ADVANCE
A NOVA | MASON PARTNERSHIP

A.S. Science: Mathematics Specialization / B.S. Mathematics Pathway
2024-2025

A.S. Science: Mathematics Specialization

ADVANCE Program Milestones

ADVANCE Milestone Requirements: All ADVANCE students must adhere to the following requirements. For Milestones #1-#3, failure to meet these milestones will prevent a student from matriculating to Mason and/or result in termination from ADVANCE. For Milestones #4-#7, failure to meet these milestones may delay matriculation to Mason.

1. Students must complete their NOVA degree within 4 years of being admitted into ADVANCE. Students are highly encouraged to be continuously enrolled at NOVA/Mason to support progress towards degree completion.

2. Students must maintain a minimum 2.5 cumulative GPA at NOVA and must have a minimum 2.5 GPA upon matriculation to Mason.

3. Students who wish to enroll at Mason for the fall semester must apply for NOVA spring graduation by March 1 or summer graduation by June 1. Students who wish to enroll at Mason for the spring semester must apply for NOVA fall graduation by October 1.

4. Students must begin developmental coursework no later than the first semester in ADVANCE at NOVA.

5. Students must take first college-level MTH course and ENG 111 in the semester immediately following the completion of any MDE or EDE courses (excluding summer).

6. In the first 30 credits, students must complete ENG 111 and ENG 112 with a C or better.

7. Students must complete a Mason Core Quantitative Reasoning course equivalent with a C or better no later than one semester before NOVA graduation. Refer to your pathway to select the appropriate MTH course(s).

	NOVA DEGREE REQUIREMENT	Credits	Courses	MASON TRANSFER EQUIVALENT	MASON CORE/DEGREE EQUIVALENT
1	**SDV Course**	1	SDV 100 College Success Skills **OR** SDV 101 Orientation to XXX	UNIV 100	General Elective
2	**ENG 111**	3	ENG 111 College Composition I[1]	ENGH XXX	General Elective
3	**HIS Course**	3	HIS 101 Western Civilizations Pre-1600 CE **OR** HIS 102 Western Civilizations Post-1600 CE **OR** HIS 112 World Civilizations Post-1500 CE ***(recommended)***	HIST 101T HIST 102T HIST 125	Global History
4	**MTH 167**	5	MTH 167 PreCalculus with Trigonometry[2]	MATH 105	General Elective
5	**CSC 221**	3	CSC 221 Introduction to Problem Solving and Programming	CS XXX	General Elective
6	**Humanities/Fine Arts #1**	3	ART 100 Art Appreciation **OR** ART 101 History of Art: Prehistoric to Gothic **OR** ART 102 History of Art: Renaissance to Modern **OR** CST 130 Introduction to Theatre **OR** CST 151 Film Appreciation I **OR** MUS 121 Music in Society	ARTH 101 ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
7	**ENG 112**	3	ENG 112 College Composition II[1]	ENGH 101	Written Comm
8	**MTH 263**	4	MTH 263 Calculus I	MATH 113	Major & Quantitative
9	**Social/Behavioral Sciences #1**	3	ECO 201 Principles of Macroeconomics **OR** ECO 202 Principles of Microeconomics ***(required for Actuarial Concentration)*** **OR** GEO 210 People and the Land: An Introduction to Cultural Geography **OR** HIS 121 United States History to 1877 **OR** HIS 122 United States History Since 1865 **OR** PLS 135 U.S. Government and Politics **OR** PSY 200 Principles of Psychology **OR** PSY 230 Developmental Psychology **OR** SOC 200 Introduction to Sociology **OR** SOC 211 Cultural Anthropology	ECON 104 ECON 103 GGS 103 HIST 121 HIST 122 GOVT 103 PSYC 100 PSYC 211 SOCI 101 ANTH 114	Soc/Behav
10	**CST Course**	3	CST 100 Principles of Public Speaking **OR** CST 110 Introduction to Human Communication	COMM 100 COMM 101	Oral Comm

