



2024 - 2025 Major Map




Biotechnology and Bioenterprise, BS



School/College: New College of Interdisciplinary Arts and Sciences
ASBITEBS



Term 1 0 - 15 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
⚠ BIO 181: General Biology I (SCIT OR SQ)	4	C	<ul style="list-style-type: none"> MAT 210 or higher-level (MATH) course accepted. MAT and STP requirements differ according to Focus Area selection: (1) Biotechnology: MAT 210 or higher-level (MATH), STP 226. (2) Bioentrepreneurship: MAT 210 or higher-level (MATH), STP 226. (3) Biostatistics: MAT 270, MAT 271, STP 280, STP 281. ASU 101 or college-specific First-Year Seminar required of all first-year students. NEW 101 satisfies this requirement. IAS 300 (three credit hours) is required for all transfer students in place of NEW 101. Select your Career Interest Community and play me3@ASU. Activate your Handshake account and build out your profile.
⚠ 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	
MAT 210: Brief Calculus (MATH OR MA) OR MAT 251: Calculus for Life Sciences (MATH OR MA) OR MAT 270: Calculus with Analytic Geometry I (MATH OR MA)	3-4	C	
NEW 101: The ASU New College Experience OR IAS 300: Career Strategies and Personal Resilience (L or SB)	1-3		
Term hours subtotal:	15-18		
Term 2 15 - 29 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"> Focus Area determines STP course in Term 2: for Biotechnology or Bioentrepreneurship Focus Area, complete STP 226; for Biostatistics Focus Area, complete STP 280. Create a first draft resume. Join a student club or professional organization. Secure a part-time job or volunteer experience.
⚠ 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	
STP 226: Elements of Statistics (QTRS OR CS) OR STP 280: Probability and Statistics for Researchers (QTRS OR CS)	3	C	
⚠ Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	14		
Term 3 29 - 43 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
CHM 233: General Organic Chemistry I AND CHM 237: General Organic Chemistry Laboratory I	4	C	<ul style="list-style-type: none"> Develop your research skills. Develop your professional skills. Interested in pre-professional pathways? Explore our pre-health and pre-law websites.
PHY 101: Introduction to Physics (SCIT OR SQ)	4	C	
Humanities, Arts and Design (HUAD)	3		
Social and Behavioral Sciences (SOBE)	3		
⚠ Complete First-Year Composition requirement.			
Complete Mathematics (MATH) requirement.			
Term hours subtotal:	14		

Term 4 43 - 58 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CHM 234: General Organic Chemistry II AND CHM 238: General Organic Chemistry Laboratory II	4	C	<ul style="list-style-type: none"> General elective credit hours will be adjusted depending on chosen Focus Area. Discuss with your academic advisor. Explore an internship, an IGLE international experience, or ASU Study Abroad.
Global Communities, Societies and Individuals (GCSI)	3		
Governance and Civic Engagement (CIVI)	3		
Humanities, Arts and Design (HUAD)	3		
Elective	2-0		
Term hours subtotal:	15-13		

Term 5 58 - 75 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 LSC 347: Fundamentals of Genetics AND LSC 348: Fundamentals of Genetics Laboratory	4	C	<ul style="list-style-type: none"> Students choosing the Bioentrepreneurship Focus Area should complete TMC 110 as their first Focus Area course. General elective credit hours will be adjusted depending on chosen Focus Area. Discuss with your academic advisor. Thinking about graduate school? Consider registering for a grad school test prep course and explore accelerated master's degrees. Develop your professional online presence.
Focus Area Course	4-3	C	
Complete 3 courses:	9		
Upper Division Elective			
Term hours subtotal:	17-16		

Term 6 75 - 92 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 BIO 353: Cell Biology AND BIO 354: Cell Biology Laboratory	4	C	<ul style="list-style-type: none"> General elective credit hours will be adjusted depending on chosen Focus Area. Discuss with your academic advisor. Use Handshake to research employment opportunities. Complete an in person or virtual practice interview.
 Focus Area Course	4-3	C	
Sustainability (SUST)	3		
Complete 2 courses:	6		
Upper Division Elective			
Term hours subtotal:	17-16		

