

# School of Human Evolution and Social Change

## B.S. in Applied Math Advising Worksheet (2013 and Beyond)

Name: \_\_\_\_\_ Date: \_\_\_\_\_ G.P.A. \_\_\_\_\_

ASU ID#: \_\_\_\_\_ Catalog Year: \_\_\_\_\_

Totals	Total	Min Hrs Needed
Hours Taken:		120
Hours in Progress:		X
Hours Still Needed:		X
Upper Division Hours Still Needed:		45
ASU Resident Credit Hours Still Needed:		30

University General Studies Requirements			
Course Number and Title	Hrs	UD	Fulfilled
<b>First-Year Composition (3-6 Credits)</b>			
ENG 101 (107)	3		
ENG 102 (108)	3		
<i>or if eligible</i> ENG 105	3		
<b>Literacy and Critical Inquiry (L) (6 Credits)</b>			
L (Upper-division):		3	
L:	3		
<b>Mathematical Studies (MA/CS) (6 Credits)</b>			
MA (MAT 117 or higher): (MAT 270)	3		
CS: (CSE 100 or CSE 110)	3		
<b>Humanities, Arts and Design (HU) and Social - Behavioral Sciences (SB) (15 Credits)</b>			
HU or SB (Upper division):		3	
HU:	3		
HU:	3		
SB:	3		
SB:	3		
<b>Natural Sciences (SQ/SG) (8 Credits)</b>			
Lab Science (SQ): (BIO 181)	4		
Lab Science (SQ or SG): (BIO 182)	4		
<b>Awareness Areas</b>			
C:			
G:			
H:			

University and College Graduation Requirements			
*B.S. degree seekers must complete six semester hours of "CLAS Science and Society" courses. <b>SS courses are bolded.</b> For more information, go to: <a href="https://clas.asu.edu/advising-and-academic-services/science-and-society">https://clas.asu.edu/advising-and-academic-services/science-and-society</a>			
Students must complete a <b>minimum</b> of 120 credit hours to graduate. Of those hours only 64 can be from a two-year institution (community college).			
UD = Upper Division (300 or 400 level). 45 credits must be upper division.			
Students must complete MAT 117 or higher in addition to ENG 101&102.			
For more information about University General Studies (L, SB, HU, etc.), go to <a href="http://catalog.asu.edu/ug_gsr">http://catalog.asu.edu/ug_gsr</a> .			
<b>CLAS Science &amp; Society and Math Requirements*</b>			
<b>SS</b> (Upper-division):		3	
<b>SS:</b>			
MAT 117 or higher (Fulfills MA Requirement): (MAT 270)	3		
First Year Seminar (freshman students only)			

**Checksheet legend:** N = Needs IP = In Progress X = Fulfilled

Major Pre-requisites			
Course Number and Title	Hrs	UD	Fulfilled
CSE 100 Principles of Programming w/ C++ CS <i>or</i> CSE 110 Princ of Programming w/ Java CS	3		
BIO 181 General Biology ISQ*	4		
BIO 182 General Biology IISG*	4		
MAT 270 Calc with Analytic Geometry IMA	4		
MAT 271 Calc with Analytic Geometry IIMA	4		
MAT 272 Calc with Analytic Geometry IIIIMA	4		
MAT 274 Elem Differential Equations MA <i>or</i> MAT 275 Modern Differ Equations MA	3		
MAT 342 Linear Algebra <i>or</i> MAT 343 Applied Linear Algebra (preferred)		3	
* BIO 181/182 needed to take upper-division Life Sciences Courses			
Major Requirements (33 Credits)			
Introductory Course (3 Credits)			
AML 100 Intro to Applied Math for LSS MA	3		
Modeling Course (3 Credits)			
AML 253 Intro to Math Tools & Modeling LSS	3		
Life Sciences (6 Credits)			
BCH 361 Advanced Principles of Biochemistry		3	
BIO 320 Fundamentals of Ecology		3	
BIO 321 Introductory Ecology Laboratory L		2	
BIO 406 Computer Applications in Biology CS		3	
BIO 410 Techniques in Conservation Biology L		3	
BIO 411 Quant Methods Conserv. & Ecology		4	
BIO 415 Biometry CS		4	
BIO 417 Experimental Design		3	
BIO 423 Population and Community Ecology		3	
BIO 424 Dynamic Modeling Soc & Eco Systems		4	
BIO 455 Introduction to Comparative Genomics		3	
BIO 456 Bioinformatics & Molecular Evolution		3	
BIO 469 Computational Neuroscience		4	
Other Equivalent Course (Check with Advisor)			
Social Sciences (6 Credits)			
ASB 430 Social Simulaton CS		4	
<b>ASM 345 Disease and Human Evolution</b>		3	
ASM 465 Quant Analysis for Anthropology CS		3	
GCU 496 Geographic Research Methods L		3	
GIS 205 Geographic Info Technologies CS	3		
GIS 341 Intro to Cartography and Georep CS		3	
GIS 470 Statistics for Geographers CS		3	
GIS 471 Geographic Information Analysis		3	
JUS 301 Research in Justice Studies SB		3	
JUS 302 Stats Analysis for Justice Studies CS		3	
POS 301 Empirical Political Inquiry SB		3	
POS 401 Political Statistics CS		3	
POS 485 Political Economy SB		3	
SOC 331 Environmental Sociology SB & G		3	
SOC 390 Social Statistics I CS		3	
SOC 391 Research Methods L <i>or</i> SB		3	
SOC 433 Applied Demography SB		3	
<b>SOC 448 Epidemics and Society SB &amp; G</b>		3	
Other Equivalent Course (Check with Advisor)			
<b>AMLSS checksheet continues on back →</b>			

