2260	Organic Chemistry II	3
CHEM 2230	Organic Chemistry Lab I	1	CHEM 2240	Organic Chemistry Lab II	1
PHYS 1100	Physics I	4	PHYS 1200	Physics II	4
	Quantitative Option	4	BIOL 4620	Molecular Biology	4
BIOL 2500	Genetics and Evolution	4		HASS Elective ²	4

THIRD YEAR (WITH 3RD YEAR FALL SEMESTER AWAY)

The Arch Summer Semester ⁷			Spring		
Number	Course	CR	Number	Course	CR
BCBP 4760	Molecular Biochemistry I ⁶	4	BCBP 4770	Molecular Biochemistry II ⁶	4
CHEM 4440	Phys. Chem. Life Sci. ³	4	BCBP 4710	Biochemistry Laboratory ⁶ (Lab Option)	6
BIOL 4200	Biostatistics	4		Restricted Elective ⁵	2
	HASS Elective ²	4		HASS Elective ²	4

FOURTH YEAR (WITH 3RD YEAR FALL SEMESTER AWAY)

Fall			Spring		
Number	Course	CR	Number	Course	CR
	Molec. Biophysics Module ⁶	4		Molec. Biophysics Module ⁶	4
BCBP 4990	Senior Research Thesis ⁴	4		HASS Elective ²	4
	Restricted Elective ⁵	4		Elective	4
	Elective	4		Elective	4

THIRD YEAR (WITH 3RD YEAR SPRING SEMESTER AWAY)

The Arch Summer Semester ⁷			Fall		
Number	Course	CR	Number	Course	CR
CHEM 4440	Phys. Chem. for Life Sci. ³	4	BIOL 4720	Molecular Biology Laboratory ⁶ (Lab Option)	6
BIOL 4200	Biostatistics	4	BCBP 4760	Molecular Biochemistry I ⁶	4
	Elective	4		Restricted Elective ⁵	2
	HASS Elective ²	4		Elective	4

FOURTH YEAR (WITH 3RD YEAR SPRING SEMESTER AWAY)

Fall			Spring		
Number	Course	CR	Number	Course	CR
	Molec. Biophysics Module ⁶	4		Molec. Biophysics Module ⁶	4
BCBP 4990	Senior Research Thesis ⁴	4	BCBP 4770	Molecular Biochemistry II ⁶	4
	Restricted Elective ⁵	4		HASS Elective ²	4
	HASS Elective ²	4		Elective	4

This curriculum requires a minimum of 128 credit hours.

FOOTNOTES

1. Students may substitute CHEM 1100 for CHEM 1110.
2. Humanities, Arts & Social Science (HASS) courses should add up to 24 credits.
3. Students may substitute Macroscopic or Microscopic Physical Chemistry (CHEM 4410 & CHEM 4420).
4. Required course. Senior Research Thesis (BCBP 4990) is recommended; however, students may substitute any of the BIOL, BCBP, or CHEM culminating experience courses listed below.
5. Restricted Electives: at least 6 credits in science or engineering. Restricted electives must be 4000 level courses. Molecular Biophysics Modules, Laboratory Option, and the Quantitative Option may be taken in different semesters than those shown if electives are shifted.
6. Molecular Biochemistry I & II, molecular biophysics modules, and laboratory options cannot be satisfied with transfer credits.
7. For students who have applied for and been granted an exception, The Arch Summer courses would be taken during the fall semester. For listing of the exception process go to: <http://info.rpi.edu/arch/students/#ExceptionProcess>

MOLECULAR BIOPHYSICS MODULES (CHOOSE 2)

BCBP 4310	Genetic Engineering	BCBP 4780	Protein Folding
BCBP 4550	Molecular Modeling	BCBP 4800	Methods in Biophysics
BCBP 4660	The Biology of Systems	BCBP 4870	Protein Struct. Determination

QUANTITATIVE OPTION (CHOOSE 1)

CSCI 1010	Intro. to Comp. Programming	MATH 2400	Intro to Diff. Equations
CSCI 1100	Computer Science I	MATH 4720	Math. In Medicine & Biology
MATH 2010	Multivar. Calc. & Matrix Alg.		

CULMINATING EXPERIENCE COURSES

BIOL 4100	From Neuron to Behavior	BIOL 4630	Molecular Biology II
BIOL 4150	Cellular Neuroscience	BIOL/BCBP 4660	The Biology of Systems
BIOL 4250	Developmental Biology	BIOL 4860	Evolution
BIOL 4260	Advanced Cell Biology	BIOL 4870	Lake George BLUE
BIOL 4270	Human Physiology	BIOL 4961	Human Population
BIOL 4310	Microbiology	BIOL 4990	Senior Research Thesis
BIOL 4350	Virology	BCBP 4310	Genetic Engineering
BIOL 4540	Sequence Analysis	BCBP 4800	Methods in Biophysics
BIOL 4550	Molecular Modeling	BCBP 4870	Protein Struct. Determination
CHEM 4310	Bioorganic Mechanisms <small>BCBP Only</small>		

LABORATORY OPTION (CHOOSE 1)

BIOL 4710	Biochemistry Laboratory	BIOL 4720	Molecular Biology Laboratory
-----------	-------------------------	-----------	------------------------------

SUMMER COURSES

BIOL 1010	Intro. to Biology	BIOL 4740	Adv. Cell Biology Laboratory
BIOL 1015	Intro. to Biology Laboratory	BCBP 4760	Molecular Biochemistry I
BIOL 4200	Biostatistics	BIOL 4900	Team Research
BIOL 4270	Human Physiology	BIOL/BCBP 4940	Readings in Biology
BIOL 4320	Microbiology Laboratory	BIOL/BCBP 4970	Non-Thesis Research
BIOL 4720	Molecular Biology Laboratory		