

Biochemistry Major Bachelor of Science (76 credit hours)

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The Biochemistry major is an interdisciplinary major that applies the principles and methods of both biology and chemistry to understanding the molecular basis of life. The major requires a number of basic classes from each discipline with advanced courses in chemical instrumentation, cell and molecular biology, genetics, and biochemistry, and allows the student to select additional courses necessary to pursue certain career objectives.

**Major Requirements:**

BIOL 1000, 2230, 3800, and 4700 do not apply toward the major CHEM 1000 and 2700 do not apply toward the major

**BIOLOGY CORE (24 hours)**

- BIOL 2210, Foundations of Modern Biology I, 4 credit hours
- BIOL 2220, Foundations of Modern Biology II, 4 credit hours
- BIOL 2240, Cell Biology, 4 credit hours
- BIOL 3030 Microbiology, 4 credit hours
- BIOL 4050, Genetics, 4 credit hours
- BIOL 4310, Molecular Biochemistry and Genetics, 4 credit hours

**CHEMISTRY CORE (26 hours)**

- CHEM 2110, General Chemistry I, 4 credit hours
- CHEM 2120, General Chemistry II, 4 credit hours
- CHEM 2210, Organic Chemistry I, 4 credit hours
- CHEM 2220, Organic Chemistry II, 4 credit hours
- CHEM 3100, Analytical Chemistry, 4 credit hours
- CHEM 4110, Thermodynamics & Kinetics, 4 credit hours
- CHEM 4510, Senior Physical Science Practicum I, 1 credit hour
- CHEM 4520, Senior Physical Science Practicum II, 2 credit hours

**Combined Departmental Courses (10 hours)**

- BIOL/CHEM 4210, Biochemistry I, 4 credit hours
- BIOL/CHEM 4220 Biochemistry II 4 credit hours
- BIOL/CHEM/PHYS 4910, Science Seminar I, 1 credit hour
- BIOL/CHEM/PHYS 4920, Science Seminar II, 1 credit hour

**OTHER (16 hours):**

- PHYS 2140 or PHYS 2240, General Physics I (algebra-based) or (calculus-based), 4 Credit Hours
  - PHYS 2150 or PHYS 2250, General Physics II (algebra-based) or (calculus-based), 4 Credit Hours
  - MATH 2010, Calculus I, 4 Credit Hours
  - MATH 2120 or PSYC 2440, Introductory Statistics with Applications or Applied Statistics and Introduction to Research, 4 Credit Hours
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- BIOL 2210, Foundations of Modern Biology I, is a Scientific Ways of Knowing course in the Liberal Arts Program.
  - CHEM 2110, General Chemistry I, is a Scientific Ways of Knowing course in the Liberal Arts Program.
  - MATH 2010, Calculus I, is a Quantitative Reasoning course in the Liberal Arts Program.

**NOTE:** All students must complete 120 total credit hours to graduate from Anderson University

### Proposed course sequence:

Freshman: BIOL 2210, CHEM 2110; BIOL 2220, CHEM 2120  
 Sophomore: CHEM 2210; BIOL 2240, BIOL 3030, CHEM 2220, 3100  
 Junior: BIOL 4050; BIOL/CHEM 4210, BIOL/CHEM 4220,  
 Senior: CHEM 4110, BIOL/CHEM/PHYS 4910, CHEM 4510;  
 BIOL/CHEM/PHYS 4920, BIOL 4310, Department Elective, CHEM 4520

### Biochemistry Major Suggested Course Sequence

SEMESTER 1		SEMESTER 2	
BIOL 2210 (LACC <sup>1</sup> , RC4 <sup>2</sup> )†	4 Hours	BIOL 2220	4 Hours
CHEM 2110 (LACC, RC4)†	4 Hours	CHEM 2120	4 Hours
ENGL 1110 (LACC, RC1)	3 Hours	MATH 2010 (LACC, RC3)†	4 Hours
LART 1050 (LACC, AU1)	1 Hour	ENGL 1120 (LACC, RC1)	3 Hours
S & B Ways of Knowing (LACC, RC5)	3 Hours	Personal Wellness (LACC, AU4)	2 Hours
<b>Total</b>	<b>15 Hours</b>	<b>Total</b>	<b>17 Hours</b>

SEMESTER 3		SEMESTER 4	
BIOL 3030	4 Hours	BIOL 2240	4 Hours
CHEM 2210	4 Hours	CHEM 2220	4 Hours
CHEM 3100 (even <sup>3</sup> ) or Additional Class (odd)	3-4 Hours	PHYS 2X40	4 Hours
Speaking & Listening (LACC, RC2)	3 Hours	Civil Discourse (LACC, AU5)	3 Hours
<b>Total</b>	<b>14-15 Hours</b>	<b>Total</b>	<b>15 Hours</b>

SEMESTER 5		SEMESTER 6	
BIOL 4210	4 Hours	BIOL 4310 (even) or BIOL 4220 (odd)	4 Hours
BIOL 4050	4 Hours	CHEM 4110 (even) or MATH 2120 / PSYC 2440 (odd)	4 Hours
PHYS 2X50	4 Hours	BIBL 2000 (LACC, AU2)	3 Hours
CHEM 3100 (even) or Additional Class (odd)	3-4 Hours	Global Ways of Knowing (LACC, AU6)	3-4 Hours
<b>Total</b>	<b>15-16 Hours</b>	<b>Total</b>	<b>14-15 Hours</b>

<sup>1</sup> "LACC" denotes "Liberal Arts Core Curriculum"

<sup>2</sup> "RC"/"AU" denotes either of the "Raven Core" or "AU Experience" components of the LACC; "4" refers to the 4th bullet point of the RC

† Course is both required by major and partially satisfies the LACC

<sup>3</sup> Indications of even/odd refer to the year in which the Fall semester occurred (i.e. the 2026-2027 school year would be considered "even")

SEMESTER 7		SEMESTER 8	
CHEM 4510	1 Hour	CHEM 4520	1 Hour
BIOL 4910	1 Hour	BIOL 4920	1 Hour
Christian Ways of Knowing (LACC, AU3)	3 Hours	BIOL 4310 (even) or BIOL 4220 (odd)	4 Hours
H & A Ways of Knowing (LACC, RC6)	3 Hours	CHEM 4110 (even) or MATH 2120 / PSYC 2440 (odd)	4 Hours
Additional Class	3 Hours	LACC Elective (RC 2, 3, 5 or 6)	3 Hours
Additional Class	3 Hours	Additional Class	3 Hours
<b>Total</b>	<b>14 Hours</b>	<b>Total</b>	<b>16 Hours</b>