










2024 - 2025 Major Map




Biological Sciences (Biomedical Sciences), BS



School/College: The College of Liberal Arts and Sciences
LABSCMBS

Term 1 - A 0 - 8 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 ASU 101-LA: The ASU Experience	1		<ul style="list-style-type: none"> ASU 101 or other First-Year Seminar is required of all first-year students
 BIO 181: General Biology I (SCIT OR SQ)	4	C	
ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition	3	C	
Term hours subtotal:	8		
Term 1 - B 8 - 15 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 BIO 182: General Biology II (SCIT OR SG)	4	C	<ul style="list-style-type: none"> View ASU Online first-year student registration information here. Create a resume and Handshake account with the Career & Professional Development Center to explore research or internship opportunities Explore extracurriculars (i.e. service learning, community service, internships, research, student involvement, shadowing, etc.) Join a student organization Students transferring Calculus (MAT 270 or MAT 210) will fulfill MAT 251 requirement Students not transferring mathematics courses must take the Mathematics Placement Assessment.
MAT 251: Calculus for Life Sciences (MATH OR MA)	3	C	
Term hours subtotal:	7		
Term 2 - A 15 - 22 Credit Hours	Hours	Minimum Grade	Notes
CHM 113: General Chemistry I (SCIT OR SQ)	4	C	<ul style="list-style-type: none"> Select your career interest area and play me3@ASU
ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition	3	C	
Term hours subtotal:	7		
Term 2 - B 22 - 29 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
CHM 116: General Chemistry II (SCIT OR SQ)	4	C	<ul style="list-style-type: none"> If interested in health-related professional programs, research the timeline for admissions preparation and general admission requirements.
STP 231: Statistics for Life Science (QTRS OR CS)	3	C	
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	7		

- Explore extracurriculars (i.e. service learning, community service, internships, research, student involvement, shadowing, etc.)
- Students transferring General Statistics (STP 226 or PSY 230) will fulfill STP 231 requirement

Term 3 - A 29 - 36 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 BIO 340: General Genetics	4	C	<ul style="list-style-type: none"> • It is not recommended to take more than two lab courses in a term. • Review the Career Guide for ASU Online students to learn about available career planning resources.
Elective	3		
Term hours subtotal:	7		

Term 3 - B 36 - 42 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 BIO 345: Evolution	3	C	<ul style="list-style-type: none"> • Meet with the Career & Professional Development Center to learn how to develop professional skills
Social and Behavioral Sciences (SOBE)	3		
 Complete First-Year Composition requirement.			
 Complete Mathematics (MATH) requirement.			
Term hours subtotal:	6		

Term 4 - A 42 - 48 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CHM 231: Elementary Organic Chemistry (SCIT OR SQ)	3	C	<ul style="list-style-type: none"> • Develop your professional online presence • Some pre-health students may need CHM 233 and CHM 237 instead of CHM 231 and CHM 235. See pre-health website for more information • If CHM 233 and 237 are taken, then CHM 234 and 238 must be taken the following term • Organic Chemistry labs (CHM 237 for CHM 233, and CHM 238 for CHM 234) are required and available at ASU over the summer. Please speak with an advisor for more information.
Science and Society Elective	3	C	
Term hours subtotal:	6		

Term 4 - B 48 - 54 Credit Hours	Hours	Minimum Grade	Notes
BIO 312: Bioethics (HUAD OR HU) OR BIO 416: Biomedical Research Ethics (L)	3	C	<ul style="list-style-type: none"> • BIO 312 or BIO 416 may be used to satisfy the upper-division Science and Society credit for The College.
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	6		

Summer 4 Session 1 54 - 55 Credit Hours	Hours	Minimum Grade	Notes
CHM 235: Elementary Organic Chemistry Laboratory (SCIT OR SQ)	1	C	<ul style="list-style-type: none"> • ASU Online students will complete all experiments for the CHM 235 organic chemistry lab at the ASU Tempe campus during a one-week session in summer. Lab reports will be completed in later weeks during the same summer term. • Some pre-health students may need CHM 237 and CHM 238 organic chemistry labs instead of CHM 235.
Term hours subtotal:	1		

Term 5 - A 55 - 62 Credit Hours	Hours	Minimum Grade	Notes
PHY 101: Introduction to Physics (SCIT OR SQ)	4	C	<ul style="list-style-type: none"> • If interested in health-related professional programs, use ASU's Health Professions Advising to prepare for applications. • Some pre-health students may need PHY 111 and PHY 113 instead of PHY 101 in this term. See the pre-health website for more information. • Meet with your advisor to discuss ways to maximize your remaining time at ASU (i.e. pre-health; Accelerated Masters Programs; study abroad) • Explore graduate school or full-time career opportunities.
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	7		
Term 5 - B 62 - 68 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BIO 353: Cell Biology	3	C	<ul style="list-style-type: none"> • Some pre-health students may need PHY 112 and PHY 114 instead of an elective this term. See the pre-health website for more information. • Network in your career interest area.
Upper Division Elective	3		
Term hours subtotal:	6		
Term 6 - A 68 - 74 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BIO 360: Animal Physiology	3	C	<ul style="list-style-type: none"> • Biochemistry lab BCH 367 is available at ASU over the summer. Please speak with an advisor for more information • Some pre-health students may need PHY 112 and PHY 114 instead of an elective in this term. See pre-health website for more information.
Sustainability (SUST)	3		
Term hours subtotal:	6		
Term 6 - B 74 - 80 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BCH 361: Advanced Principles of Biochemistry	3	C	<ul style="list-style-type: none"> • Biochemistry lab BCH 367 is available at ASU over the summer. Please speak with an advisor for more information.
Elective	3		
Term hours subtotal:	6		
Summer 6 Session 2 80 - 84 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BCH 367: Elementary Biochemistry Laboratory	1	C	<ul style="list-style-type: none"> • ASU Online students will complete all experiments for the BCH 367 biochemistry lab at the ASU Tempe campus during a one-week session in summer. Lab reports will be completed in later weeks during the same summer term.
Elective	3		
Term hours subtotal:	4		
Term 7 - A 84 - 90 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
BIO 351: Developmental Biology OR BIO 420: Immunology:	3	C	<ul style="list-style-type: none"> • Meet with your advisor to verify remaining degree requirements have been met prior to Term 8
★ Molecular and Cellular Foundations OR BIO 440: Functional Genomics OR BIO 462: Endocrine Physiology OR BIO 467:			
Neurobiology			

