

## 2022 - 2023 Major Map

### Biochemistry, BS

School/College: [The College of Liberal Arts and Sciences](#)  
LABCHBS

In order to complete the requirements of this program, some laboratory courses will be completed in-person at the Tempe Campus.

These laboratory courses will be offered during summer. This may impact your financial aid. Financial aid is available to those who apply and qualify, and students may receive funds to help cover costs for each semester of enrollment. The amount of financial aid that a student is eligible for varies depending on prior education experience and other individual factors. [Learn](#) more about summer financial aid and additional ways to cover summer costs.

Term 1 - A 0 - 7 Credit Hours	Hours	Minimum Grade	Notes
ASU 101-LA: The ASU Experience	1		<ul style="list-style-type: none"> <li>ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students.</li> </ul>
ENG 101 or ENG 102: First-Year Composition OR			
ENG 105: Advanced First-Year Composition OR	3	C	
ENG 107 or ENG 108: First-Year Composition			
Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)	3		
Term hours subtotal:	7		
Term 1 - B 7 - 13 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 MAT 265: Calculus for Engineers I (MA)	3	C	<ul style="list-style-type: none"> <li>View ASU Online first-year student registration information <a href="#">here</a>.</li> </ul>
ENG 101 or ENG 102: First-Year Composition OR			
ENG 105: Advanced First-Year Composition OR	3	C	
ENG 107 or ENG 108: First-Year Composition			
Term hours subtotal:	6		
Term 2 - A 13 - 20 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 CHM 113: General Chemistry I (SQ)	4	C	<ul style="list-style-type: none"> <li>Select your <a href="#">career interest area</a> and play <a href="mailto:me3@asu">me3@ASU</a>.</li> </ul>
MAT 266: Calculus for Engineers II (MA)	3	C	
Term hours subtotal:	7		
Term 2 - B 20 - 27 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 CHM 116: General Chemistry II (SQ)	4	C	<ul style="list-style-type: none"> <li>If interested in health-related professional programs, research the <a href="#">timeline</a> for admissions preparation and <a href="#">general admission requirements</a>.</li> </ul>
Computer/Statistics/Quantitative Applications (CS)	3		
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	7		
Term 3 - A 27 - 34 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 PHY 111: General Physics (SQ)	3	C	<ul style="list-style-type: none"> <li>Review the <a href="#">Career Guide for ASU Online students</a> to learn about available career planning resources.</li> </ul>
PHY 113: General Physics Laboratory (SQ)	1	C	
Social-Behavioral Sciences (SB) AND Global Awareness (G)	3		
Term hours subtotal:	7		

Term 3 - B 34 - 41 Credit Hours <b>Critical course signified by</b> ⚠	Hours	Minimum Grade	Notes
⚠ PHY 112: General Physics (SQ)	3	C	
PHY 114: General Physics Laboratory (SQ)	1	C	
Literacy and Critical Inquiry (L)	3		
⚠ Complete First-Year Composition requirement.			
Complete Mathematics (MA) requirement.			
Term hours subtotal:	7		

Term 4 - A 41 - 47 Credit Hours <b>Critical course signified by</b> ⚠	Hours	Minimum Grade	Notes
⚠ CHM 233: General Organic Chemistry I	3	C	<ul style="list-style-type: none"> <li>Register for a <b>Handshake</b> account and participate in <b>virtual career advising</b>.</li> </ul>
Humanities, Arts and Design (HU) AND Historical Awareness (H)	3		
Term hours subtotal:	6		

Term 4 - B 47 - 53 Credit Hours	Hours	Minimum Grade	Notes
CHM 234: General Organic Chemistry II	3	C	<ul style="list-style-type: none"> <li>Plan for in-person laboratory attendance in summer. Talk with your academic advisor.</li> </ul>
Elective	3		
Term hours subtotal:	6		

Summer 4 53 - 55 Credit Hours <b>Critical course signified by</b> ⚠	Hours	Minimum Grade	Notes
⚠ CHM 237: General Organic Chemistry Laboratory I	1	C	<ul style="list-style-type: none"> <li>ASU Online students will complete all experiments for the Organic Chemistry labs at the ASU Tempe campus during a one-week session in summer. Lab reports will be completed in subsequent weeks during the same summer term.</li> </ul>
CHM 238: General Organic Chemistry Laboratory II	1	C	
Term hours subtotal:	2		

Term 5 - A 55 - 62 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ BIO 181: General Biology I (SQ)	4	C	<ul style="list-style-type: none"> <li>Due to lower-division prerequisites, pre-health students are encouraged to choose upper-division General Studies (HU or SB) and Science and Society courses.</li> <li>Build your professional connections -- join the <b>ASU Mentor Network</b>.</li> </ul>
Humanities, Arts and Design (HU)	3		
Term hours subtotal:	7		

Term 5 - B 62 - 69 Credit Hours	Hours	Minimum Grade	Notes
BIO 182: General Biology II (SG)	4	C	
Science and Society Elective	3	C	
Term hours subtotal:	7		

Term 6 - A 69 - 75 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ BCH 341: Physical Chemistry with a Biological Focus	3	C	
Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)	3		
Term hours subtotal:	6		

Term 6 - B 75 - 81 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
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BCH 463: Biophysical Chemistry	3	C
Upper Division Elective	3	
★ Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).		
Term hours subtotal:	6	

- Create a first draft **resume**.

