

# ADVANCE

A NOVA | GEORGE MASON PARTNERSHIP



A.S. Science: Mathematics Major /  
B.S. Mathematics Pathway  
**2026-2027**

## A.S. Science: Mathematics Major

### 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 George Mason University and/or result in termination from ADVANCE. For Milestones #4-#7, failure to meet these milestones may delay matriculation to George Mason.

- Students must graduate with the NOVA degree aligned with their ADVANCE academic pathway within 4 years of being admitted into ADVANCE. Students must ensure they are enrolled in the matching degree.
- Students must maintain a minimum 2.5 cumulative GPA at NOVA and must have a minimum 2.5 GPA upon matriculation to George Mason.
- Students who wish to enroll at George 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 George Mason for the spring semester must apply for NOVA fall graduation by October 1.
- Students must begin developmental coursework no later than the first semester in ADVANCE at NOVA.
- 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).
- In the first 30 credits, students must complete ENG 111 and ENG 112 with a C or better.
- Students must complete a college level math course 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   | GEORGE MASON TRANSFER EQUIVALENT  | GEORGE MASON CORE/DEGREE EQUIVALENT |
|---------------------------------|---------|---|---|-------------------------------------|
| 1 SDV Course                    | 1       | SDV 100 College Success Skills <b>OR</b><br>SDV 101 Orientation to XXX  | UNIV 100  | General Elective                    |
| 2 ENG 111                       | 3       | ENG 111 College Composition I   | ENGH XXX  | General Elective                    |
| 3 HIS Course                    | 3       | HIS 101 Western Civilizations Pre-1600 CE <b>OR</b><br>HIS 102 Western Civilizations Post-1600 CE <b>OR</b><br>HIS 112 World Civilizations Post-1500 CE ( <i>recommended</i> )  | HIST 101T<br>HIST 102T<br>HIST 125  | Global History                      |
| 4 MTH 167                       | 5       | MTH 167 PreCalculus with Trigonometry <sup>1</sup>  | MATH 105  | General Elective                    |
| 5 MTH Elective #1               | 3       | CSC 221 Introduction to Problem Solving and Programming   | CS 108  | Info Tech                           |
| 6 Humanities/Fine Arts #1       | 3       | ART 100 Art Appreciation <b>OR</b><br>ART 101 History of Art: Prehistoric to Gothic <b>OR</b><br>ART 102 History of Art: Renaissance to Modern <b>OR</b><br>CST 130 Introduction to Theatre <b>OR</b><br>CST 151 Film Appreciation I <b>OR</b><br>MUS 121 Music in Society  | ARTH 101<br>ARTH 200<br>ARTH 201<br>THR 101<br>ENGH L372<br>MUSI 101  | Arts                                |
| 7 ENG 112                       | 3       | ENG 112 College Composition II  | 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 <b>OR</b><br>ECO 202 Principles of Microeconomics ( <i>required for Actuarial Concentration</i> ) <b>OR</b><br>GEO 210 People and the Land: An Introduction to Cultural Geography <b>OR</b><br>HIS 121 United States History to 1877 <b>OR</b><br>HIS 122 United States History Since 1865 <b>OR</b><br>PLS 135 U.S. Government and Politics <b>OR</b><br>PSY 200 Principles of Psychology <b>OR</b><br>PSY 230 Developmental Psychology <b>OR</b><br>SOC 200 Introduction to Sociology <b>OR</b><br>SOC 211 Cultural Anthropology | ECON 104<br>ECON 103<br>GGS 103<br>HIST 121<br>HIST 122<br>GOVT 103<br>PSYC 100<br>PSYC 211<br>SOCI 101<br>ANTH 114 | Soc/Behav                           |
| 10 CST Course                   | 3       | CST 100 Principles of Public Speaking <b>OR</b><br>CST 110 Introduction to Human Communication  | COMM 100<br>COMM 101  | Oral Comm                           |

