










## 2023 - 2024 Major Map




### Mathematics, BA



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




Term 1 0 - 15 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CSE 110: Principles of Programming (CS) OR CSE 100: Principles of Programming with C++ (CS)	3	C	<ul style="list-style-type: none"> <li>ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students.</li> <li><b>ASU Language Placement:</b> Only true beginners are eligible for 101-level courses. All other students are required to take a placement exam, regardless of prior credit earned.</li> <li>Select your <b>Career Interest Communities</b> and play <b>me3@ASU</b>.</li> </ul>
 MAT 270: Calculus with Analytic Geometry I (MA)	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		
Second Language: Requirement satisfied through the following: * Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C	
Maintain 2.50 GPA in Critical Tracking Courses.			
Term hours subtotal:	15		
Term 2 15 - 30 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 271: Calculus with Analytic Geometry II (MA)	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	
Related Field	4	C	
Second Language: Requirement satisfied through the following: * Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C	
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Maintain 2.50 GPA in Critical Tracking Courses.			
Term hours subtotal:	15		
Term 3 30 - 45 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 272: Calculus with Analytic Geometry III (MA)	4	C	<ul style="list-style-type: none"> <li>Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</li> <li>Meet with your academic advisor to discuss summer internship and/or Research Opportunities for Undergraduates (REU).</li> <li>PHY 121 &amp; PHY 122 and/or MSE 208 are recommended to satisfy the Natural</li> </ul>
Second Language: Requirement satisfied through the following: * Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C	
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
Natural Science - Quantitative (SQ)	4		
 Complete First-Year Composition requirement.			
Complete Mathematics (MA) requirement.			
Maintain 2.50 GPA in Critical Tracking Courses.			



Term hours subtotal: 15

Science - Quantitative (SQ) requirement as they also satisfy Related Field requirements.

Term 4 45 - 61 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 MAT 300: Mathematical Structures (L)	3	C	<ul style="list-style-type: none"> <li>• Meet with your academic advisor to discuss options for adding a minor, certificate, or concurrent major to your degree program.</li> <li>• Upper division MAT/STP courses should be taken through the Tempe campus, unless approved by a SoMSS advisor.</li> </ul>
 MAT 342: Linear Algebra OR MAT 343: Applied Linear Algebra	3	C	
Second Language: Requirement satisfied through the following:			
* Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C	
Humanities, Arts and Design (HU) AND Historical Awareness (H)	3		
Social-Behavioral Sciences (SB) AND Global Awareness (G)	3		
Maintain 2.50 GPA in Critical Tracking Courses.			
Term hours subtotal:	16		

Term 5 61 - 77 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
 MAT 370: Intermediate Calculus OR MAT 371: Advanced Calculus I	3	C	<ul style="list-style-type: none"> <li>• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</li> <li>• Meet with your academic advisor to discuss post-graduation plans, e.g. graduate school, career preparation.</li> <li>• Upper division MAT/STP courses should be taken through the Tempe campus, unless approved by a SoMSS advisor.</li> </ul>
Complete 2 courses:			
Related Field	6	C	
Natural Science - Quantitative (SQ) OR Natural Science - General (SG)	4		
Upper Division Elective	3		
Term hours subtotal:	16		

Term 6 77 - 91 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
 Upper Division Additional Course in the Major (ACT, DAT, MAT or STP)	3	C	<ul style="list-style-type: none"> <li>• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</li> <li>• Upper division MAT/STP courses should be taken through the Tempe campus, unless approved by a SoMSS advisor.</li> <li>• Use Handshake to research <b>employment opportunities</b>.</li> <li>• PHI 103 is recommended for the Literacy and Critical Inquiry (L) requirement.</li> </ul>
Related Field	2	C	
Literacy and Critical Inquiry (L)	3		
Social-Behavioral Sciences (SB)	3		
Upper Division Elective OR MAT 484: Internship	3		
 Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).			
Term hours subtotal:	14		

Term 7 91 - 106 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
Complete 2 courses:			<ul style="list-style-type: none"> <li>• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</li> <li>• Upper division MAT/STP courses should be taken through the Tempe campus, unless approved by a SoMSS advisor.</li> <li>• Meet with your academic advisor to discuss post-graduation plans, e.g. graduate school, career preparation.</li> <li>• Develop your <b>professional online presence</b>.</li> </ul>
 Upper Division Additional Course in the Major (ACT, DAT, MAT or STP)	6	C	
Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)	3		
Complete 2 courses:			
Upper Division Elective	6		
Term hours subtotal:	15		

Term 8 106 - 120 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ Upper Division Additional Course in the Major (ACT, DAT, MAT or STP)	4	C	<ul style="list-style-type: none"> <li>• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</li> <li>• Upper division MAT/STP courses should be taken through the Tempe campus, unless approved by a SoMSS advisor.</li> <li>• Meet with your academic advisor for final degree check and apply for graduation through your My ASU.</li> </ul>
★ Additional Course in the Major (ACT, DAT, MAT or STP)	2	C	
Complete 3 courses:			
Upper Division Elective	8		
Term hours subtotal:	14		

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

Additional Course in the Major (ACT, DAT, MAT or STP)	Related Field
ACT Upper Division Elective	ACT Upper Division Elective
DAT Upper Division Elective	AST Upper Division Elective
MAT 243: Discrete Mathematical Structures	BCH 4** Elective
MAT 274: Elementary Differential Equations (MA) or MAT 275: Modern Differential Equations (MA)	BME Upper Division Elective
MAT Upper Division Elective	CEE Upper Division Elective
STP 4** Elective	CHE Elective
	CHM 341: Elementary Physical Chemistry
	CHM 343: Elementary Physical Chemistry Laboratory
	CHM 345: Physical Chemistry I
	CHM 346: Physical Chemistry II
	CHM 348: Physical Chemistry Laboratory I (L)
	CHM 349: Physical Chemistry Laboratory II (L)
	CHM 453: Inorganic Chemistry
	CHM 460: Biological Chemistry
	CHM 471: Solid-State Chemistry
	CIS 2** Elective
	CIS Upper Division Elective
	CSE Elective
	DAT Upper Division Elective
	ECN Upper Division Elective
	EEE Elective
	FIN Upper Division Elective
	GLG 418: Geophysics
	GLG 419: Geodynamics

GLG 470: Hydrogeology

GLG 481: Geochemistry

IEE Upper Division Elective

MAE Elective

MAT 243: Discrete Mathematical Structures

MAT 274: Elementary Differential  
Equations (MA) or MAT 275: Modern  
Differential Equations (MA)

MAT Upper Division Elective

MSE Elective

PHI 333: Symbolic Logic

PHI 413: Advanced Symbolic Logic

PHY 121: University Physics I: Mechanics  
(SQ)

PHY 122: University Physics Laboratory I  
(SQ)

PHY 131: University Physics II: Electricity  
and Magnetism (SQ)

PHY 132: University Physics Laboratory II  
(SQ)

PHY 150: Physics I (SQ)

PHY 151: Physics II (SQ)

PHY 2\*\* Elective

PHY Upper Division Elective

STP Upper Division Elective

#### 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 2023 - 2024 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.