

Youngstown State University

B.A. Degree in Chemistry*

Biochemistry Option

YEAR ONE	<u>SH</u>	<u>SH</u>	
<u>Fall Semester</u>		<u>Spring Semester</u>	
CHEM 1515/L , GenChem1/Lab	4	CHEM 1516/L , GenChem.2/Lab	4
CHEM 1515R , Recitation Gen Chem 1	1	CHEM 1516R , Recitation Gen Chem 2	1
MATH 1571 ¹ , Calculus 1	4	MATH 1572, Calculus 2	4
ENGL 1550 ¹ , Writing 1	3	ENGL 1551, Writing 2	3
Foreign Language ¹	<u>4</u>	Foreign Language	<u>4</u>
Total	16	Total	16
YEAR TWO			
<u>Fall Semester</u>		<u>Spring Semester</u>	
CHEM 3719/L , Organic Chem 1/Lab	4	CHEM 3720/L , OrganicChem 2/Lab	4
CHEM 3719R , Recitation/Org Chem 1	1	CHEM 3720R , Recitation/Org Chem 2	1
CHEM 2604/L , QuantAnalysis/Lab	5	PHYS 2611/L ² , GenPhysics 2/Lab	5
PHYS 2610/L ² , GenPhysics 1/Lab	<u>5</u>	BIOL 2601/L ³ , Molecules and Cells	4
Total	15	GER ⁴	<u>3</u>
		Total	17
YEAR THREE			
<u>Fall Semester</u>		<u>Spring Semester</u>	
CHEM 3785 , Biochemistry 1	3	CHEM 3786 , Biochemistry 2	3
CHEM 3785L , Biochemistry 1 Lab	1	CHEM 5876 , Enzyme Analysis	2
BIOL 2602/L, Organisms and Ecology	4	CHEM 3739, Physical Chem 1/Lab	4
BIOL 3711, Cell Biology	3	BIOL 3721 ⁵ , Genetics	3
GER	<u>4</u>	GER	<u>3</u>
Total	15	Total	15
YEAR FOUR			
<u>Fall Semester</u>		<u>Spring Semester</u>	
CHEM 4850 , Chemistry Research	1	Upper Level Electives ⁷	4
Upper-Level BIOL Elective ⁶	4	Upper-level GER ⁷	6
GER Speech – COMST 1545	3	GER	<u>4</u>
Upper-level Electives ⁷	4	Total	14
GER	<u>4</u>		
Total	16		

*124 total semester hours (sh) required for the BA degree, of which 39 sh are in Chemistry.

¹Placement exams in English, Math, and Foreign Language (FNLG) are required before registration in classes. ENGL 1550 & 1551 must be completed by 62 sh. FNLG through level 2600 required unless satisfied through placement exam.

²Courses in physics may be applied to the GER Natural Science (NS) requirement.

³Biology minor is included in the curriculum and is strongly recommended.

⁴GER requirements in the Knowledge Domain: 2-3 courses in Societies & Institutions (SI); 2 courses in Personal & Social Responsibilities (PS); 2-3 courses in Artistic & Literary Perspectives (AL). For BS CHEM majors, SI + PS + AL must equal seven courses, all other requirements for the GER Knowledge Domain are met through the major.

⁵BIOL 3721, Genetics, is designated as a critical thinking-intensive course. To complete the Basic Skills GER requirements, BS Biochemistry students therefore need to take another critical thinking-intensive course, two writing-intensive classes, and one oral communication-intensive course, which they should take from their electives or GER courses in the Knowledge Domain.

⁶Upper level biology electives may be selected from the list below.

⁷Students must complete at least 48 sh of upper-division courses (3700 or higher) to graduate from YSU with a baccalaureate degree. BA Biochemistry students will complete 34 of these 48 sh as part of the Chemistry and Biology requirements for the major. It is recommended that students choosing to take upper level electives in Chemistry select courses from the list below.

B.A. BIOCHEM ELECTIVES:

CHEM	BIOL
3729 Inorganic Chemistry 1 (3)	4890, Molecular Genetics (3)
3764 Chemical Toxicology (2)	4890L, Molecular Genetics Lab (1)
4850L Chemistry Research Laboratory (2-3)	5827, Gene Manipulation (2)
5821 Intermediate Organic Chemistry (3)	5836, Cell Biology: Molecular Mechanisms (4)
5822/L Advanced Organic Lab (4)	
5832/L Solid State Structural Methods (3)	
5861/L, 5862/L Polymer Science 1, 2 (3+3)	

NOTES:

- Grades of C or better are required in the major and minor.
- Classes taken or repeated out of sequence will not count toward graduation. **Check prerequisites.**
- Residency rule states that the last 30 sh must be completed at YSU; 16sh in major, 21 sh in upper division courses.
- “Intent to Graduate” Form must be filed by 93 sh.