ADVANCE
A NOVA | MASON PARTNERSHIP

A.S. Science: Mathematics Specialization / B.S. Statistics - All Concentrations
2022-2023

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	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	HIST 101 HIST 102 HIST 125	Western Civ
4	**MTH 167**	5	MTH 167 PreCalculus with Trigonometry[1]	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	ENGH XXX	General Elective
8	**MTH 263**	4	MTH 263 Calculus I	MATH 113	Quantitative
9	**General Education Elective**	3	STAT 260 Introduction to Statistical Practice I[2]	STAT 260	Major
10	**Social/Behavioral Sciences #1**	3	**Sports Analytics concentration:** ECO 202 Principles of Microeconomics **All other concentrations:** ECO 201 Principles of Macroeconomics **OR** ECO 202 Principles of Microeconomics **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 103 ECON 104 ECON 103 GGS 103 HIST 121 HIST 122 GOVT 103 PSYC 100 PSYC 211 SOCI 101 ANTH 114	Soc/Behav
11	**CST Course**	3	CST 100 Principles of Public Speaking **OR** CST 110 Introduction to Human Communication	COMM 100 COMM 101	Oral Comm

12	**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's Literature **OR** Any 200-Level ENG Literature course[3]	ENGH 202 or FRLN L330 (ENG 255 only)	Literature
13	**MTH 264**	4	MTH 264 Calculus II	MATH 114	Major
14	**MTH Elective #1**	3	**Applied Statistics:** **Any Mason CDS 100-200 level course[4] (See: Advisor) (co-enrollment course) OR** MTH 245 Statistics I[5] **Mathematical Statistics/Statistical Analytics/Sports Analytics:** MTH 288 Discrete Mathematics	**CDS---** STAT 250 MATH 125	Major
15	**Social/Behavioral Sciences #2**	3	GEO 220 World Regional Geography **OR** HIS 111 World Civilizations Pre-1500 CE **OR** PLS 140 Introduction to Comparative Politics **OR** PLS 241 Introduction to International Relations **OR** PSY 219 Cross-Cultural Psychology **OR** SSC 115 Introduction to Global Affairs	GGS 101 HIST L387 GOVT 133 GOVT 132 PSYC L379 GLOA 101	Global
16	**Science Course #1**	4	BIO 101 General Biology I **OR** CHM 101 Introductory Chemistry **OR** ENV 121 General Environmental Science I **OR** GOL 105 Physical Geology **OR** PHY 100 Elements of Physics	BIOL 103/105 CHEM 103 EVPP 108/109 GEOL 101/103 PHYS 103	Nat Science
17	**MTH 265**	4	MTH 265 Calculus III	MATH 213	Major
18	**Math Elective #2**	3	MTH 266 Linear Algebra	MATH 203	Major
19	**Science Course #2**	4	BIO 101 General Biology I **OR** BIO 102 General Biology II **OR** CHM 101 Introductory Chemistry **OR** ENV 121 General Environmental Science I **OR** ENV 122 General Environmental Science II **OR** GOL 105 Physical Geology **OR** GOL 106 Historical Geology **OR** PHY 100 Elements of Physics	BIOL 103/105 BIOL 102 CHEM 103 EVPP 108/109 EVPP 112/113 GEOL 101/103 GEOL 102/104 PHYS 103	Nat Science
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. 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	**Computational Skills Core or General Elective**	0-4	CS 112 Introduction to Computer Programming ***(if not taken at NOVA)*** **OR** General Elective	Major
21	**Statistics Core**	3	STAT 362 Introduction to Computer Statistical Packages	Major
22	**Statistics Core**	3	STAT 334 Introduction to Probability Models and Simulation **OR** STAT 346 Probability for Engineers	Major
23	**Gen Ed: Written Communication (Upper-level)**	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
24	**Statistics Core**	3	STAT 354 Probability and Statistics for Engineers and Scientists II **OR** STAT 360 Introduction to Statistical Practice II	Major
25	**Statistics Core**	3	STAT 463 Introduction to Exploratory Data Analysis	Major
26	**Statistics Core**	3	STAT 456 Applied Regression Analysis	Major

