2022 - 2023 Major Map

Applied Mathematics for the Life and Social Sciences, BS

School/College: College of Global Futures
LAAMLBS

Term 1 0 - 15 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
AML 100: Introduction to Applied Mathematics for the Life and Social Sciences (MA)	3	C	• ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students. • Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation. • Select your career interest area and play me3@ASU. • Create a first draft resume.
BIO 181: General Biology I (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	
LIA 101: Student Success in The College of Liberal Arts and Sciences	1		
MAT 270: Calculus with Analytic Geometry I (MA)	4	C	
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	15		

Term 2 15 - 32 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
CSE 100: Principles of Programming with C++ (CS) OR CSE 110: Principles of Programming (CS)	3	C	• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation. • Use the SB course in this term as a prerequisite for upper-division work in the Social Science track. Recommended courses are found in the track list below. • Build your professional connections -- join the ASU Mentor Network. • Join a student club or professional organization.
BIO 182: General Biology II (SG)	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 271: Calculus with Analytic Geometry II (MA)	4	C	
Social-Behavioral Sciences (SB)	3		
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	17		

Term 3 32 - 48 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
MAT 272: Calculus with Analytic Geometry III (MA)	4	C	• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation. • Secure a part-time job or volunteer experience. • Develop your skills.
Science and Society Elective	3	C	
Global Awareness (G)	3		
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
Literacy and Critical Inquiry (L)	3		
Complete First-Year Composition requirement.			
Complete Mathematics (MA) requirement.			
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	16		

Term 4 48 - 63 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes

AML 253: Introduction to Mathematical Tools and Modeling for the Life and Social Sciences	3	C	• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation. • Use the SB course in this term to complete a prerequisite for upper-division work in the Social Science track. Recommended courses are found in the track list below. • Explore an internship.
MAT 274: Elementary Differential Equations (MA) OR MAT 275: Modern Differential Equations (MA)	3	C	
STP 420: Introductory Applied Statistics (CS)	3	C	
Social-Behavioral Sciences (SB)	3		
Elective	3		
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	15		

Term 5 63 - 78 Credit Hours Necessary course signified by	**Hours**	**Minimum Grade**	**Notes**
Upper Division Life Science Course	3	C	• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation. • Develop your professional online presence .
Upper Division Social Science Course	3	C	
STP 421: Probability	3	C	
Humanities, Arts and Design (HU) AND Historical Awareness (H)	3		
Elective	3		
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	15		

Term 6 78 - 93 Credit Hours Necessary course signified by	**Hours**	**Minimum Grade**	**Notes**
MAT 342: Linear Algebra OR MAT 343: Applied Linear Algebra	3	C	• Research employment opportunities. • Complete an in person or virtual practice interview.
Upper Division Applied Mathematics Course	3	C	
Upper Division Life Science Course	3	C	
Upper Division Elective OR ASB 484: Internship	3		
Elective	3		
Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).			
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	15		

Term 7 93 - 108 Credit Hours Necessary course signified by	**Hours**	**Minimum Grade**	**Notes**
Upper Division Applied Mathematics Course	3	C	• Gather professional references. • Apply for full-time career opportunities.
Upper Division Social Science Course	3	C	
Upper Division Science and Society Elective	3	C	
Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)	3		
Upper Division Literacy and Critical Inquiry (L)	3		
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	15		

Term 8 108 - 120 Credit Hours Necessary course signified by	**Hours**	**Minimum Grade**	**Notes**
AML 406: Directed Reading and Research in Applied Mathematics for the Life and Social Sciences	3	C	
Upper Division Elective	3		
Complete 2 courses: Elective	6		
Minimum 2.00 GPA in STP and MAT.			
Term hours subtotal:	12		

- 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)

Recommended SB Courses
ASB 102: Introduction to Cultural Anthropology (SB & G)
CDE 232: Human Development (SB)
JUS 105: Introduction to Justice Studies (SB)
POS 110: American Government and Politics (SB)
PSY 101: Introduction to Psychology (SB)
SOC 101: Introductory Sociology (SB)

Upper Division Life Science
AML 394: Modeling Simulation Neglected Tropical Diseases
ASB 363: From Cells to Society: Understanding Complexity or BIO 363: From Cells to Society: Understanding Complexity or SOS 363: From Cells to Society: Understanding Complexity
ASB 494: Applied Epidemiology
ASM 342: Evolution of Human Behavior or BIO 327: Evolution of Human Behavior
BIO 302: Cancer--Mother of All Diseases (L)
BIO 321: Introductory Ecology Laboratory
BIO 415: Statistical Models for Biology (CS)
BMI 465: Introduction to Comparative Genomics
HCD 300: Biostatistics (CS) or PBH 300: Biostatistics (CS)
SOS 424: Dynamic Modeling in Social and Ecological Systems

Upper Division Social Science
ASB 316: Money and Culture (L or SB)
ASB 394: Statistics for Social Scientists
ASM 345: Disease and Human Evolution
ASM 465: Quantification and Analysis for Anthropologists (CS)
ASM 494: Bayesian Statistics in Theory and Practice
GCU 351: Population Geography (SB & G)
GIS 461: Fundamentals of Spatial Optimization or PUP 481: Fundamentals of Spatial Optimization
JUS 301: Research in Justice Studies (SB)
JUS 302: Statistical Analysis for Justice Studies (CS)
POS 301: Empirical Political Inquiry (SB) or SGS 305: Empirical Political Inquiry (SB)
POS 401: Political Statistics (CS) or SGS 401: Political Statistics (CS)
POS 485: Political Economy (SB)
SOC 331: Environmental Sociology (SB & G)
SOC 390: Social Statistics I (CS)
SOC 391: Applied Research Methods (L or SB)
SOC 448: Epidemics and Society (SB & G)

Upper Division Applied Mathematics
AML 441: Mathematical Concepts and Tools in Sustainability or SOS 441: Mathematical Concepts and Tools in Sustainability
AML 494: Modeling with Game Theory
MAT 300: Mathematical Structures (L)
MAT 343: Applied Linear Algebra
MAT 355: Introduction to Computational Molecular Biology (CS) or BIO 355: Introduction to Computational Molecular Biology (CS)

MAT 371: Advanced Calculus I

MAT 394: Forensic DNA Analysis

MAT 421: Applied Computational Methods (CS)

MAT 451: Mathematical Modeling (CS)

MAT 494: Big Data and Mathematical Modelling

MAT 494: Data Analysis in Neuroscience

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.

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

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.