11	**Humanities/Fine Arts #2**	3	ENG 225 Reading Literature: Culture and Ideas **OR** ENG 245 British Literature **OR** ENG 246 American Literature **OR** ENG 255 World Literature **OR** ENG 258 African American Literature **OR** ENG 275 Women in Literature **OR** Any 200-Level ENG Literature course[3]	ENGH 202 or FRLN L330 (ENG 255 only)	Literature
12	**MTH 264**	4	MTH 264 Calculus II	MATH 114	Major
13	**Math Elective #1**	3	MTH 288 Discrete Mathematics	MATH 125	Major
14	**Social/Behavioral Sciences #2**	3	GEO 220 World Regional Geography **OR** PLS 140 Introduction to Comparative Politics **OR** PLS 241 Introduction to International Relations	GGS 101 GOVT 133 GOVT 132	General Elective
15	**Science Course #1** ***(two-course sequence required)***	4	CHM 111 General Chemistry I[4] **OR** GOL 105 Physical Geology[4] **OR** PHY 241 University Physics I[4]	CHEM 211-213 GEOL 101-103 PHYS 160-161	Major & Nat Science
16	**MTH 265**	4	MTH 265 Calculus III	MATH 213	Major
17	**Math Elective #2**	3	MTH 267 Differential Equations	MATH 214	Major
18	**Science Course #2** ***(two-course sequence required)***	4	CHM 112 General Chemistry II[4] **OR** GOL 106 Historical Geology[4] **OR** PHY 242 University Physics II[4]	CHEM 212-214 GEOL 102-104 PHYS 260-261	Major & Nat Science
19	**General Education Elective** ***(This elective is not needed if selections for all other requirements total 60 credits or more)***	3	MTH 245 Statistics I ***(recommended for Mathematical Statistics concentration)*** **OR** CST 229 Intercultural Communication **OR** ECO 202 Principles of Microeconomics **OR** HUM 256 Comparative Mythology **OR** HUM 259 The Greek and Roman Tradition **OR** PHI 111 Logic **OR** PSY 200 Principles of Psychology **OR** REL 100 Introduction to the Study of Religion **OR** REL 230 Religions of the World **OR** SOC 200 Introduction to Sociology	STAT 250 COMM L305 ECON 103 ENGH 202 CLAS 250 PHIL 173 PSYC 100 RELI 100 RELI --- SOCI 101	General Elective
A. S. SCIENCE (MATH) DEGREE TOTAL		**62**			

For academic policies and procedures, please see NOVA catalog - http://www.nvcc.edu/catalog/index.html

B.S. Mathematics

Concentrations: Actuarial Mathematics; Applied Mathematics; Data Science; Individualized Concentration; Mathematical Statistics; Pure Mathematics;

	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
20	**Computer Programming**	4	CS 112 Introduction to Computer Programming	Major & Info Tech
21	**Concentration Course**	3	Concentration Course[5]	Major
22	**Mathematics Core or General Electives**	3	MATH 203 Linear Algebra ***(if not completed at NOVA)*** **OR** General Electives (See: Advisor)	General Elective
23	**Mathematics Core**	3	MATH 300 Introduction to Advanced Mathematics	Writing Intensive
24	**Gen Ed: Written Communication (Upper-level)**	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
25	**Concentration Course**	3	Concentration Course[5]	Major
26	**Concentration Course**	3	Concentration Course[5]	Major
27	**Concentration Course**	3	Concentration Course[5]	Major
28	**Mathematics Core**	3	MATH 322 Advanced Linear Algebra	Major
29	**General Electives**	3	General Electives (Upper-level See: Advisor)	General Elective
30	**Concentration Course**	3	Concentration Course[5]	Major
31	**Concentration Course**	3	Concentration Course[5]	Major
32	**Concentration Course**	3	Concentration Course[5]	Major

