

Mathematics, A.S.

HEGIS: 5617.00

PROGRAM CODE: 01041

PROGRAM DIRECTOR: Dr. Rina Yarmish

DEPARTMENT: MATHEMATICS AND COMPUTER SCIENCE

The Mathematics AS degree is designed to provide students with a solid foundation in the fundamentals of mathematics in preparation for transfer to baccalaureate programs. Courses provide extensive background in assessing formal logical statements for validity, providing proofs by direct and indirect methods, use of differentiation and integration in problem solving, testing of infinite series for convergence or divergence, and support communication of mathematical ideas in writing.

The curriculum presented here applies to students who started the major in Fall 2026 or Spring 2027. If you enrolled as a matriculant prior to that, please see the *College Catalog* for the year you started the major as a matriculant for the curriculum requirements that apply to you.

Consultation with the Program Advisor is required.

Degree Maps:

Degree Map for Mathematics, A.S. - MAT 9010 or MAT 9B0 or MAT 900 Placement (**see below**)

Degree Map for Mathematics, A.S. - MAT 1500 Placement - Calculus I (**see below**)

Your Degree Map contains the suggested term-by-term course sequence for your academic path towards graduation.

To ensure successful and timely completion of your degree, it is recommended that you meet with your academic advisor to discuss your unique map.

Please note some courses *may* only be offered once an academic year.

Program Learning Outcomes

Upon successful completion of the Mathematics degree program requirements, graduates will:

1. Solve problems with derivatives and integrals
2. Solve problems with sequences and series
3. Solve problems with vectors and matrices
4. Answer questions with descriptive and inferential statistics
5. Read, write, and analyze basic computational algorithms
6. Read and write mathematical proofs

College Requirements:

English and Math proficient as determined by the CUNY Proficiency Index, unless otherwise exempt, or successful completion of any required developmental course(s).

Civic Engagement Experiences:

One (1) Civic Engagement experience satisfied by Civic Engagement Certified or Civic Engagement Component course or approved outside activity.

Writing Intensive Requirement:

One (1) Writing Intensive Course in any discipline is required.

Required Core (4 Courses, 12 Credits):

When Required Core Courses are specified for a category, they are required for the major

- ENG 1200 - Composition I 3 Credit(s)
 - ENG 2400 - Composition II 3 Credit(s)
 - **Mathematical & Quantitative Reasoning Course***
 - MAT 9010 - Introduction to Mathematics with College Algebra 3 Credit(s) ^ **or**
 - MAT 9B0 - College Algebra for STEM Majors 3 Credit(s) ^ **or**
 - MAT 900 - College Algebra 3 Credit(s) ^ **or**
 - MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics 3 Credit(s) **or**
 - MAT 1500 - Calculus I 3 Credit(s)
 - **Life & Physical Sciences Course 3 Credit(s)**
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Flexible Core (6 Courses, 18 Credits):

When Flexible Core Courses are specified for a category, they are required for the major

One course from each Group A to D (Group E is satisfied by the courses show). **No more than two courses can be selected from the same discipline**

A. World Cultures and Global Issues Designated Course

B. U.S. Experience in its Diversity Designated Course

C. Creative Expression Designated Course

D. Individual and Society Designated Course

- *Recommended:* CIS 100 - Digital Society 3 Credit(s)

E. Scientific World Designated Course*

- MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics 3 Credit(s) **^ or**
 - MAT 1500 - Calculus I 3 Credit(s) **or**
 - MAT 1600 - Calculus II 3 Credit(s)
 - **AND**
 - CS 1200 - Introduction to Computing 3 Credit(s)
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Major Requirements (7 to 9 Courses, 24 to 29 Credits):

- CS 3500 - Discrete Structures 3 Credit(s)
- MAT 2100 - Calculus III 3 Credit(s)
- MAT 5500 - Differential Equations 3 Credit(s)
- MAT 5600 - Linear Algebra 3 Credit(s)
- **AND**
- MAT 2200 - Business Statistics 4 Credit(s) **or**
 - BA 2200 - Business Statistics 4 Credit(s)
- **OR**
- MAT 9100 - Biostatistics 4 Credit(s) **or**
 - BIO 9100 - Biostatistics 4 Credit(s)

If not taken for Required Core or Flexible Core

- MAT 1500 - Calculus I 3 Credit(s)
- MAT 1600 - Calculus II 3 Credit(s)

Select **ONLY ONE** (1) of the two options below based on initial Math Placement**

Option 1: (2 Courses, 7 Credits)

If student's initial Mathematics Placement is **below** MAT 1500:

- MAT 1000 - College Trigonometry 3 Credit(s)
- **AND**

Select **one (1)** course from the following:

- CS 13A0 - Advanced Programming Techniques 4 Credit(s)
- MAT 1100 - Finite Mathematics 4 Credit(s)
- MAT 3200 - Introduction to Set Theory 4 Credit(s)
- MAT 7100 - Applications of Linear Algebra and Vector Analysis 4 Credit(s)

Option 2: (2 Courses, 8 Credits)

If student's initial Mathematics Placement is MAT 1500:

Select **two (2)** from the following:

- CS 13A0 - Advanced Programming Techniques 4 Credit(s)
 - MAT 1100 - Finite Mathematics 4 Credit(s)
 - MAT 3200 - Introduction to Set Theory 4 Credit(s)
 - MAT 7100 - Applications of Linear Algebra and Vector Analysis 4 Credit(s)
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Electives:

1 - 6 credits sufficient to meet required total of 60 credits

Notes:

^ Depending on Math placement, students may be required to complete MAT 9010 **or** MAT 9B0 **or** MAT 900 **and/or** MAT 1000 **and** MAT 1400

** Consultation with the Mathematics Department is **HIGHLY** recommended to ensure that the student selects the correct option.