|    |   |   |   |  |                        |
|----|---|---|---|--|------------------------|
| 11 | Humanities/Fine Arts #2   | 3 | ENG 225 Reading Literature: Culture and Ideas <b>OR</b><br>ENG 245 British Literature <b>OR</b><br>ENG 246 American Literature <b>OR</b><br>ENG 255 World Literature <b>OR</b><br>ENG 258 African American Literature <b>OR</b><br>ENG 275 Women in Literature <b>OR</b><br>Any 200-Level ENG Literature course <sup>2</sup>  | ENGH 202 or<br>FRLN L330 (ENG<br>255 only)   | Literature             |
| 12 | MTH 264   | 4 | MTH 264 Calculus II   | MATH 114   | Major                  |
| 13 | MTH Elective #2   | 3 | MTH 288 Discrete Mathematics  | MATH 125   | Major                  |
| 14 | Social/Behavioral Sciences #2   | 3 | GEO 220 World Regional Geography <b>OR</b><br>PLS 140 Introduction to Comparative Politics <b>OR</b><br>PLS 241 Introduction to International Relations   | GGG 101<br>GOVT 133<br>GOVT 132  | General Elective       |
| 15 | Science Course #1 (two-course sequence required)  | 4 | BIO 101 General Biology I <sup>3</sup> <b>OR</b><br>CHM 111 General Chemistry I <sup>3</sup> <b>OR</b><br>GOL 105 Physical Geology <sup>3</sup> <b>OR</b><br>PHY 241 University Physics I <sup>3</sup>  | BIOL 103/105<br>CHEM 211-213<br>GEOL 101-103<br>PHYS 160-161   | Major &<br>Nat Science |
| 16 | MTH 265   | 4 | MTH 265 Calculus III  | MATH 213   | Major                  |
| 17 | MTH Elective #3   | 3 | MTH 267 Differential Equations  | MATH 214   | Major                  |
| 18 | Science Course #2 (two-course sequence required)  | 4 | BIO 102 General Biology II <sup>3</sup> <b>OR</b><br>CHM 112 General Chemistry II <sup>3</sup> <b>OR</b><br>GOL 106 Historical Geology <sup>3</sup> <b>OR</b><br>PHY 242 University Physics II <sup>3</sup>   | BIOL 102<br>CHEM 212-214<br>GEOL 102-104<br>PHYS 260-261   | Major &<br>Nat Science |
| 19 | General Education Elective (This elective must be taken at George Mason if selections for all other requirements total 60 credits or more.) | 3 | MTH 245 Statistics I (recommended for Mathematical Statistics concentration) <b>OR</b><br>CST 229 Intercultural Communication <b>OR</b><br>ECO 202 Principles of Microeconomics <b>OR</b><br>HUM 259 The Greek and Roman Tradition <b>OR</b><br>PHI 111 Logic <b>OR</b><br>PSY 200 Principles of Psychology <b>OR</b><br>REL 100 Introduction to the Study of Religion <b>OR</b><br>REL 230 Religions of the World <b>OR</b><br>SOC 200 Introduction to Sociology | STAT 250<br>COMM L305<br>ECON 103<br>CLAS 260<br>PHIL 173T<br>PSYC 100<br>RELI 100<br>RELI ---<br>SOCL 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; Mathematics for the Biological Sciences; Pure Mathematics

| GEORGE MASON DEGREE REQUIREMENT                | Credits | Course   | GEORGE MASON CORE/DEGREE EQUIVALENT |
|--|---------|--|-------------------------------------|
| 20 Computer Programming                        | 3       | CS 109 Introduction to Computer Programming, Part B  | Major                               |
| 21 Concentration Course                        | 3       | Concentration Course <sup>4</sup>  | Major                               |
| 22 Mathematics Core or General Electives       | 3       | MATH 203 Linear Algebra (if not completed at NOVA) <b>OR</b><br>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 <sup>4</sup>  | Major                               |
| 26 Concentration Course                        | 3       | Concentration Course <sup>4</sup>  | Major                               |
| 27 Concentration Course                        | 3       | Concentration Course <sup>4</sup>  | 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 <sup>4</sup>   | Major            |
| 31 | Concentration Course                      | 3   | Concentration Course <sup>4</sup>   | Major            |
| 32 | Concentration Course                      | 3   | Concentration Course <sup>4</sup>   | Major            |
| 33 | Concentration Course                      | 3   | Concentration Course <sup>4</sup>   | Major            |
| 34 | Concentration Course                      | 3   | Concentration Course <sup>4</sup>   | Major            |
| 35 | General Electives                         | 3   | General Electives (See: Advisor)  | General Elective |
| 36 | Concentration Course                      | 0-3 | Concentration Course <sup>4</sup> or General Electives (See: Advisor)             | Major            |
| 37 | Concentration Course or General Electives | 3   | Concentration Course <sup>4</sup> or Upper Level General Electives (See: Advisor) | Major            |
| 38 | Concentration Course or General Electives | 3   | Concentration Course <sup>4</sup> or Upper Level General Electives (See: Advisor) | Major            |
| 39 | Gen Ed: Apex                              | 3   | Approved Apex course (MATH 400 recommended) <sup>5</sup>                          | Apex             |

**B.S. MATHEMATICS DEGREE**

**120-121**

**TOTAL**

**Important Academic Information:**

<sup>1</sup>If students are placed directly into MTH 263 and do not need MTH 167, students should take MTH 266.

<sup>2</sup>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.

<sup>3</sup>Students must complete a two-course sequence in the same subject.

<sup>4</sup>For concentration course requirements see: <https://catalog.gmu.edu/colleges-schools/science/mathematical-sciences/mathematics-bs/#requirements>

<sup>5</sup>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 George 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.
- For academic policies and procedures, please see the George 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.