

BIOCHEMISTRY MAJOR

Suggested Four-Year Program*

Name: _____

Graduation year: _____

YEAR	SEMESTER	COURSE	CRED.	PREREQUISITE(S)
First-year	Fall	CHEM BC2001x (Gen Chem) MATH UN1101x (Calc. I), <i>Note 1</i>	5.0 3.0	Algebra
	Spring	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; <u>Coreq.</u> : CHEM BC3230y MATH UN1101x,y BIOL BC1001x (or equivalent) BIOL BC1001x (or equivalent)
Soph.	Fall	CHEM BC3231x (Orgo II) CHEM BC3333x (Mod. Tech.) PHYS BC2001x (Physics w/lab), <i>Note 2</i>	3.0 3.0 4.5	CHEM BC3230x CHEM BC3328x; <u>Coreq.</u> : CHEM BC3231x MATH UN1101
	Spring	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; <u>Coreq.</u> : CHEM BC3242y MATH UN1101x,y
Junior	Fall	CHEM BC3282x (Biol. Chem. I) CHEM BC3253x (Quantum) <i>Elective Course (optional), Note 3</i>	3.0 3.0 3.0	CHEM BC3231x, BIOL BC1502y CHEM BC3242y; MATH UN1102 or 1201; PHYS BC2001x & 2002y
	Spring	CHEM BC3283y (Biol. Chem. II) CHEM BC3355y (Biochem. Lab)	3.0 5.0	CHEM BC3282x CHEM BC3333x, 3338y
Senior	Fall	Senior Requirement, <i>Note 4</i> <i>Elective Course, Note 3</i>	4.0 3.0	
	Spring	Senior Requirement, <i>Note 4</i> CHEM BC3271y, <i>Note 5</i> <i>Elective Course, Note 3</i>	4.0 3.0 3.0	CHEM BC3231x

*If you complete CHEM BC2001 (General Chemistry) in your sophomore year, it is still possible to complete the major in three years. Please consult the department website and contact a Chemistry faculty member for assistance with program planning.

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 (BIOL BC1500/1501). They still must complete the spring semester (BIOL BC1502/1503).
- Biochemistry majors are no longer required to complete *Thermodynamics and Kinetics* (CHEM BC3252).
- 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: