

# ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Science: Mathematics Specialization / B.S.  
Computational and Data Sciences Pathway  
*Online Option Available*  
**2022-2023**

## A.S. Science: Mathematics Specialization Pathway

### 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 <b>OR</b> SDV 101 Orientation to XXX	UNIV 100	General Elective
2	ENG 111	3	ENG 111 College Composition I	ENGH 101	Written Comm
3	HIS Course	3	HIS 101 Western Civilizations Pre-1600 CE <b>OR</b> HIS 102 Western Civilizations Post-1600 CE <b>OR</b> HIS 112 World Civilizations Post-1500 CE	HIST 101 HIST 102 HIST 125	Western Civ
4	MTH 167	5	MTH 167 PreCalculus with Trigonometry <sup>1</sup>	MATH 105	General Elective
5	Humanities/Fine Arts #1	3	ART 100 Art Appreciation <b>OR</b> ART 101 History of Art: Prehistoric to Gothic <b>OR</b> ART 102 History of Art: Renaissance to Modern <b>OR</b> CST 130 Introduction to Theatre <b>OR</b> CST 151 Film Appreciation I <b>OR</b> MUS 121 Music in Society	ARTH 101 ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
6	ENG 112	3	ENG 112 College Composition II	ENGH XXX	General Elective
7	MTH 263	4	MTH 263 Calculus I	MATH 113	Quantitative
8	Social/Behavioral Sciences #1	3	ECO 201 Principles of Macroeconomics <b>OR</b> ECO 202 Principles of Microeconomics <b>OR</b> GEO 210 People and the Land: An Introduction to Cultural Geography <b>OR</b> HIS 121 United States History to 1877 <b>OR</b> HIS 122 United States History Since 1865 <b>OR</b> PLS 135 U.S. Government and Politics <b>OR</b> PSY 200 Principles of Psychology <b>OR</b> PSY 230 Developmental Psychology <b>OR</b> SOC 200 Introduction to Sociology <b>OR</b> 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
9	CST Course	3	CST 100 Principles of Public Speaking <b>OR</b> CST 110 Introduction to Human Communication	COMM 100 COMM 101	Oral Comm

10	Humanities/Fine Arts #2	3	ENG 225 Reading Literature: Culture and Ideas <b>OR</b> ENG 245 British Literature <b>OR</b> ENG 246 American Literature <b>OR</b> ENG 255 World Literature <b>OR</b> ENG 258 African American Literature <b>OR</b> ENG 275 Women's Literature <b>OR</b> Any 200-Level ENG Literature course <sup>2</sup>	ENGH 202 or FRLN L330 (ENG 255 only)	Literature
11	MTH 264	4	MTH 264 Calculus II	MATH 114	Major
12	CSC 221	3	CDS 130 Computing For Scientists	CDS 130	Major & Info Tech
13	Social/Behavioral Sciences #2	3	GEO 220 World Regional Geography <b>OR</b> PLS 140 Introduction to Comparative Politics <b>OR</b> PLS 241 Introduction to International Relations	GGS 101 GOVT 133 GOVT 132	Global
14	Science Course #1	4	PHY 241 University Physics I	PHYS 160-161	Nat Science
15	MTH Course #1	4	CDS 101/102 Introduction to Computational and Data Sciences + Lab	CDS 101 CDS 102	Major
16	MTH 265	4	MTH 265 Calculus III	MATH 213	General Elective
17	MTH Course #2	3	MTH 266 Linear Algebra	MATH 203	Major
18	Science Course #2	4	PHY 242 University Physics II	PHYS 260-261	Nat Science
19	General Education Elective (This course must be taken at Mason if selections for all other requirements total 60 credits or more)	3	MTH 245 Statistics I	STAT 250	Major

#### A. S. SCIENCE (MATH) DEGREE

**TOTAL** 60-61

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

### B.S. Computational and Data Sciences

	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
20	Statistics Course	0-3	STAT 250 Introductory Statistics <i>(if not already taken at NOVA)</i>	Major
21	Statistics Course	3	STAT 350 Introduction to Statistics II <b>OR</b> STAT 344 Probability and Statistics for Engineers and Scientists I <b>OR</b> STAT 346 Probability for Engineers	Major
22	Core Required Courses	1	CDS 151 Data Ethics in an Information Society	Major
23	Gen Ed: Written Communication (Upper Level)	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
24	Core Required Courses	3	CDS 301 Scientific Information and Data Visualization	Major
25	Core Required Courses	3	CDS 303 Scientific Data Mining	Major
26	Core Required Courses	3	CDS 302 Scientific Data and Databases	Writing Intensive
27	Core Required Courses	3	CDS 230 Modeling and Simulation I	Major
28	Mathematics Courses	3	MATH 446 Numerical Analysis I <b>OR</b> General Electives (Upper-level See Advisor)	Major
29	Extended Core Courses	3	Approved Extended Core Courses <sup>3</sup>	Major
30	Extended Core Courses	3	Approved Extended Core Courses <sup>3</sup>	Major
31	Science and Engineering Courses	3	Any College of Science or College of Engineering and Computing Course (Upper-level)	Major
32	General Electives	3	General Electives (Upper-level See: Advisor)	General Elective
33	Extended Core Courses	3	Approved Extended Core Courses <sup>3</sup>	Major
34	Extended Core Courses	3	Approved Extended Core Courses (Upper-level) <sup>3</sup>	Major
35	General Electives	3	General Electives (Upper-level See: Advisor)	General Elective
36	Extended Core Courses	3	Approved Extended Core Courses (Upper-level) <sup>3</sup>	Major
37	Science and Engineering Courses	3	Any College of Science or Colleg of Engineering and Computing Course (Upper-level)	Major

38	General Electives	3	General Electives (Upper-level See: Advisor)	General Elective
39	General Electives	3	General Electives (Upper-level See: Advisor)	General Elective
40	General Electives	0-1	General Electives (See: Advisor)	General Elective
41	Gen Ed: Synthesis	3	Approved Synthesis course <sup>4</sup>	Synthesis

<b>B.S. COMPUTATIONAL &amp; DATA SCIENCES DEGREE</b>	<b>120-124</b>
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Denotes a course that must be taken at George Mason University while attending NOVA. Failure to complete your co-enrollment course(s) while attending NOVA can significantly affect your timeline for Mason graduation. Please see your ADVANCE Coach for more information and to enroll.

**Please note: Some fully online courses may require a campus presence for orientations, tests, final exams, or labs.**

**Important Academic Information:**

- <sup>1</sup>If students are placed into MTH 263 and do not need MTH 167, students should take MTH 288 Discrete Mathematics.
- <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>For approved Extended Core Courses, please visit - <https://catalog.gmu.edu/colleges-schools/science/computational-data-sciences/computational-data-sciences-bs/#requirementstext>
- <sup>4</sup>For approved Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>

**Additional General Notes & Resources:**

- ADVANCE students who earn at least a 2.85 final, cumulative GPA and no more than 9 credits of unrepeated D/F grades may be eligible to receive a waiver for any lower-level Mason Core courses not already completed. To be eligible for the Mason Core waiver, students must also complete the requirements of the AA or AS degree listed on their pathway, and apply to graduate from NOVA by the deadline (see milestone #3). Students must provide the Office of Admissions with a final, official transcript reflecting the degree conferral date and a cumulative NOVA GPA at or above 2.85.
- 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.