







# 2019 - 2020 Major Map



## Complexity Science, BS

School/College: Rob Walton College of Global Futures  
LAAMLBS


Term 1 0 - 15 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 AML 100: Introduction to Applied Mathematics for the Life and Social Sciences (MA)	3	C	<ul style="list-style-type: none"> <li>An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses</li> <li>Mathematics Placement Assessment score determines placement in mathematics course and eligibility for AML 100</li> <li>ASU 101 or college-specific equivalent First-Year Seminar required of all freshman students.</li> <li>Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</li> <li>Select your <b>career interest area</b> and play <a href="mailto:me3@asu.edu">me3@ASU</a>.</li> <li>Create a first draft <b>resume</b>.</li> </ul>
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 <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 CSE 100: Principles of Programming with C++ (CS) OR CSE 110: Principles of Programming with Java (CS)	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>Use the SB course in this term as a prerequisite for upper division work in the Social Science track. Recommended courses are found in track list below.</li> <li><b>Network</b> in your career interest area.</li> <li>Join a <b>student club</b> or professional organization.</li> </ul>
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 <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
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MAT 272: Calculus with Analytic Geometry III (MA)	4	C
CLAS 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



- 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**.

Term 4 48 - 63 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
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 AML 253: Introduction to Mathematical Tools and Modeling for the Life and Social Sciences	3	C
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

- 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**.

Term 5 63 - 78 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
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 Upper Division Life Science course	3	C
 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

- 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**.

Term 6 78 - 93 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
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 MAT 342: Linear Algebra OR	3	C
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- Research **employment opportunities**.

MAT 343: Applied Linear Algebra

★ Upper Division Applied Mathematics 3 C

★ Upper Division Life Science course 3 C

Upper Division Elective OR  
ASB 484: Internship 3

Elective 3

Minimum 2.00 GPA in STP and MAT.

★ Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).

Term hours subtotal: 15

- Complete an in person or virtual practice interview.

Term 7 93 - 108 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
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★ Upper Division Applied Mathematics 3 C

★ Upper Division Social Science course 3 C

Upper Division CLAS 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

- Gather professional references.
- Apply for full-time career opportunities.

Term 8 108 - 120 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
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★ 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

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

Recommended SB courses

ASB 102: Introduction to Cultural Anthropology (SB & G)

Upper Division Life Science

ASM 342: Evolution of Human Behavior or BIO 327: Evolution of Human Behavior

Upper Division Social Science

ASB 316: Money and Culture (L or SB)  
ASM 345: Disease and Human Evolution

CDE 232: Human Development (SB)	BIO 302: Cancer--Mother of All Diseases (L)	ASM 465: Quantification and Analysis for Anthropologists (CS)
JUS 105: Introduction to Justice Studies (SB)	BIO 320: Fundamentals of Ecology	EXW 444: Epidemiology
POS 110: American Government and Politics (SB)	BIO 415: Biometry (CS)	GCU 351: Population Geography (SB & G)
PSY 101: Introduction to Psychology (SB)	BIO 417: Experimental Design	GIS 461: Optimization Fundamentals for Spatial Analysis or PUP 481: Optimization Fundamentals for Spatial Analysis
SOC 101: Introductory Sociology (SB)	BIO 423: Population and Community Ecology	JUS 301: Research in Justice Studies (SB)
	BMI 465: Introduction to Comparative Genomics	JUS 302: Statistical Analysis for Justice Studies (CS)
	EXW 444: Epidemiology	POS 301: Empirical Political Inquiry (SB) or SGS 305: Empirical Political Inquiry (SB)
	HCD 300: Biostatistics (CS) or PBH 300: Biostatistics (CS)	POS 401: Political Statistics (CS) or SGS 401: Political Statistics (CS)
	SOS 424: Dynamic Modeling in Social and Ecological Systems	POS 485: Political Economy (SB)
		SOC 331: Environmental Sociology (SB & G)
		SOC 390: Social Statistics I (CS)
		SOC 391: 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

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 421: Applied Computational Methods (CS)

MAT 451: Mathematical Modeling (CS)

**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 2019 - 2020 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.