

## MATHEMATICS MAJOR

### Applied Math Emphasis (BA/BS) (38 units)

Effective beginning Fall 2019  
An approved minor is required for this major

For students who wish to prepare for a career in industry, business, or applied scientific research offering a solid foundation in the mathematics required for solving complex real-world problems. For additional information, please visit [www.siam.org](http://www.siam.org), [www.ams.org](http://www.ams.org), and [www.maa.org](http://www.maa.org).

COURSES			OFFERED*	PRE-REQUISITE
<i>Major Requirements:</i>				
MATH 200	1 unit	Mathematics: Form and Function	E	CoReq: Math 253
MATH 253	5 units	Calculus and Analytic Geometry I (GM)	E	Math 152 or (Math 150 and 151) each with C or better
MATH 254	4 units	Calculus and Analytic Geometry II	E	Math 253 or (Math 250 and 151) or (Math 250 and 152) each with C or better
MATH 255	4 units	Calculus and Analytic Geometry III	E	Math 254 with C or better
MATH 280	3 units	Discrete Mathematics	E	Math 250 with B or better or Math 253 with C or better
MATH 301	3 units	Introduction to Analysis	E	Math 254 with C or better and Math 280
MATH 355	3 units	Matrices and Linear Algebra	E	Math 250 with B or better or Math 253 with C or better
MATH 361	3 units	Differential Equations	F	Math 254 with C or better
MATH 381	3 units	Mathematical Modeling and Simulation	S	Math 254 with C or better and Math 355
MATH 459	3 units	Partial Differential Equations	SEY	Math 361
<i>Select two courses from the following list:</i>				
MATH 458	3 units	Applied Mathematical Analysis	SOY	Math 361
MATH 463	3 units	Complex Variables	FOY	Math 255
MATH 471	3 units	Numerical Analysis	FEY	Math 355 and one of (CS170, CS171, CS172, CS174, CS220, CS222, CS347)
MATH 474	3 units	Dynamical Systems & Chaos	SOY	Math 361 with C or better
<i>Unique Computer Science Requirement (3 units) – select one of the following:</i>				
COMPSCI 170	3 units	Introduction to Python Programming		
COMPSCI 171	3 units	Introduction to Visual Basic Programming		
COMPSCI 172	3 units	Introduction to JAVA (GM)		
COMPSCI 174	3 units	Introduction to C++ (GM)		
COMPSCI 220	3 units	Intermediate JAVA		
COMPSCI 222	3 units	Intermediate C++		
COMPSCI 347	3 units	Scientific Computing		
<i>Unique Writing Requirement (3 units) – select one of the following:</i>				
ENG 370	3 units	Advanced Composition		
ENG 372	3 units	Technical and Scientific Writing		

**MILESTONES**  
Math Exit Interview  
GPA Requirement of 2.0

\* E = Every Semester  
S = Every Spring  
F = Every Fall  
SOY = Every Odd Spring  
SEY = Every Even Spring  
FOY = Every Odd Fall  
FEY = Every Even Fall