Term 7 - A 81 - 87 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
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★ BCH 461: General Biochemistry	3	C
Upper Division Elective	3	
Term hours subtotal:	6	

Term 7 - B 87 - 93 Credit Hours	Hours	Minimum Grade	Notes
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BCH 462: General Biochemistry	3	C
Upper Division Elective	3	
Term hours subtotal:	6	

- View **career webinars** offered by the Career and Professional Development Center.

Term 8 - A 93 - 99 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
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★ Advanced BIO Elective	3-4	C
Upper Division Elective	3	
Term hours subtotal:	6-7	

Term 8 - B 99 - 105 Credit Hours	Hours	Minimum Grade	Notes
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Advanced BIO Elective	3-4	C
Upper Division Elective	3	
Term hours subtotal:	6-7	

- Plan for in-person laboratory attendance in summer. Talk with your academic advisor.
- Apply for **full-time career opportunities**.

Summer 8 105 - 108 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
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★ BCH 467: Analytical Biochemistry Laboratory (L)	3	C
Term hours subtotal:	3	

- ASU Online students will complete all experiments for the Analytical Biochemistry lab at the ASU Tempe campus during a one-week session in summer. Lab reports will be completed in subsequent weeks during the same summer term.

Term 9 - A 108 - 114 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
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★ BCH OR CHM Upper Division Elective	3	C
Upper Division Elective	3	
Term hours subtotal:	6	

- Upper Division BCH or CHM Elective cannot be met with BCH 361, BCH 367, BCH 371, BCH 372, CHM 341, CHM 460, or CHM 480. Talk with your academic advisor for options.

Term 9 - B 114 - 120 Credit Hours	Hours	Minimum Grade	Notes
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Upper Division Science and Society Elective	3	C
Upper Division Elective	3	
Term hours subtotal:	6	

- All students pursuing a BS or BSP degree in The College of Liberal Arts and Sciences must complete two courses from the Science and Society list found at <https://thecollege.asu.edu/resources/science-society>. At least one of the two courses must be upper-division and students must earn a C or better in the courses. Both Science and Society courses (i.e., all six credits) may count towards any major, minor, related fields, and ASU General Studies requirements.
- With prior approval of an academic advisor in the School of Molecular Sciences, other courses may be used to satisfy the Advanced BIO Elective requirement.

#### Hide Course List(s)/Track Group(s)

Advanced BIO Elective
BIO 201: Human Anatomy and Physiology I (SG)
BIO 202: Human Anatomy and Physiology II (SG)
BIO 340: General Genetics
BIO 351: Developmental Biology
BIO 353: Cell Biology
BIO 360: Animal Physiology
MIC 205: Microbiology (SG)
MIC 206: Microbiology Laboratory (SG)
MIC 220: Biology of Microorganisms

#### Notes:

- First-Year Composition: All students are placed in ENG 101 unless submission of SAT, ACT, Accuplacer, IELTS, or TOEFL score, or college-level transfer credit or test credit equivalent to ASU's first-year composition course(s), determine otherwise. Students on Polytechnic, Downtown Phoenix and West Campuses are encouraged to complete the Directed Self-Placement survey to choose the first-year composition option they believe best suits their needs. Visit: <https://cisa.asu.edu/DSP>
- Mathematics Placement Assessment score determines placement in first mathematics course.

Please keep in mind that the applicability of a specific transfer course toward an ASU degree program depends on the requirements of the department, division, college or school in which you are enrolled at ASU. Transfer agreements that guarantee the completion of university level requirements do not necessarily meet college and major requirements. Please consult with an advisor for more information.

**Total Hours:** 120

**Upper Division Hours:** 45 minimum

**Major GPA:** 2.00 minimum

**Cumulative GPA:** 2.00 minimum

**Total hrs at ASU:** 30 minimum

**Hrs Resident Credit for**

**Academic Recognition:** 56 minimum

**Total Community College Hrs:** 64 maximum

**Total College Residency Hrs:** 12 minimum

#### General University Requirements Legend

General Studies Core Requirements:

- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Arts and Design (HU)
- Social-Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed next to courses on the major map were valid for the 2022 - 2023 academic year. Please refer to the course catalog for current General Studies designations at time of class registration. General Studies credit is applied according to the designation the course carries at the time the class is taken.