MATH B.S. - OPTION I: Applied Mathematics Option

(for majors from the 2022-2023 catalogue year)

Student_____ CIN_____ADVISOR_____

GE Requirements (39 units)	Term	Grade	Course Type
Block A: English Language Comm. & Critical Thinking (9)			
A1 Oral Communication Course =			
A2 Written Communication Course =			
A3 Critical Thinking & Composition Course =			
American Institutions (6)			
US History Course =			
US Constitution Course =			
Block B: Natural Sciences (0)			
Fulfilled by major requirements			
Block C: Arts and Humanities (6)			
C1 Arts Course =			
C2 Humanities Course =			
Block D: Social Sciences (3)			
D Course =			
Block E: Lifelong Understanding & Self Development (3)			
E Course =			
Block F: Ethnic Studies (3)			
F Course =			
Upper Division GE from 3 different sub-blocks (9)			
Sub block B Course =			
Sub block C Course =			
Sub block D Course =			

VARIOUS GE REQUIREMENTS

1. One civic learning course (denoted by **cl**) at the upper division GE level.
2. One race/ethnicity course (denoted by **re**) AND one diversity course (denoted by **d**) or another **re** course.
3. One writing intensive course (denoted by **wi**).

The above requirements must be fulfilled in GE blocks. Choose accordingly. An IHE course is required of all first-time freshmen. Please see e-catalog for complete GE requirement rules and policies.

****Upper Division Electives**

The approved list of upper division elective courses is on the next page.

Graduation Requirements

A minimum **40** units of upper division courses and **120** total units are required for graduation. For an extensive list of other graduation requirements, check "academic requirement" in your GET account.

Major Requirement (81 Units)	Term	Grade
Lower Division Required Courses (33)		
CS 2010 (3) or MATH 2170 (3)		
MATH 2110 Calculus I (4)		
MATH 2120 Calculus II (4)		
MATH 2130 Calculus III (3)		
MATH 2150 Differential Equations (3)		
MATH 2450 Foundations of Mathematics I (3)		
MATH 2550 Introduction to Linear Algebra (3)		
PHYS 2100 General Physics I: Mechanics (5)		
BIOL 1100 Cellular Basis of Life (5)		
Upper Division Required Courses (7)		
MATH 3450 Foundations of Mathematics II (4)		
MATH 4650 Analysis I (3)		
Option Specific Required Courses (28-30)		
MATH 4550 Modern Algebra I (3)		
MATH 4570 Linear Algebra (3)		
MATH 4680 Intro. to Complex Analysis (3)		
MATH 4740 Theory of Probability (3)		
MATH 4900 Senior Seminar in Mathematics (4) *WI course*		
Select one from each of the following groups (12-14)		
Group I: MATH 4010 Ordinary Differential Equations (3) MATH 4030 Partial Differential Equations (3)		
Group II: MATH 4100 Vector Analysis (3) MATH 4670 Multivariate Analysis (3)		
Group III: MATH 4700 Numerical Analysis I (3) MATH 4720 Linear Optimization (3)		
***Group IV:** The list of approved courses for this group is on the next page.		
University Free Electives (2-4) (If you took a 5-unit course in Group IV above, choose 2 units of any courses. If you took a 3-unit course, choose 4 units.)		
Course(s) =		
****Upper Division Electives (9)** At least 6 units must be MATH		
Course1 =		
Course2 =		
Course3 =		

***Group IV Courses**

- BIOL 1200 – Diversity of Life (5)
- BIOL 4800 – Modeling Biological Systems (3) **or** MATH 4800 – Topics in Mathematical Modeling (3)
- BINF 4000/CHEM 4860 – Bioinformatics and Computational Biology (3)
- CHEM 1100 – General Chemistry I (5)
- CS 2012 – Introduction to Programming II (3)
- ECON 2090 – Applied Business and Economic Statistics I (3)
- ECON 4010 – Mathematical Economics (3)
- PHYS 2200 – General Physics II: Electromagnetism and Circuits (5)

****Upper Division Electives**

- MATH 3200 – Selected Topics in History of Mathematics (3)
- MATH 4010 – Ordinary Differential Equations (3)
- MATH 4021 – Advanced Math I for Engineers and Physicists (3)
- MATH 4030 – Partial Differential Equations (3)
- MATH 4100 – Vector Analysis (3)
- MATH 4200 – Mathematical Logic (3)
- MATH 4300 – Modern Geometry (3)
- MATH 4460 – Theory of Numbers (3)
- MATH 4540 – Selected Topics in Advanced Math (3)
- MATH 4560 – Modern Algebra II (3)
- MATH 4660 – Analysis II (3)
- MATH 4670 – Multivariate Analysis (3)
- MATH 4690 – Introduction to Topology (3)
- MATH 4700 – Numerical Analysis I (3)
- MATH 4710 – Numerical Analysis II (3)
- MATH 4720 – Linear Optimization (3)
- MATH 4750 – Introduction to Mathematical Statistics I (3)
- MATH 4840 – Graph Theory (3)
- MATH 4800 – Topics in Mathematical Modeling (3) **or** BIOL 4800 – Modeling Biological Systems (3)

- BINF 4000/CHEM 4860 – Bioinformatics and Computational Biology (3)
- ECON 4010 – Mathematical Economics (3)
- PHYS 4101 – Mathematical Methods of Physics (3)
- PHYS 4102 – Mathematical Methods of Physics (3)