27	**Statistics Electives**	3	Any STAT course numbered 356, or 440-499[6]	Major
28	**Statistics Electives**	3	Any STAT course numbered 356, or 440-499[6]	Major
29	**Statistics Electives**	3	Any STAT course numbered 356, or 440-499[6]	Major
30	**Technical Elective or General Electives**	3	**Mathematical Statistics and Sports Analytics:** CDS 130 Computing for Scientists **Applied Statistics:** Any approved Technical Elective[6,7] **Statistical Analytics:** CSC 211 Object-Oriented Programming	Major
31	**Concentration Requirement**	3	**Mathematical Statistics:** MATH 300 Introduction to Advanced Mathematics **Applied Statistics:** Approved concentration/minor course (See: Advisor) **Sports Analytics:** SPMT 201 Introduction to Sport Management **Statistical Analytics:** CS 310 Data Structures	Major
32	**Concentration Requirement**	3	**Mathematical Statistics:** MATH 315 Advanced Calculus I **Applied Statistics:** Approved concentration/minor course (See: Advisor) **Sports Analytics:** SPMT 425 Sport Analytics **Statistical Analytics:** CS 330 Formal Methods and Models	Major
33	**Concentration Requirement**	3	**Mathematical Statistics:** STAT 356 Statistical Theory **Applied Statistics:** Approved concentration/minor course (See: Advisor) **Sports Analytics:** SRST 450 Research Methods **Statistical Analytics:** OR 481 Numerical Methods in Engineering	Major
34	**Concentration Requirement**	3	**Mathematical Statistics:** Any approved Technical Elective[6,7] **Applied Statistics:** Approved concentration/minor course (See: Advisor) **Sports Analytics:** Any SPMT course numbered 400 - 499 **Statistical Analytics:** STAT 472 Introduction to Statistical Learning	Major
35	**Concentration Requirement**	3	**Mathematical Statistics:** Any approved Technical Elective[6,7] **Applied Statistics:** Approved concentration/minor course (See: Advisor) **Sports Analytics:** Any SPMT course numbered 400 - 499 **Statistical Analytics:** CS 450 Database Concepts **OR** CDS 302 Scientific Data and Databases	Major
36	**Concentration Requirement**	3	**Mathematical Statistics:** Approved Technical Elective[6,7](Upper-level, See: Advisor) **Applied Statistics:** Approved concentration/minor course (See: Advisor) **Sports Analytics:** ECON 104 Contemporary Macroeconomic Principles **Statistical Analytics:** CS 484 Data Mining **OR** CDS 303 Scientific Data Mining	Major
37	**Statistics Core**	3	STAT 489 Pre-Capstone Professional Development	Writing Intensive

38	**Concentration or Technical Elective or General Electives**	3	**Mathematical Statistics:** General Elective (Upper-level, See: Advisor) **Applied Statistics:** Approved minor course or General Elective[8] (See: Advisor) **Analytical Statistics and Sports Analytics:** Any approved Technical Elective[6,7]	Major or General Elective
39	**General Elective**	3	**Mathematical Statistics:** General Elective (See: Advisor) **Applied Statistics, Sports Analytics and Statistical Analytics:** Approved Technical Elective[6,7]	General Elective
40	**Gen Ed: Synthesis/Statistics Core**	3	STAT 490 Capstone in Statistics	Synthesis
B.S. STATISTICS DEGREE		**120-126**		

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.

Important Academic Information:

[1]If students are placed directly into MTH 263 and do not need MTH 167, students should take CSC 222.

[2]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.

[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]Options include CDS 101, 102, 130, 151, 201, 205, 230, 251, 290, and 292.

[5]Students will need a course substitute submitted for MTH 245 to count as a MTH Elective course at NOVA.

[6]May not be used to fulfill other degree requirements.

[7]For approved Technical Electives and concentration requirements, please visit - https://catalog.gmu.edu/colleges-schools/engineering/statistics/statistics-bs/

[8]Pathway assumes 18 credit minor for Applied Statistics concentration.

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.