AMLSS checksheet continued			
Course Number and Title	Hrs	UD	Fulfilled
<b>Applied Mathematics (6 Credits)</b>			
MAT 300 Mathematical Structures <i>L</i>		3	
MAT 343 Applied Linear Algebra ( <b>preferred</b> )		3	
MAT 351 Math Methods Genetic Analysis <i>CS</i>		3	
MAT 355 Intro to Computational Molecular Bio		3	
MAT 362 Adv Math for Engineers and Scientists		3	
MAT 371 Advanced Calculus I		3	
MAT 451 Mathematical Modeling <i>CS</i>		3	
Other Equivalent Course (Check with Advisor)			
<b>Capstone Course (3 Credits)</b>			
AML 406 Directed Reading & Research in AMLSS		3	

AMLSS Related Area Electives continued from 1st column			
Course Number and Title	Hrs	UD	Fulfilled
<b>Applied Mathematics</b>			
MAT 300 Mathematical Structures <i>L</i>		3	
MAT 343 Applied Linear Algebra ( <b>preferred</b> )		3	
MAT 351 Math Methods Genetic Analysis <i>CS</i>		3	
MAT 355 Intro to Computational Molecular Bio		3	
MAT 362 Adv Math for Engineers and Scientists		3	
MAT 371 Advanced Calculus I		3	
MAT 451 Mathematical Modeling <i>CS</i>		3	
Other Equivalent Course (Check with Advisor)			

AMLSS Related Area Electives			
<b>Choose any 6 credits from the following lists:</b>			
<b>Life Sciences</b>			
BCH 361 Advanced Principles of Biochemistry		3	
BIO 320 Fundamentals of Ecology		3	
BIO 321 Introductory Ecology Laboratory <i>L</i>		2	
BIO 406 Computer Applications in Biology <i>CS</i>		3	
BIO 410 Techniques in Conservation Biology <i>L</i>		3	
BIO 411 Quant Methods Conserv. & Ecology		4	
BIO 415 Biometry <i>CS</i>		4	
BIO 417 Experimental Design		3	
BIO 423 Population and Community Ecology		3	
BIO 424 Dynamic Modeling Soc & Eco Systems		4	
BIO 455 Introduction to Comparative Genomics		3	
BIO 456 Bioinformatics & Molecular Evolution		3	
BIO 469 Computational Neuroscience		4	
Other Equivalent Course (Check with Advisor)			
<b>Social Sciences</b>			
ASB 430 Social Simulation <i>CS</i>		4	
<b>ASM 345 Disease and Human Evolution</b>		3	
ASM 465 Quant Analysis for Anthropology <i>CS</i>		3	
GCU 496 Geographic Research Methods <i>L</i>		3	
GIS 205 Geographic Info Technologies <i>CS</i>	3		
GIS 341 Intro to Cartography and Georep <i>CS</i>		3	
GIS 470 Statistics for Geographers <i>CS</i>		3	
GIS 471 Geographic Information Analysis		3	
JUS 301 Research in Justice Studies <i>SB</i>		3	
JUS 302 Stats Analysis for Justice Studies <i>CS</i>		3	
POS 301 Empirical Political Inquiry <i>SB</i>		3	
POS 401 Political Statistics <i>CS</i>		3	
POS 485 Political Economy <i>SB</i>		3	
SOC 331 Environmental Sociology <i>SB &amp; G</i>		3	
SOC 390 Social Statistics I <i>CS</i>		3	
SOC 391 Research Methods <i>L or SB</i>		3	
SOC 433 Applied Demography <i>SB</i>		3	
<b>SOC 448 Epidemics and Society <i>SB &amp; G</i></b>		3	
Other Equivalent Course (Check with Advisor)			
<b>Statistics &amp; Probability</b>			
STP 226 Elements of Statistics <i>CS</i>	3		
STP 231 Statistics for Life Sciences <i>CS</i>	3		
STP 326 Intermediate Probability <i>CS</i>		3	
STP 420 Introductory Applied Statistics <i>CS</i>		3	
STP 421 Probability		3	

**Mathematics Education Courses**  
 The College of Teacher Education and Leadership offers concurrent degree programs in Secondary Education that can be teamed up with this degree if that is of interest.

**Applied Math Graduation Requirements**  
 At least 18 of the semester hours must be in upper-division courses (300 or 400) level.  
 12 hours must be from the College of Liberal Arts and Sciences.  
 Classes may not count for two areas within the major.  
 A single course may only be used to satisfy **one** major requirement, **one** general studies requirement, and/or up to two awareness areas at the same time.  
 Consult with a School of Human Evolution and Social Change undergraduate advisor for courses not listed that may fulfill requirements.  
 In addition to a cumulative GPA of 2.00 or higher, all AML students must obtain a minimum grade of "C" in all upper and lower division AML courses and all courses in related fields.

Recommended Courses			
Course Number and Title	Hrs	UD	

**Notes**

To find a listing of Applied Math courses for the current semester, please visit our website: <https://shesc.asu.edu/undergraduate/scheduling-courses-curricula>