Global Communities, Societies and Individuals (GCSI)	3
Term hours subtotal:	6

- **Explore** or apply for full-time career opportunities or graduate school

Term 7 - B 90 - 96 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
BIO 351: Developmental Biology OR BIO 420: Immunology: ★ Molecular and Cellular Foundations OR BIO 440: Functional Genomics OR BIO 462: Endocrine Physiology OR BIO 467: Neurobiology	3	C	
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	6		

Term 8 - A 96 - 99 Credit Hours	Hours	Minimum Grade	Notes
Upper Division Elective	3		
Term hours subtotal:	3		<ul style="list-style-type: none"> • Explore other resources available through ASU's Career and Professional Development Center

Term 8 - B 99 - 105 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ Upper Division Biomedical Research Course OR Upper Division Medicine in Society Course	3	C	
American Institutions (AMIT)	3		
Term hours subtotal:	6		<ul style="list-style-type: none"> • Some upper-division Medicine in Society and Biomedical Research Courses require prerequisites, which may be taken as electives. • Courses from the Medicine in Society and Biomedical Research groups must include at least one course from each group and at least one lab course. • Research employment opportunities or graduate school programs • Gather professional references

Term 9 - A 105 - 113 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ Upper Division Biomedical Research Course OR Upper Division Medicine in Society Course	3	C	
Complete 2 courses:	5		
Elective			
Term hours subtotal:	8		<ul style="list-style-type: none"> • Courses from the Medicine in Society and Biomedical Research groups must include at least one course from each group and at least one lab course. • Some upper-division Medicine in Society and Biomedical Research Courses require prerequisites, which may be taken as electives.

Term 9 - B 113 - 120 Credit Hours	Hours	Minimum Grade	Notes
Complete 2 courses:	7		
Upper Division Elective			
Term hours subtotal:	7		<ul style="list-style-type: none"> • Meet with your advisor to verify remaining degree requirements have been met • Continue to apply for full-time career opportunities or graduate school

- Students must take at least one course from the Medicine in Society group and at least one course from the Biomedical Research group, and at least one of those must be a lab course.

- Some upper-division Medicine in Society courses require lower-division prerequisites, which may be taken as electives. See list of Suggested Electives provided.
- 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.

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

Biomedical Research	Medicine in Society	Suggested Electives
BIO 342: General Genetics Laboratory	ASB 301: Global History of Health (HUAD OR SB & G & H) or HST 301: Global History of Health (HUAD OR SB & G & H) or SSH 301: Global History of Health (HUAD OR SB & G & H)	ASB 100: Introduction to Global Health (GCSI OR SB & G)
BIO 357: Cell and Molecular Biology Laboratory		ASB 102: Introduction to Cultural Anthropology (GCSI OR SB & G)
BIO 361: Animal Physiology Laboratory		ASB 222: Buried Cities and Lost Tribes (HUAD OR (HU or SB) & G & H)
BIO 370: Vertebrate Zoology	ASB 443: Cross-Cultural Studies in Global Health (GCSI OR (L or SB) & G) or SSH 403: Cross-Cultural Studies in Global Health (GCSI OR (L or SB) & G)	ASM 104: Bones, Stones, and Human Evolution (SCIT OR SG)
BIO 415: Statistical Models for Biology (QTRS OR CS)		BIO 331: Animal Behavior
BIO 439: Computing for Research	ASB 452: Community Partnerships for Global Health (GCSI OR SB) or SSH 402: Community Partnerships for Global Health (GCSI OR SB)	HST 101: Global History Since 1500 (GCSI OR HU & H & G) or SGS 111: Global History Since 1500 (GCSI OR HU & H & G)
BIO 475: Advanced Human Anatomy		
BIO 484: Internship	ASB 462: Medical Anthropology: Culture and Health (SOBE OR SB & C)	
BIO 495: Undergraduate Research	ASM 345: Disease and Human Evolution	
	ASM 403: Evolutionary Medicine and Global Health	
	ASM 414: Urban, Environmental and Health Challenges (SUST OR SB)	
	BIO 302: Cancer--Mother of All Diseases (L)	
	BIO 311: Biology and Society or HPS 340: Biology and Society	
	BIO 382: Spanish for Biomedical Sciences	
	BIO 394: Healing Traditions of Latino-America	
	BIO 494: Introduction To Clinical Healthcare	
	HPS 331: History of Medicine (HUAD OR HU & H)	
	MIC 314: HIV/AIDS: Science, Behavior, and Society	

- **Total Hours:** 120
- **Upper Division Hours:** 45 minimum
- **University Undergraduate Graduation Requirements**

Notes:

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.

General Studies designations listed next to courses on the major map were valid for the 2024 - 2025 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.