

ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Science: Mathematics
Specialization / B.S. Mathematics
Pathway
2023-2024

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 101	Written Comm
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 (<i>recommended</i>)	HIST 101 HIST 102 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 XXX	General Elective
8	MTH 263	4	MTH 263 Calculus I	MATH 113	Quantitative
9	Social/Behavioral Sciences #1	3	ECO 201 Principles of Macroeconomics OR ECO 202 Principles of Microeconomics (<i>required for Actuarial Concentration</i>) 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	GGG 101 GOVT 133 GOVT 132	Global Understanding
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	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	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 (<i>recommended for Mathematical Statistics concentration</i>) 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 SOC 200 Introduction to Sociology	STAT 250 COMM L305 ECON 103 ENGH 202 CLAS 250 PHIL 173 PSYC 100 RELI 100 SOCI 101	General Elective

A. S. SCIENCE (MATH) DEGREE

62

TOTAL

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
21	Concentration Course	3	Concentration Course ⁵	Major
22	Mathematics Core or General Electives	3	MATH 203 Linear Algebra (<i>if not completed at NOVA</i>) 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: Synthesis	3	Approved Synthesis course (MATH 400 recommended) ⁶	Synthesis

B.S. MATHEMATICS DEGREE		120-123		
TOTAL				

Important Academic Information:

- ¹Students who complete ENG 111 after Spring 2024 will earn ENGH elective for ENG 111 and ENGH 101 for ENG 112.
- ²If students are placed directly into MTH 263 and do not need MTH 167, students should take MTH 266.
- ³200-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.
- ⁴Students must complete a two-course sequence in the same subject.
- ⁵For concentration course requirements see: <https://catalog.gmu.edu/colleges-schools/science/mathematical-sciences/mathematics-bs/#requirements>
- ⁶For approved Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>

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/teacher/advising/advising-appointment/>
- Students who complete a VCCS transfer associate degree (AS, AA, & AFA) will receive a waiver of the Foundation and Exploration (lower division) Mason Core general education categories. 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.
- 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.