2024 - 2025 Major Map
Biological Sciences, BS

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

Term 1 0 - 15 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
BIO 181: General Biology I (SCIT OR SQ)	4	C	• LIA 101, ASU 101, or other First-Year Seminar required of all first-year students • Students transferring General Statistics (STP 226 or PSY 230) will fulfill STP 231 requirement • Select your career interest area and play me3@ASU
LIA 101: Student Success in The College of Liberal Arts and Sciences	1		
CHM 113: General Chemistry I (SCIT OR SQ)	4	C	
ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition	3	C	
STP 231: Statistics for Life Science (QTRS OR CS)	3	C	
Term hours subtotal:	15		

Term 2 15 - 32 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
BIO 182: General Biology II (SCIT OR SG)	4	C	• Join a student organization • Create a resume and Handshake account with the Career & Professional Development Center • Explore extracurriculars (i.e. service learning, community service, internships, research, student involvement, shadowing, etc.) • Attend a Pre-Health 101 session • Students transferring Calculus (MAT 270 or MAT 210) will fulfill MAT 251 requirement. • Students not transferring mathematics courses must take the Mathematics Placement Assessment.
CHM 116: General Chemistry II (SCIT OR SQ)	4	C	
ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition	3	C	
MAT 251: Calculus for Life Sciences (MATH OR MA)	3	C	
Social and Behavioral Sciences (SOBE)	3		
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	17		

Term 3 32 - 46 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
BIO 340: General Genetics	4	C	• Some pre-health students need to take CHM 233 and CHM 237 instead of CHM 231 and CHM 235. See the pre-health website for more information. • If CHM 233 and 237 are taken, then CHM 234 and 238 must be taken the following semester • It is not recommended to take more than two lab courses in a term. • Explore extracurriculars (i.e. service learning, community service, internships, research, student involvement, shadowing, etc.) • Attend a Study Abroad 101 Session
CHM 231: Elementary Organic Chemistry (SCIT OR SQ)	3		
CHM 235: Elementary Organic Chemistry Laboratory (SCIT OR SQ)	1		
Complete 2 courses: Humanities, Arts and Design (HUAD)	6		
Complete First-Year Composition requirement.			
Complete Mathematics (MATH) requirement.			
Term hours subtotal:	14		

- Explore minors or certificates

Term 4 46 - 61 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
BIO 345: Evolution	3	C	• Some pre-health students may need CHM 234 and CHM 238 instead of the elective in this term. See the pre-health website for more information • If CHM 233 and 237 are taken, then CHM 234 and 238 must be taken the following semester • Explore extracurriculars (i.e. service learning, community service, internships, research, student involvement, shadowing, etc.) • Explore or pursue internship opportunities • Meet with the Career & Professional Development Center to learn how to develop professional skills
Science and Society Elective	3	C	
Global Communities, Societies and Individuals (GCSI)	3		
Governance and Civic Engagement (CIVI)	3		
Sustainability (SUST)	3		
Term hours subtotal:	15		

Term 5 61 - 75 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
Upper Division Additional Major Requirement Course	3	C	• 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 master's programs; study abroad)
PHY 101: Introduction to Physics (SCIT OR SQ)	4	C	
Major Laboratory/Research Course	1-4	C	
Complete 2 courses: Upper Division Elective	6		
Term hours subtotal:	14-17		

Term 6 75 - 90 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
Upper Division Additional Major Requirement Course	3	C	• Some pre-health students may need PHY 112 and PHY 114 instead of an elective in this term. See the pre-health website for more information • Use Handshake to research employment opportunities
Upper Division Major Laboratory/Research Course	2-4	C	
Upper Division Elective	3		
Complete 2 courses: Elective	7		
Term hours subtotal:	15-17		

Term 7 90 - 105 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
Upper Division Additional Major Requirement Course	3	C	• Explore or apply for full-time career opportunities or graduate school • Meet with your advisor to verify remaining degree requirements have been met prior to Term 8
Upper Division Major Elective Course	3	C	
Upper Division Science and Society Elective	3	C	
American Institutions (AMIT)	3		
Upper Division Elective	3		
Term hours subtotal:	15		

