ADVANCE
A NOVA | MASON PARTNERSHIP

A.S. Computer Science / B.S. Computer Science Pathway
2023-2024

A.S. Computer Science
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 <u>highly encouraged</u> 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).

Computer Science Admission Requirements: All transfer applicants must have earned at a least B in CSC 222 or CSC 223, <u>AND</u> must have earned at least a B in one of the following: MTH 263, MTH 264, or MTH 288.

	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	CSC 221	3	CSC 221 Introduction to Problem Solving and Programming	CS XXX	General Elective
4	HIS Elective	3	HIS 101 Western Civilizations Pre-1600 CE **OR** HIS 102 Western Civilizations Post-1600 CE **OR** HIS 112 World Civilizations Post-1500 CE *(recommended)*	HIST 101 HIST 102 HIST 125	Global History
5	MTH 167	5	MTH 167 PreCalculus with Trigonometry[2]	MATH 105	General Elective
6	CSC 222	4	CSC 222 Object Oriented Programming	CS 112	Major
7	ENG 112	3	ENG 112 College Composition II[1]	ENGH XXX	General Elective
8	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
9	MTH 263	4	MTH 263 Calculus I	MATH 113	Quantitative
10	CSC 223	4	CSC 223 Data Structures and Analysis of Algorithms	CS 211	Major
11	MTH 288 OR CSC 208	3	MTH 288 Discrete Mathematics **OR** CSC 208 Introduction to Discrete Structures	MATH 125	Major
12	MTH 264	4	MTH 264 Calculus II	MATH 114	Major
13	Science Course #1	4	See footnote #3 when selecting from the following: BIO 101 General Biology I **OR** CHM 111 General Chemistry I **OR** PHY 241 University Physics I **OR** GOL 105 Physical Geology	BIOL 103/105 CHEM 211-213 PHY 160-161 GEOL 101/103	Natural Science

#	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT	
14	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[4]	ENGH 202 or FRLN L330 (ENG 255 only)	Literature
15	**MTH 265 Required** *(NOVA Catalog: MTH 265, CSC 205, CSC 215)*	4	MTH 265 Calculus III	MATH 213	Major
16	Science Course #2	4	**See footnote #3 when selecting from the following:** BIO 102 General Biology II **OR** CHM 112 General Chemistry II **OR** PHY 242 University Physics II **OR** GOL 106 Historical Geology	BIOL 102 CHEM 212-214 PHY 260-261 GEOL 102/104	Major
17	Social/Behavioral Sciences	3	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** SOC 200 Introduction to Sociology **OR** SOC 211 Cultural Anthropology	ECON 104 ECON 103 GGS 103 HIST 121 HIST 122 GOVT 103 PSYC 100 SOCI 101 ANTH 114	Soc/Behav
18	Approved Elective	3	CST 100 Principles of Public Speaking **OR** CST 110 Introduction to Human Communication	COMM 100 COMM 101	Oral Comm
	A. S. COMP SCIENCE DEGREE TOTAL	**61**			

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

B.S. Computer Science

#	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
19	Computer Science Core Requirements	3	CS 110 Essentials of Computer Science	Major
20	Mathematics/Statistics Requirement	0-3	**If not completed at NOVA:** MATH 203 Linear Algebra	Major
21	Gen Ed: Written Communication (Upper-level)	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
22	Additional Natural Science[2]	0-4	**If not completed at NOVA:** **See footnote #3 when selecting from the following:** BIOL 103/105 Introductory Biology I **OR** BIOL 102 Introductory Biology II Lecture & Lab **OR** CHEM 211 & 213 General Chemistry I Lecture & Lab **OR** CHEM 212 & 214 General Chemistry II Lecture & Lab **OR** PHYS 160/161 University Physics I Lecture & Lab **OR** PHYS 260/261 College Physics I Lecture & Lab **OR** GEOL 101/103 Physical Geology & Lab **OR** GEOL 102/104 Historical Geology & Lab	Natural Science
23	Computer Science Core Requirements	3	CS 262 Introduction to Low-Level Programming	Major
24	Computer Science Core Requirements	3	CS 306 Synthesis of Ethics and Law for the Computing Professional	Major
25	Computer Science Core Requirements	3	CS 310 Data Structure	Major
26	Computer Science Core Requirements	3	CS 321 Software Engineering	Major
27	Computer Science Core Requirements	3	CS 330 Formal Methods and Models	Major
28	Computer Science Core Requirements	4	CS 367 Computer Systems and Programming	Major

29	Computer Science Core Requirements	3	CS 471 Operating Systems	Major
30	Computer Science Core Requirements	3	CS 483 Analysis of Algorithms	Major
31	Computer Science Core Requirements	3	CS 455 Computer Communications and Networking **OR** CS 468 Secure Programming and Systems **OR** CS 475 Concurrent and Distributed Systems **OR** CS 487 Introduction to Cryptography	Major
32	Computer Science Core Requirements	3	Approved Senior Computer Science Elective[5]	Major
33	Computer Science Core Requirements	3	Approved Senior Computer Science Elective[5]	Major
34	Computer Science Core Requirements	3	Approved Senior Computer Science Elective[5]	Major
35	Computer Science Core Requirements	3	Approved Senior Computer Science Elective[5]	Major
36	Mathematics/Statistics Requirement	3	STAT 344 Probability and Statistics for Engineers and Scientists I	Major
37	Computer Science Core Requirements	3	Approved Computer Science Related-Course Elective[5]	Major
38	Computer Science Core Requirements	3	Approved Computer Science Related-Course Elective[5]	Major
39	Gen Ed: Global Understanding	3	Approved Global Understanding Course[6]	Global Understanding

B.S. COMPUTER SCIENCE DEGREE TOTAL	121-126

Important Academic Information:

[1]Students who complete ENG 111 after Spring 2024 will earn ENGH elective for ENG 111 and ENGH 101 for ENG 112.

[2]Students who place directly into MTH 263 and do not need MTH 167 should take MTH 266 and an additional Lab Science class (BIO 101, CHM 111, PHY 241, or GOL 105).

[3]12 credits of Natural Science must include a two-course sequence in the same subject. See advisor to ensure the selected course was not already completed at NOVA.

[4]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.

[5]For Computer Science Electives, please visit - https://catalog.gmu.edu/colleges-schools/engineering-computing/school-computing/computer-science/computer-science-bs/#requirementstext

[6]For approved Mason Core courses, please visit - https://catalog.gmu.edu/mason-core/. Students with a completed AS, AA, or AFA degree are eligible for a waiver of the Foundation and Exploration (lower division) Mason Core general education categories and may be able to replace this course with a general elective, as needed to reach 120 total credits. Please see your ADVANCE Coach for more information.

Additional General Notes & Resources:

• Students interested in pursuing licensure to teach at the secondary level may add the Undergraduate Certificate: Secondary Education - Computer Science 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 requirements. This cannot include transferred credits with an L-designation (e.g. ECE-L301 or STAT L344). All B.S. degrees at Mason require a minimum of 120 credits; see your Mason advisor for advice on what courses to take if needed.