BACHELOR OF SCIENCE IN MATHEMATICS - APPLIED MATHEMATICS

Code	Title	Credit Hours
Wellness		
APPH 1040	Scientific Foundations of Health	2
or APPH 10	The Science of Physical Activity and Health	
or APPH 10	Flourishing: Strategies for Well-being and Resilience	
Core A - Essential Skills		
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
MATH 1552	Integral Calculus	4
Core B - Institutional Options		
CS 1301	Introduction to Computing	3
Core C - Humanities		
Any HUM		6
Core D - Science, Math, & Technology		
PHYS 2211	Introductory Physics I [1]	4
PHYS 2212	Introductory Physics II	4
MATH 1551	Differential Calculus	2
or MATH 15	Introduction to Differential Calculus	
MATH 1553	Introduction to Linear Algebra	2
or MATH 155	Linear Algebra	
or MATH 155	Linear Algebra with Abstract Vector Spaces	
Core E - Social Sciences		
Select one of the following:		3
HIST 2111	The United States to 1877	
HIST 2112	The United States since 1877	
INTA 1200	American Government in Comparative Perspective	
POL 1101	Government of the United States	
PUBP 3000	American Constitutional Issues	
Any SS		9
Core F - Courses Related to Major		
CS 1331	Introduction to Object Oriented Programming	3
Lab Science		4
MATH 2551	Multivariable Calculus	4
or MATH 255	Honors Multivariable Calculus	
MATH 2552	Differential Equations	4
or MATH 25	Honors Differential Equations	
MATH 2106	Foundations of Mathematical Proof	3
Bridging Courses		
MATH 3012	Applied Combinatorics	3
MATH 3235	Probability Theory	3
MATH 3406	A Second Course in Linear Algebra	3
Upper Level Foundation Courses		
MATH 4107	Introduction to Abstract Algebra I [2]	3
MATH 4317	Analysis I [2]	3
MATH 4320	Complex Analysis [2]	3
Applied Mathematics Concentration		
MATH 4640	Numerical Analysis I	3
MATH 4347	Partial Differential Equations I	3
MATH 4541	Dynamics and Bifurcations I	3
Select nine credits:		9
MATH 4348	Partial Differential Equations II	
MATH 4542	Dynamics and Bifurcations II	
MATH 4580	Linear Programming	
MATH 4581	Classical Mathematical Methods in Engineering	
MATH 4641	Numerical Analysis II	
MATH 4699	Undergraduate Research [3]	
MATH 4755	Mathematical Biology	
MATH 4777	Vector and Parallel Scientific Computation	
MATH 4782	Quantum Information and Quantum Computing	
MATH 4999	Reading or Research [3]	
CX 4140	Computational Modeling Algorithms	
CX 4240	Introduction to Computing for Data Analysis	
Mathematics Elective		3
Engineering or Science Electives		
BIOS, CHEM, EAS, PHYS, PSYC, ECON, CS, AE, BMED, CEE, CHBE, ECE, ISYE, MSE, ME, NEUR 3000-level or higher courses [4,5]		9
Free Electives		
Free Electives [6]		11
Total Credit Hours		**122**

Pass-fail only allowed for Free Electives.

Four courses from Group A list must be completed. Student may select MATH elective from Group B if four courses from Group A are complete, otherwise, the Math elective must come from Group A. If student does not complete four courses from Group A list from concentration requirements and MATH elective, then the course(s) must be completed for free electives.

Group A list: MATH 3236, MATH 4022, MATH 4032, MATH 4108, MATH 4150, MATH 4221, MATH 4261, MATH 4318, MATH 4347, MATH 4431, MATH 4432, MATH 4441, MATH 4541, MATH 4640.

Group B list: MATH 4080/MATH 4090, MATH 4222, MATH 4255, MATH 4262, MATH 4280, MATH 4348, MATH 4542, MATH 4580, MATH 4581, MATH 4641, MATH 4699, MATH 4755, MATH 4777, MATH 4782, MATH 4801, MATH 4802, CS 3510/CS 3511, CS 4510, CS 4540, CS 4641, CX 4140, CX 4240, ISYE 3133, ISYE 4133.

1 If PHYS 2231 is taken, extra hour goes toward Free Electives
2 C-minimum required
3 MATH 4699 and MATH 4999 must be an approved topic and can be used up to 6 hours (total for both instances).
4 CEE 3770,ISYE 3770, CS 4001, and CS 4002 are not allowed to be used here.
5 Two courses must be from the same school.
6 MATH 1113, MATH 3670 CEE 3770, and ISYE 3770 are restricted from free electives.