* 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.

Total Credits: 60

Degree InformationCatalog Year: 2026 - 2027Plan: Mathematics ASSub Plan: N/ARequired Credits: 60General RequirementsReq GPA: 2.0Req Residential Credits: 30Req Pathways Credits: 30Req Civic Engagement: 1Req Writing Intensive: 1

1

Session A

COURSE	CRS
ENG 1200	3
MAT 9010 ^{or} MAT 9B0 ^{or} MAT 900 ¹ (NEED MIN. GRADE C)	3
Choose 1: Flexible Core Individual & Society (CIS 100 Recommended)	3
Choose 1: Flexible Core U.S. Experiences in Its Diversity	3

Session B

COURSE	CRS
MAT 1000 ¹	3
MAT 1400 ¹ (NEED MIN. GRADE C)	3

SEMESTER CRS: 18

2

Session A

COURSE	CRS
ENG 2400	3
MAT 1500 ¹ (NEED MIN. GRADE C)	3
CS 1200 ² (NEED MIN. GRADE C+)	3
Choose 1: Flexible Core Creative Expression	3

Session B

COURSE	CRS
LIFE & PHYSICAL SCIENCES	3

SEMESTER CRS: 15

3

Session A

COURSE	CRS
MAT 1600 ² (NEED MIN. GRADE C)	3
MAT 5600 ²	3
CS 3500 ²	3
Elective	1

Session B

COURSE	CRS
MAT/BIO 9100 ⁴ ^{or} MAT/BA 2200 ¹	4

SEMESTER CRS: 14

4

Session A

COURSE	CRS
MAT 2100 ²	3
MAT 5500 ²	3
Select One: CS 13A0 ² , MAT 1100 ⁸ , MAT 3200 ⁷ , ^{or} MAT 7100 ⁸	4
Choose 1: Flexible Core World Cultures & Global Issues	3

Session B

COURSE	CRS
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SEMESTER CRS: 13

NOTE: The term-by-term course sequence takes into account necessary Prerequisites, Corequisites, and Pre-/Co-requisites**NOTE: Select ONE (1) WRITING INTENSIVE course & ONE (1) CIVIC ENGAGEMENT course. Some courses meet BOTH requirements, see CUNYfirst to determine course status**Important Notes:

- Many courses have a grade based prerequisite. It is crucial to review the College Catalog for all course prerequisite.
- Consultation with the Department of Mathematics and Computer Science is HIGHLY recommended to ensure that the student selects the correct courses.

¹ Course is usually offered every semester² Course is usually offered every Fall and Spring semesters³ Course is usually offered every Fall semester (occasionally offered also in Spring semester)⁴ Course is usually offered every Spring, Winter, and Summer semester⁵ Course is usually offered every Fall, Spring, and Winter semesters⁶ Course is occasionally offered in Fall semester⁷ Course is usually offered every Fall semester⁸ Course is occasionally offered

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1

Session A

COURSE	CRS
ENG 1200	3
MAT 1500 ¹ (NEED MIN. GRADE C)	3
Choose 1: Flexible Core Individual & Society (CIS 100 Recommended)	3
CS 1200 ² (NEED MIN. GRADE C+)	3

Session B

COURSE	CRS
Choose 1: Flexible Core Creative Expression	3

SEMESTER CRS: 15

2

Session A

COURSE	CRS
ENG 2400	3
MAT 1600 ² (NEED MIN. GRADE C)	3
MAT 5600 ²	3
Choose 1: Flexible Core World Cultures & Global Issues	3

Session B

COURSE	CRS
LIFE & PHYSICAL SCIENCES	3

SEMESTER CRS: 15

3

Session A

COURSE	CRS
MAT 2100 ²	3
Select One: CS 13A0 ² , MAT 1100 ⁸ , MAT 3200 ⁷ , or MAT 7100 ⁸	4
CS 3500 ²	3
Elective	3

Session B

COURSE	CRS
MAT/BIO 9100 ⁴ or MAT/BA 2200 ¹	4

SEMESTER CRS: 17

4

Session A

COURSE	CRS
MAT 5500 ²	3
Choose 1: Flexible Core U.S. Experiences in Its Diversity	3
Select One: CS 13A0 ² , MAT 1100 ⁸ , MAT 3200 ⁷ , or MAT 7100 ⁸	4
Elective	3

Session B

COURSE	CRS
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SEMESTER CRS: 13

NOTE: The term-by-term course sequence takes into account necessary Prerequisites, Corequisites, and Pre-/Co-requisites

NOTE: Select ONE (1) WRITING INTENSIVE course & ONE (1) CIVIC ENGAGEMENT course. Some courses meet BOTH requirements, see CUNYfirst to determine course status

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