MATHEMATICS, B.A.

Program Learning Outcomes

Graduates of the program will be able to:

- demonstrate facility with analytical and algebraic concepts.
- write proofs.
- apply their mathematical knowledge and critical thinking to solve problems.
- use technology to solve problems.
- speak about their work with precision, clarity, and organization.
- write about their work with precision, clarity, and organization.
- identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand.
- collaborate effectively in teams.
- understand and create arguments supported by quantitative evidence.
- understand the professional, ethical, and social issues and responsibilities with the implementation and use of mathematical models and technology.

Code	Title	Units
Lower-Division Requirements		
CSC 1043 and CSC 1043L	Introduction to Computer Programming and Introduction to Computer Programming Lab	3
CSC 1054 and CSC 1054L	Objects and Elementary Data Structures and Objects and Elementary Data Structures Lab	4
MTH 1064 and MTH 1064L	Calculus I (GE) and Calculus I Lab (GE)	4
MTH 1074 and MTH 1074L	Calculus II and Calculus II Lab	4
MTH 2033	Linear Algebra	3
MTH 2074	Calculus III	4
Upper-Division Requirements		
MTH 3012	Number Theory with Proofs	2
MTH 3052	History of Mathematics	2
MTH 3083	Mathematical Probability and Statistics	3
MTH 4081	Senior Seminar in Mathematics	1
MTH 4024	Real Analysis	4
or MTH 4044	Abstract Algebra	
Choose one (1) course from the following:		3
MTH 3033	Differential Equations	
MTH 3043	Discrete Mathematics	
MTH 3073	Mathematical Modeling	
MTH 4013	Complex Analysis	
Choose one (1) sequence from the following:		3
HON 4098 and HON 4099	Honors Project I and Honors Project II	
MTH 4102 and MTH 4121	Independent Research in Mathematics I and Independent Research in Mathematics II	
MTH 4133	Service Learning in Mathematics	
Elective Courses		
Choose eight (8) additional units from the following: [1]		8
CSC 3003	Python and UNIX	
CSC 3011	Machine Learning and Multivariate Modeling in R	
CSC 3021	Computational Tools	
CSC 3031	Data Visualization and Communication with R	
HON 4098	Honors Project I	
HON 4099	Honors Project II	
MTH 3033	Differential Equations	
MTH 3043	Discrete Mathematics	
MTH 3073	Mathematical Modeling	
MTH 4002	Topics in Geometry	
MTH 4013	Complex Analysis	
MTH 4024	Real Analysis	
MTH 4044	Abstract Algebra	
MTH 4053	Advanced Applied Statistics	
MTH 4071	History of Mathematics Study Tour	
MTH 4072	Internship in Data Science	
MTH 4091	Independent Study in Mathematics	
MTH 4092	Special Topics in Mathematics	
MTH 4102	Independent Research in Mathematics I	
MTH 4121	Independent Research in Mathematics II	
MTH 4133	Service Learning in Mathematics	
MTH 4162	Project for Data Analytics Minors I	
MTH 4171	Project for Data Analytics Minors II	
Total Units		**48**

[1] An elective course may not count as both an upper-division requirement and a required “additional elective.”

Total Non-GE Units for Degree: 44