

**A.S. MATHEMATICS**

Department: Mathematics and Computer Sciences

Total credits: 60

**COLLEGE REQUIREMENTS****CREDITS**

- Successful completion of CUNY Tests in Reading and Writing and the COMPASS Math Skills Test with passing examination scores or developmental courses may be required.
- One (1) Writing Intensive course in any discipline from any category below is required. Participation in a Learning Community that includes ENG 1200 or 2400 also satisfies this requirement.
- Two (2) Civic Engagement experiences—satisfied by CE-Certified or CE-Component courses or approved outside activity. Refer to the *Degree Requirements* section of this catalog.

**CUNY CORE**

Approved Required and Flexible Core courses are listed in the General Education: CUNY Pathways section of this catalog. **When Required or Flexible Core courses are specified for a category, they are required for the major.**

**REQUIRED CORE:**

ENG 1200	3
ENG 2400	3
Mathematical and Quantitative Reasoning: MAT 1500√ or MAT 1600√ or MAT/BIO 9100√ or MAT/BA 2200√	4
Life and Physical Sciences	3

**FLEXIBLE CORE ◊**

20

One course from each group, A -E, plus an addition course from Group E. **No more than two courses in the same discipline.**

A. World Cultures &amp; Global Issues

B. U.S. Experience in Its Diversity

C. Creative Expression

D. Individual &amp; Society

E. Scientific World: : MAT 1500√ or MAT 1600√ or MAT/BIO 9100√ or MAT/BA 2200√ or CS 1200√ or CS 13A0√ ( if not taken for Required Core)

Plus another course selected from Group E list above (If not taken for Required or Flexible Core)**DEGREE REQUIREMENTS §**

Calculus I and II and III (MAT 1500√ and MAT 1600√ and MAT 2100√)	12
Differential Equations (MAT 5500√)	3
Linear Algebra (MAT 5600√)	3
Biostatistics (MAT/BIO 9100√) or Business Statistics (MAT/BA 2200√)	4
Introduction to Computing (CS 1200√)	4
Discrete Structures (CS 3500√)	4
Choose two courses from: Advanced Programming Techniques (CS 13A0√) or Computers and Assembly Language Programming (CS 1400√) or Finite Mathematics (MAT 1100√), or Introduction to Set Theory, (MAT 3200√)	8
Critical Issues in Personal Health (HE 1400)	1

**ELECTIVES:** 0 electives sufficient to meet the required total of 60

√ Refer to course descriptions for pre-requisites, co-requisites and/or pre/co-requisites

◇ This program has a waiver to require particular courses in the Common Core, otherwise more than the minimum credits for the degree may be necessary.

§ Consultation with the Department Advisor is required.

### **STUDENT LEARNING OBJECTIVES**

Demonstrate the ability to use symbolic graphical and numerical representation of mathematical ideas

CS 1200 MAT 1500 MAT 1600 MAT 2100 MAT 2200 CS 3500 MAT 5500 MAT 5600 MAT 9100

Demonstrate conceptual ability for problem solving using arithmetic, algebraic, statistical and geometric models

CS 1200 MAT 1500 MAT 1600 MAT 2100 MAT 2200 CS 3500 MAT 5500 MAT 5600 MAT 9100

Demonstrate quantitative ability for problem solving using arithmetic, algebraic, statistical and geometric models

MAT 1500 MAT 1600 MAT 2100 MAT 2200 CS 3500 MAT 5500 MAT 5600 MAT 9100

Demonstrate the ability to communicate mathematical ideas clearly

MAT 1500 MAT 1600 MAT 2100 MAT 2200 CS 3500 MAT 5500 MAT 5600 MAT 9100

Demonstrate the ability to estimate and check answers to mathematical problems and determining reasonableness or results

MAT 1500 MAT 1600 MAT 2100 MAT 2200 CS 3500 MAT 5500 MAT 5600 MAT 9100

Demonstrate a mastery of skills of differentiation and integration for entry into a third year baccalaureate program

MAT 1500 MAT 1600 MAT 2100

Demonstrate a mastery of skills for manipulating matrices and determinants

MAT 1500 MAT 1600 MAT 2100 CS 3500