

# BIOCHEMISTRY MAJOR

*Suggested program for students who complete General Chemistry in sophomore year.*

Name: \_\_\_\_\_

Graduation year: \_\_\_\_\_

YEAR	SEMESTER	COURSE	CRED.	PREREQUISITE(S)
<b>Soph.</b>	<b>Fall</b>	CHEM BC2001x (Gen Chem) MATH UN1101x (Calc. I), <i>Note 1</i>	5.0 3.0	Algebra
	<b>Spring</b>	CHEM BC3230y (Orgo I) CHEM BC3328y (Orgo I Lab) MATH UN1102y (Calc. II), <i>Note 1</i> BIOL BC1502y (Intro Biol.) BIOL BC1503y (Intro Biol. Lab)	3.0 2.5 3.0 3.0 2.0	CHEM BC2001x CHEM BC2001x MATH UN1101x,y BIOL BC1001 (or equivalent) BIOL BC1001 (or equivalent)
<b>Junior</b>	<b>Fall</b>	CHEM BC3231x (Orgo II) CHEM BC3333x (Mod. Tech.) PHYS BC2001x (Physics w/lab), <i>Note 2</i>	3.0 3.0 4.5	CHEM BC3230y CHEM BC3328y; Coreq.: CHEM BC3231x MATH UN1101x,y
	<b>Spring</b>	CHEM BC3242y (Quant. Lecture) CHEM BC3338y (Quant. Lab) PHYS BC2002y (Physics w/lab), <i>Note 2</i>	3.0 3.0 4.5	CHEM BC3231x; MATH UN1101x,y; <u>Coreq:</u> CHEM BC3338y CHEM BC3231x, 3333x MATH UN1101x,y
<b>Senior</b>	<b>Fall</b>	CHEM BC3282x (Biol. Chem.) CHEM BC3253x (Quantum) Senior Requirement, <i>Note 4</i> <i>Elective Course (optional), Note 3</i>	3.0 3.0 4.0 3.0	CHEM BC3231x, BIOL BC1502y CHEM BC3242y; MATH UN1102 or 1201; PHYS BC2001x & 2002y
	<b>Spring</b>	CHEM BC3283y (Biol. Chem. II) CHEM BC3355y (Biochem. Lab) Senior Requirement, <i>Note 4</i> <i>CHEM BC3271y (Inorganic), Note 5</i>	3.0 5.0 4.0 3.0	CHEM BC3282x CHEM BC3333x, BC3338y CHEM BC3231x

**Note 1.** Two semesters of math after entering college, including *Calculus I* and (*II* or *III*) are required. Students having AP credit for 1 or 2 semesters of calculus will fulfill this requirement with additional mathematics, statistics, or computer science courses. The mathematics department allows students to take *Calculus I* followed directly by *III*. A third and fourth semester of calculus (MATH UN1201- UN1202) is strongly recommended.

**Note 2.** The Barnard physics sequence (PHYS BC2001x-2002y) is strongly recommended. Any calculus-based Columbia sequence, with two semesters of laboratory work, is acceptable (1401-2, 1601-2, but *not* 1201-2). Consult with your advisor to ensure proper laboratory placement. For greater coverage of basic physics, PHYS BC3001x (*Waves and Optics*) is recommended.

**Note 3.** One elective course is required. A list of approved advanced lecture and/or lab courses at Barnard or Columbia is available.

**Note 4.** *Senior Honors Thesis* (CHEM BC3901/3902, by invitation of the department) or *Guided Research* (CHEM BC3599) at Barnard, Columbia, or elsewhere.

**Note 5.** Completion of CHEM BC3271 (*Inorganic*) is required to receive an American Chemical Society certified degree. It is not required for the major.

**ELECTIVE COURSE(S):**

COURSE	CREDITS	SEMESTER
<input type="checkbox"/> CHEM BC3271y <i>Inorganic</i> (required for ACS certification)	3.0	
<input type="checkbox"/> CHEM BC3280y <i>Advanced Organic</i>	3.0	
<input type="checkbox"/> CHEM BC3252y <i>Thermodynamics and Kinetics</i>	3.0	
<input type="checkbox"/> CHEM BC3254x <i>Methods and Applications in Physical Chemistry</i>	3.0	
<input type="checkbox"/> CHEM BC3348y <i>Advanced Spectroscopy and Analysis Laboratory</i>	3.0	
<input type="checkbox"/> CHEM BC3358x <i>Advanced Chemical Synthesis Laboratory</i>	5.0	
<input type="checkbox"/> Approved CU course: _____	_____	

**SENIOR REQUIREMENT:**

	MENTOR
<input type="checkbox"/> CHEM BC3901x/3902y <i>Senior Honors Thesis</i>	
<input type="checkbox"/> CHEM BC3599x,y <i>Guided Research</i>	

**GENERAL ADVISING NOTES:**

- Biochemistry majors are no longer required to complete the fall semester *Introductory Biology* lecture or lab course (BC BIOL 1500/1501). They still must complete the spring semester (BC BIOL 1502/1503).
- Biochemistry majors are no longer required to complete *Thermodynamics and Kinetics* (BC CHEM 3252).
- Students must complete Inorganic Chemistry (CHEM BC3271) to receive an ACS-certified degree
- Students are strongly encouraged to take a math course after their first year.

**OTHER NOTES/COMMENTS:**