Term 8 105 - 120 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
Complete 2 courses: Upper Division Additional Major Requirement Course	6-7	C	• Continue to apply for full-time career opportunities or graduate school
Upper Division Major Elective Course	3	C	
Complete 2 courses: Elective	6		
Term hours subtotal:	15-16		

- 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)

Major Laboratory/Research Courses	Major Elective Courses	Additional Major Requirements Courses
BCH 367: Elementary Biochemistry Laboratory	BCH 361: Advanced Principles of Biochemistry	**Ethics, History, and Philosophy of Science**
BIO 303: Plant Diversity and Evolution (L or SG)	BIO OR HPS OR MBB OR MIC 3** Elective	BIO 311: Biology and Society or HPS 340: Biology and Society
BIO 308: Plant Physiology	BIO OR HPS OR MBB OR MIC 4** Elective	BIO 312: Bioethics (HUAD OR HU) or PHI 320: Bioethics (HUAD OR HU)
BIO 321: Introductory Ecology Laboratory		BIO 318: History of Medicine (HUAD OR HU & H) or HPS 331: History of Medicine (HUAD OR HU & H)
BIO 342: General Genetics Laboratory		BIO 416: Biomedical Research Ethics (L) or HPS 410: Biomedical Research Ethics (L)
BIO 343: Genetic Engineering and Society (L) or MBB 343: Genetic Engineering and Society (L)		HPS 314: Philosophy of Science (HUAD OR HU) or PHI 314: Philosophy of Science (HUAD OR HU)
BIO 352: Laboratory in Vertebrate Developmental Anatomy		**Ecology, Conservation Biology and Evolution**
BIO 354: Cell Biology Laboratory		BIO 320: Fundamentals of Ecology
BIO 357: Cell and Molecular Biology Laboratory		BIO 322: Conservation of Biodiversity
BIO 361: Animal Physiology Laboratory		BIO 421: Landscape Ecology
BIO 370: Vertebrate Zoology		BIO 422: Ecosystem Ecology
BIO 385: Comparative Invertebrate Zoology		BIO 423: Population and Community Ecology
BIO 386: General Entomology		**Microbiology, Molecular, & Cellular Biology**
BIO 390: Medical/Dental Field Placement or BIO 484: Internship or MIC 484: Internship		BCH 361: Advanced Principles of Biochemistry
BIO 415: Statistical Models for Biology (QTRS OR CS)		BIO 343: Genetic Engineering and Society (L) or MBB 343: Genetic Engineering and Society (L)
BIO 435: Research Techniques in Animal Behavior		BIO 351: Developmental Biology
BIO 451: Cell Biotechnology: Cell Culture, Immunocytochemistry and Bioimaging		BIO 353: Cell Biology
BIO 471: Ornithology		BIO 420: Immunology: Molecular and Cellular Foundations or MIC 420: Immunology: Molecular and Cellular Foundations
BIO 474: Herpetology		BIO 440: Functional Genomics
BIO 475: Advanced Human Anatomy		MIC 220: Biology of Microorganisms AND MIC 206: Microbiology Laboratory (SCIT OR SG)
BIO 492: Honors Directed Study or MIC 492: Honors Directed Study or MBB 492: Honors Directed Study		
BIO 495: Undergraduate Research or MBB 495: Undergraduate Research or MIC 495: Undergraduate Research		

MBB 350: Applied Genetics

MIC 220: Biology of Microorganisms AND MIC 206: Microbiology Laboratory (SCIT OR SG)

MIC 302: Advanced Bacteriology Laboratory (L)

MIC 421: Experimental Immunology

Organismal Biology

BIO 308: Plant Physiology

BIO 331: Animal Behavior

BIO 360: Animal Physiology

BIO 370: Vertebrate Zoology

BIO 461: Comparative Animal Physiology

BIO 462: Endocrine Physiology

BIO 467: Neurobiology

- **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.