Term 7 92 - 105 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 MIC 443: The Microbial Universe AND MIC 444: The Microbial Universe Laboratory	4	C	<ul style="list-style-type: none"> Students in the Biostatistics Focus Area and the Bioentrepreneurship Focus Area complete a Focus Area course in this term. General elective credit hours will be adjusted depending on chosen Focus Area. Discuss with your academic advisor. Gather professional references.
TEM 230: Creativity and Business Innovation OR LSC 482: Design Thinking for National Security	3	C	
Upper Division Capstone Experience	3	C	
Upper Division Global and Civic Engagement Requirement: satisfied through completion of 6 credits of upper-division courses with a Global Communities, Societies and Individuals (GCSI) or Governance and Civic Engagement (CIVI) designation, in addition to the courses used to meet the university General Studies requirements; or completion of 3 credits from an ASU-approved Global Education program. Adjustment to upper-division and elective hours is required if a lower-division Global Education course is used.	3	C	
Focus Area Course	0-3	C	
Term hours subtotal:	13-16		

Term 8 105 - 120 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 Focus Area Course	0-3	C	

Upper Division Global and Civic Engagement Requirement: satisfied through completion of 6 credits of upper-division courses with a Global Communities, Societies and Individuals (GCSI) or Governance and Civic Engagement (CIVI) designation, in addition to the courses used to meet the university General Studies requirements; or completion of 3 credits from an ASU-approved Global Education program. Adjustment to upper-division and elective hours is required if a lower-division Global Education course is used.

3

C

American Institutions (AMIT)

3

Complete 3 courses:

Upper Division Elective

9-6

Term hours subtotal: 15

- Students in the Bioentrepreneurship Focus Area complete a Focus Area course in this term.
- General elective credit hours will be adjusted depending on chosen Focus Area. Discuss with your academic advisor.
- Apply for **full-time career opportunities**.

- Students select one Focus Area and complete all courses listed for that Focus Area. General Elective credit hours will be adjusted depending on chosen Focus Area. Please consult your advisor.

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

Biostatistics Focus Area	Biotechnology Focus Area	Bioentrepreneurship Focus Area
MAT 271: Calculus with Analytic Geometry II (MATH OR MA)	BCH 371: Modern Concepts in Biochemistry AND BCH 372: Modern Concepts in Biochemistry Laboratory	TMC 110: Understanding the Enterprise
STP 281: Statistical Analysis for Researchers	BIO 443: Applied Molecular Genetics and Genomics AND LSC 447: Molecular Genetics Laboratory	TMC 310: Promotion of the Enterprise
STP 310: Design and Analysis of Experiments		TMC 320: Funding the Enterprise
		TMC 330: Leading the Enterprise
Capstone Experience		
ENV 388: STEM Research Fundamentals or FOR 388: STEM Research Fundamentals or LSC 388: STEM Research Fundamentals or PLB 388: STEM Research Fundamentals or PTX 388: STEM Research Fundamentals		
ENV 484: Internship or FOR 484: Internship or LSC 484: Internship or PTX 484: Internship		
BIO 495: Undergraduate Research		
BIO 492: Honors Directed Study or ENV 492: Honors Directed Study or FOR 492: Honors Directed Study or LSC 492: Honors Directed Study or PTX 492: Honors Directed Study		
BIO 493: Honors Thesis (L) or ENV 493: Honors Thesis (L) or FOR 493: Honors Thesis (L) or LSC 493: Honors Thesis (L) or PTX 493: Honors Thesis (L)		
BIO 499: Individualized Instruction or ENV 499: Individualized Instruction or FOR 499: Individualized Instruction or LSC 499: Individualized Instruction or PTX 499: null		

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

Notes:

Mathematics Placement Assessment score determines placement in first mathematics course.

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.