



B.S. in Mathematics
Applied Track
MATHBS-MATHAPPL.2020
48-51 credits

Effective Date: 01/2020

Name of Student:		
Student ID #:		Graduation Date
Home Country:	<input type="checkbox"/> IWORK	
Advisor:	Name	Date

The Applied Mathematics track prepares students for careers in government service, industry, areas of research, or gradated study in other fields other than pure mathematics.

Core Requirements					27 Credits	
Course #	Title	Hr.	Prerequisites	Offered	Sem.	Grade
MATH 121	Principles of Statistics	3	MATH 107 or 110	F,W,S		
MATH 212	Calculus I	5		F,W,S		
MATH 213	Calculus II	5	MATH 212	F,W		
MATH 214	Multivariable Calculus	5	MATH 213	W,S		
MATH 301	Foundations of Mathematics	3	MATH 212	F-even, W-even, S-odd		
MATH 334	Differential Equations	3	MATH 214	W-even, S-odd		
MATH 343	Elementary Linear Algebra	3	MATH 212	F-odd, W-odd, S-even		
Applied Cluster (Each student will take a set of courses from one of the following clusters)					12-15 Credits	
Physics Cluster (mrs 1559)						
PHYS 121/L	Introduction to Newtonian Mechanics/Lab	4	MATH 212 and either High School Trigonometry or MATH 111, and Passing a Comprehensive Mathematics Exam during 1 st week of semester. Sample Math exam available in Canvas.	F,W		
PHYS 220/L	Introduction to Electricity and Magnetism/Lab	4	PHYS 121/L w/C- or better, (Completion of MATH 213 is recommended)	W-even		
PHYS 221/L	Introduction to Waves, Optics, and Modern Physics/Lab	4	PHYS 121/L w/C- or better, (Completion of MATH 213 is recommended)	W-odd		
Statistics Cluster (mrs 1560)						
MATH 421	Mathematical Statistics	3	MATH 214	F		
PSYC 205	Applied Social Statistics	3	PSYC 111 and MATH 107 or MATH 110 or equivalent	F,W		
PSYC 405	Multivariate Statistics	3	PSYC 205 or Permission of Instructor	Variable		
Course approved by Mathematics Department		3	Based on the selected course, all prerequisites in catalog must be met	Variable		
Biology Cluster (mrs 1561)						
MATH 421	Mathematical Statistics	3	MATH 214	F		
BIOL 112	Biology I-Cell and Molecular Biology	3		F,W,S		
*BIOL 340	Biostatistics	3	No prereqs for MATH majors. BIOL 112/L, CHEM 105/L for BIOL/BIOCHEM majors	S		
*BIOL 376	Genetics	3	No prereqs for MATH majors. BIOL 112/L, CHEM 105/L for BIOL/BIOCHEM majors	F,S		
Computer Science Cluster (mrs 1562)						
(MATH 311**)	Introduction to Numerical Methods	3	MATH 213	Variable		
CIS 202	Object-Oriented Programming I	3	CIS 101	F,W,S		
CS 203	Object-Oriented Programming II	3	CIS 202	F		
*CS 301	Algorithms and Complexity	3	CIS 101, MATH 301 for MATH majors; CS 203, CIS 206 for CS/IS/IT Majors	W		
*CS 320	Introduction to Computational Theory	3	CIS 202, MATH 301 for MATH majors; CS 203, CIS 206 for CS/IS/IT Majors	W		
Pre-Engineering Cluster – Choose 2 Physics courses plus the others (mrs 1558)						
PHYS 121	Introduction to Newtonian Mechanics/Lab	3	MATH 212 and either High School Trigonometry or MATH 111, and Passing a Comprehensive Mathematics Exam during 1 st week of semester. Sample Math exam available in Canvas.	F,W		
PHYS 220	Introduction to Electricity and Magnetism/Lab	3	PHYS 121/L w/C- or better, (Completion of MATH 213 is recommended)	W-even		
PHYS 221	Introduction to Waves, Optics, and Modern Physics/Lab	3	PHYS 121/L w/C- or better, (Completion of MATH 213 is recommended)	W-odd		
MATH 311*	Introduction to Numerical Analysis	3	MATH 213	Variable		
CIS 202	Object-Oriented Programming I	3	CIS 101	F,W,S		
CS 203	Object-Oriented Programming II	3	CIS 202	F		
Math Cluster (mrs 1563)						
MATH 111	Trigonometry and Analytic Geometry	3	Recommended MATH 110 or proficiency	F,W,S		
MATH 302	Foundations of Geometry	3	MATH 212	F-odd		
MATH 308	Mathematics Using Technologies	3	MATH 121, 212	S-even		
MATH 377	Secondary Mathematics Teaching Methods	2	MATH 212	F-even		
MATH 490R	Mathematics Seminar	2		S		
Variable Cluster						
4 classes	Subjects in which math is applied as approved by the math department chair	12	Variable	Variable		



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Advanced Math Electives (Choose 9 more credits from the following) Minimum 9 Credits
 (Other courses may be approved by Math Program Lead)

MATH 311	Introduction to Numerical Methods	3	MATH 213	Variable		
MATH 332	Introduction to Complex Variables	3	MATH 214	W-odd, S-even		
MATH 421	Mathematical Statistics	3	MATH 214	F		
MATH 441	Introduction to Analysis I	3	MATH 214, 301	F		
MATH 442	Introduction to Analysis II	3	MATH 441	W		
MATH 471	Abstract Algebra I	3	MATH 301	F		
MATH 472	Abstract Algebra II	3	MATH 471	W		
MATH 490R**	Mathematics Seminar	2		S		
*MATH 311 is required for the Advanced Math Elective for the CS Cluster and the Pre-Engineering Cluster						
**MATH 490R can be used a maximum of 4 credits as an Advanced Math Elective						
No course can be applied to both the Applied Cluster and the Advanced Math Electives						

*Please see Academic Advisor to register for this class (BIOL 340, BIOL 376, CS 301, CS 320)

***Must have a minimum of 2.0 cumulative GPA in these courses for graduation.

No more than one "D" grade will be allowed in any 300/400 level courses.