

# ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Science: Mathematics Specialization /  
B.S. Statistics - All Concentrations  
**2021-2022**

## 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-#6, 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 graduation by March 1 for spring graduation or June 1 for summer graduation. Students who wish to enroll at Mason for the spring semester must apply for NOVA graduation by October 1 for winter graduation.
4. Students must begin developmental coursework in 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:
  - a. Complete ENG 111 and ENG 112 with a C or better.
  - b. Complete the first college-level MTH course with a C or better.

	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 History of Western Civilization I <b>OR</b> HIS 102 History of Western Civilization II <b>OR</b> HIS 112 History of World Civilization II	HIST 101 HIST 102 HIST 125	Western Civ
4	MTH 263	4	MTH 263 Calculus I	MATH 113	Quantitative
5	ENG 112	3	ENG 112 College Composition II	ENGH XXX	General Elective
6	General Education Elective	3	STAT 260 Introduction to Statistical Practice I <sup>1</sup>	STAT 260	Major
7	CSC 201	4	CSC 201 Computer Science I	CS 112	Info Tech
8	MTH 264	4	MTH 264 Calculus II	MATH 114	Major
9	Social/Behavioral Sciences #1	3	<b>Sports Analytics concentration:</b> ECO 202 Principles of Microeconomics <b>All other concentrations:</b> ECO 201 Principles of Macroeconomics <b>OR</b> ECO 202 Principles of Microeconomics <b>OR</b> GEO 210 Introduction to Cultural Geography <b>OR</b> HIS 121 United States History I <b>OR</b> HIS 122 United States History II <b>OR</b> PLS 135 American National Politics <b>OR</b> PSY 200 Principles of Psychology <b>OR</b> PSY 230 Developmental Psychology <b>OR</b> SOC 200 Principles of Sociology <b>OR</b> SOC 211 Principles of Anthropology I	ECON 103 ECON 104 ECON 103 GGG 103 HIST 121 HIST 122 GOVT 103 PSYC 100 PSYC 211 SOCI 101 ANTH 114	Soc/Behav
10	Humanities/Fine Arts #1	3	ART 100 Art Appreciation <b>OR</b> ART 101 History and Appreciation of Art I <b>OR</b> ART 102 History and Appreciation of Art II <b>OR</b> CST 130 Introduction to Theatre <b>OR</b> CST 151 Film Appreciation I <b>OR</b> MUS 121 Music Appreciation I	ARTH 101 ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
11	MTH 265	4	MTH 265 Calculus III	MATH 213	Major
12	Math Elective #1	3	MTH 266 Linear Algebra	MATH 203	Major

13	Science Course #1	4	BIO 101 General Biology I <b>OR</b> CHM 101 Introductory Chemistry I <b>OR</b> ENV 121 General Environmental Science I <b>OR</b> GOL 105 Physical Geology <b>OR</b> PHY 101 Introduction to Physics I	BIOL 103/105 CHEM 103 EVPP 108/109 GEOL 101 PHYS 103	Nat Science
14	Social/Behavioral Sciences #2	3	GEO 220 World Regional Geography <b>OR</b> PLS 140 Introduction to Comparative Politics <b>OR</b> PLS 241 International Relations I	GGG 101 GOVT 133 GOVT 132	Global
15	CST Course	3	CST 100 Principles of Public Speaking <b>OR</b> CST 110 Introduction to Communication	COMM 100 COMM 101	Oral Comm
16	MTH Elective #2	3	<b>Applied Statistics:</b> <b>Any Mason CDS 100-200 level course<sup>2</sup> (See: Advisor) (co-enrollment course) OR</b> MTH 245 Statistics I <b>Mathematical Statistics/Statistical Analytics/Sports Analytics:</b> MTH 288 Discrete Mathematics	<b>CDS---</b> STAT 250 MATH 125	Major
17	Science Course #2	4	BIO 101 General Biology I <b>OR</b> BIO 102 General Biology II <b>OR</b> CHM 101 Introductory Chemistry I <b>OR</b> ENV 121 General Environmental Science I <b>OR</b> ENV 122 General Environmental Science II <b>OR</b> GOL 105 Physical Geology <b>OR</b> GOL 106 Historical Geology <b>OR</b> PHY 101 Introduction to Physics I <b>OR</b> PHY 102 Introduction to Physics II	BIOL 103/105 BIOL 102 CHEM 103 EVPP 108/109 EVPP 112/113 GEOL 101 GEOL 102/104 PHYS 103 PHYS 104	Nat Science
18	CSC 202 (NOVA Catalog: CSC 200 or MTH Elective)	3-4	<b>Applied Statistics:</b> CSC 202 Computer Science II <b>OR</b> <b>CYSE 101 Introduction to Cyber Security Engineering (co-enrollment course)</b> <b>Mathematical Statistics/Sports Analytics:</b> <b>CDS 130 Computing for Scientists (required co-enrollment course)</b> <b>Statistical Analytics:</b> CSC 202 Computer Science II	CS 211 <b>CYSE 101</b> <b>CDS 130</b>	Major
19	Humanities/Fine Arts #2	3	ENG 236 Introduction to the Short Story <b>OR</b> ENG 241 Survey of American Literature I <b>OR</b> ENG 242 Survey of American Literature II <b>OR</b> ENG 251 Survey of World Literature I <b>OR</b> ENG 252 Survey of World Literature II <b>OR</b> ENG 253 Survey of African-American Literature I	ENGH 202	Literature

**A. S. SCIENCE (MATH)**

61-62

**DEGREE TOTAL**

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

**B.S. Statistics - All Concentrations**

Students must select one of the following concentration options: Applied Statistics; Mathematical Statistics; Sports Analytics; Statistical Analytics

MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
20 Statistics Core	3	STAT 362 Introduction to Computer Statistical Packages	Major
21 Statistics Core	3	STAT 334 Introduction to Probability Models and Simulation <b>OR</b> STAT 346 Probability for Engineers	Major
22 Gen Ed: Written Communication (Upper-level)	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
23 Statistics Core	3	STAT 354 Probability and Statistics for Engineers and Scientists II <b>OR</b> STAT 360 Introduction to Statistical Practice II	Major
24 Statistics Core	3	STAT 463 Introduction to Exploratory Data Analysis	Major
25 Statistics Core	3	STAT 456 Applied Regression Analysis	Major

26	Statistics Electives	3	Any STAT course numbered 356, or 440-499 <sup>3</sup>	Major
27	Statistics Electives	3	Any STAT course numbered 356, or 440-499 <sup>3</sup>	Major
28	Statistics Electives	3	Any STAT course numbered 356, or 440-499 <sup>3</sup>	Major
29	Technical Elective or General Electives	3	<b>Mathematical Statistics:</b> General Elective (See: Advisor) <b>Applied Statistics, Sports Analytics, and Statistical Analytics:</b> Any approved Technical Elective <sup>3,4</sup>	Major
30	Concentration Requirement	3	<b>Mathematical Statistics:</b> MATH 300 Introduction to Advanced Mathematics <b>Applied Statistics:</b> Approved concentration/minor course (See: Advisor) <b>Sports Analytics:</b> SPMT 201 Introduction to Sport Management <b>Statistical Analytics:</b> CS 310 Data Structures	Major
31	Concentration Requirement	3	<b>Mathematical Statistics:</b> MATH 315 Advanced Calculus I <b>Applied Statistics:</b> Approved concentration/minor course (See: Advisor) <b>Sports Analytics:</b> SPMT 425 Sport Analytics <b>Statistical Analytics:</b> CS 330 Formal Methods and Models	Major
32	Concentration Requirement	3	<b>Mathematical Statistics:</b> STAT 356 Statistical Theory <b>Applied Statistics:</b> Approved concentration/minor course (See: Advisor) <b>Sports Analytics:</b> SRST 450 Research Methods <b>Statistical Analytics:</b> OR 481 Numerical Methods in Engineering	Major
33	Concentration Requirement	3	<b>Mathematical Statistics:</b> Any approved Technical Elective <sup>3,4</sup> <b>Applied Statistics:</b> Approved concentration/minor course (See: Advisor) <b>Sports Analytics:</b> Any SPMT course numbered 400 - 499 <b>Statistical Analytics:</b> STAT 472 Introduction to Statistical Learning	Major
34	Concentration Requirement	3	<b>Mathematical Statistics:</b> Any approved Technical Elective <sup>3,4</sup> <b>Applied Statistics:</b> Approved concentration/minor course (See: Advisor) <b>Sports Analytics:</b> Any SPMT course numbered 400 - 499 <b>Statistical Analytics:</b> CS 450 Database Concepts <b>OR</b> CDS 302 Scientific Data and Databases	Major
35	Concentration Requirement	3	<b>Mathematical Statistics:</b> Approved Technical Elective <sup>3,4</sup> (Upper-level, See: Advisor) <b>Applied Statistics:</b> Approved concentration/minor course (See: Advisor) <b>Sports Analytics:</b> ECON 104 Contemporary Macroeconomic Principles <b>Statistical Analytics:</b> CS 484 Data Mining <b>OR</b> CDS 303 Scientific Data Mining	Major
36	Statistics Core	3	STAT 489 Pre-Capstone Professional Development	Writing Intensive

37	Concentration or Technical Elective or General Electives	3	<b>Mathematical Statistics:</b> General Elective (Upper-level, See: Advisor) <b>Applied Statistics:</b> Approved minor course or General Elective <sup>5</sup> (See: Advisor) <b>Analytical Statistics and Sports Analytics:</b> Any approved Technical Elective <sup>3,4</sup>	Major or General Elective
	38	General Elective	0-3	<b>Mathematical Statistics:</b> General Elective (See: Advisor) <b>Applied Statistics, Sports Analytics, and Statistical Analytics:</b> Not needed
39	General Electives	1-3	General Elective (See: Advisor)	General Elective
40	Gen Ed: Synthesis/Statistics Core	3	STAT 490 Capstone in Statistics	Synthesis
<b>B.S. STATISTICS DEGREE</b>		<b>120</b>		
<b>TOTAL</b>				

Denotes a course that must be taken at George Mason University. Please see your Success Coach to enroll.

**Important Academic Information:**

<sup>1</sup>Students must demonstrate readiness to take MTH 263 or complete MTH 263 before enrolling in STAT 260. STAT 260 can be useful in helping students choose a concentration and develop their plan of study.

<sup>2</sup>Options include CDS 101, 102, 130, 151, 201, 205, 230, 251, 290, and 292.

<sup>3</sup>May not be used to fulfill other degree requirements.

<sup>4</sup>For approved Technical Electives and concentration requirements, please visit - <https://catalog.gmu.edu/colleges-schools/engineering/statistics/statistics-bs/>

<sup>5</sup>Pathway assumes 18 credit minor for Applied Statistics concentration.

**Additional General Notes & Resources:**

- ADVANCE students who earn at least a 2.85 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 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 meet these criteria by the time of matriculation to Mason and provide the Office of Admissions a final, official transcript reflecting the degree conferral date.
- 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.

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