33	**Concentration Course**	3	Concentration Course[5]	Major
34	**Concentration Course**	3	Concentration Course[5]	Major
35	**General Electives**	3	General Electives (See: Advisor)	General Elective
36	**Concentration Course**	0-3	Concentration Course[5] or General Electives (See: Advisor)	Major
37	**Concentration Course or General Electives**	3	Concentration Course[5] or Upper Level General Electives (See: Advisor)	Major
38	**Concentration Course or General Electives**	3	Concentration Course[5] or Upper Level General Electives (See: Advisor)	Major
39	**Gen Ed: Apex**	3	Approved Apex course (MATH 400 recommended)[6]	Apex
B.S. MATHEMATICS DEGREE TOTAL		**120-123**		

Important Academic Information:

[1]Students who complete ENG 111 after Spring 2024 will earn ENGH elective for ENG 111 and ENGH 101 for ENG 112.

[2]If students are placed directly into MTH 263 and do not need MTH 167, students should take MTH 266.

[3]200-level ENG literature classes include: ENG 225, ENG 230, ENG 236, ENG 237, ENG 245, ENG 246, ENG 250, ENG 255, ENG 256, ENG 257, ENG 258, ENG 271, ENG 275, and ENG 279.

[4]Students must complete a two-course sequence in the same subject.

[5]For concentration course requirements see: https://catalog.gmu.edu/colleges-schools/science/mathematical-sciences/mathematics-bs/#requirementstext

[6]For approved Mason Core courses, please visit - https://catalog.gmu.edu/mason-core/

General Education Waiver Policy and Guidance:

• Students who complete a VCCS transfer associate degree (AS, AA, or AFA) will receive a waiver of the Foundation and Exploration (lower division) Mason Core general education categories, which can be found here: https://catalog.gmu.edu/mason-core/ . To be eligible for the waiver, the students must provide the Mason Office of Admissions with a final, official transcript reflecting the degree conferral date. As a prerequisite for ENGH 302, ENGH 101 is not waived. Students must complete ENGH 100 or ENGH 101, or an equivalent, with a C or higher.

• When a course fulfills a Mason Core requirement **and** a major or college requirement (e.g. Major & Quant), students must complete the course listed on the pathway to fulfill the major/college requirement. Courses that fulfill only Mason Core Foundation and Exploration categories are recommendations. In most pathways, ADVANCE students must complete a Quantitative Reasoning course to matriculate through ADVANCE.

• ADVANCE students must complete the associate degree indicated on their pathway (see the ADVANCE Program Milestones listed above). Students who withdraw from ADVANCE and transfer without the associate degree or UCGS are required to complete each Mason Core general education category.

Additional General Notes & Resources:

• A maximum of 6 credits of grades below 2.00 in coursework designated MATH or STAT may be applied toward the major. Students intending to enter graduate school in mathematics are strongly advised to take MATH 315 Advanced Calculus I and MATH 321 Abstract Algebra.
Students may not receive credit for both MATH 214 Elementary Differential Equations and MATH 216 Theory of Differential Equations; both MATH 213 Analytic Geometry and Calculus III and MATH 215 Analytic Geometry and Calculus III (Honors); both MATH 351 Probability and STAT 344 Probability and Statistics for Engineers and Scientists I; and both MATH 352 Statistics and STAT 354 Probability and Statistics for Engineers and Scientists II.

• Students interested in pursuing licensure to teach at the secondary level may add the Undergraduate Certificate: Secondary Education - Mathematics to this degree. For more information visit: https://education.gmu.edu/secondary-education-6-12/academics/ . Some certificate courses can be used to fulfill general elective requirements, but additional credits may be needed to complete the certificate. Students interested in teacher licensure should meet with a Mason pre-teacher advisor. Contact information: https://cehd.gmu.edu/current-students/advising/

• For academic policies and procedures, please see Mason catalog - https://catalog.gmu.edu/policies/

• Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation.