

ADVANCE Program Milestones

1. Students must take SDV 100 or SDV 101 in the first semester at NOVA.
2. Students must begin Developmental coursework in the first semester in ADVANCE at NOVA.
3. Students must take first college-level MTH course and ENG 111 in the semester immediately following the completion of any MTE or ENF courses (excluding summer).
4. In the first 30 credits, students must:
 - a. Complete ENG 111 and ENG 125 with a C or better.
 - b. Complete the first college-level MTH course with a C or better.
 - c. Engineering students must begin the calculus sequence and complete Calculus I and II with a B or better.
5. Students must complete at least six degree-applicable credits with a C or better each fall and spring semester.
6. Students must maintain a 2.5 cumulative GPA

NOVA DEGREE REQUIREMENT SEQUENCE	Credits	Courses	MASON TRANSFER EQUIVALENT	MASON CORE/DEGREE EQUIVALENT
1 SDV Course	1	SDV 100 College Success Skills OR SDV 101 Orientation to Engineering	UNIV 100	ELECTIVE
2 ENG 111	3	ENG 111 College Composition I	ENGH 101	Written Comm
3 Social/Behavioral Sciences #1	3	HIS 101 History of Western Civilization I OR HIS 102 History of Western Civilization II OR 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 Reasoning
5 EGR 120	2	EGR 120 Introduction to Engineering	ENGR 107	DEGREE
6 CST Course	3	CST 100 Principles of Public Speaking OR CST 110 Introduction to Communication OR CST 126 Interpersonal Communication	COMM 100 COMM 100 COMM 101	Oral Comm
7 Technical Elective #1	3	CYSE 101 Intro to Cyber Security Engineering*	CYSE 101	DEGREE
8 ENG Course	3	ENG 125 Introduction to Literature	ENGH 201	Literature
9 MTH 264	4	MTH 264 Calculus II	MATH 114	DEGREE
10 Humanities/Fine Arts #1	3	ART 101 History and Appreciation of Art I OR ART 102 History and Appreciation of Art II OR CST 130 Introduction to Theatre OR CST 151 Film Appreciation I OR MUS 121 Music Appreciation I	ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
11 Social/Behavioral Sciences #2	3	ECO 202 Principles of Microeconomics	ECON 103	Soc/Behav
12 MTH 265	4	MTH 265 Calculus III	MATH 213	DEGREE
13 Technical Elective #2	4	CSC 201 Computer Science I	CS 112	DEGREE
14 Technical Elective #3	3	MTH 266 Linear Algebra	MATH 203	DEGREE
15 PHY 231	5	PHY 231 General University Physics I	PHYS 160-161-266	NAT SCIENCE
16 Humanities/Fine Arts #2	3	REL 100 Introduction to the Study of Religion OR REL 231 Religions of the World I	RELI 100 RELI 212	Global
17 Technical Elective #4	3	CYSE 205 Systems Engineering Principles*	CYSE 205	DEGREE
18 PHY 232	5	PHY 232 General University Physics II	PHYS 260-261-XXX	NAT SCIENCE
19 Technical Elective #5	3	CYSE 211 Operating Systems & Lab*	CYSE 211	DEGREE
20 Technical Elective #6	3	CS 222 Computer Programming for Engineers	CS 222	DEGREE
21 MTH 267	3	MTH 267 Differential Equations	MATH 214	DEGREE
A. S. ENGINEERING DEGREE TOTAL	68			

Students must choose one of the following technical emphases:

Aviation Systems, Bioengineering, Control Systems, Computer Network Systems, Data Analytics, Financial Engineering, Mechanical Engineering, Operations Research, Software-Intensive Systems

MASON DEGREE REQUIREMENT SEQUENCE			Credits	Course	MASON CORE/DEGREE EQUIVALENT
22	Gen Ed: Written Communication (Upper level)	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm	
23	Mathematics and Statistics	3	STAT 344 Probability and Statistics for Engineers	DEGREE	
24	Cyber Security Engineering Core	3	CYSE 220 Systems Modeling	DEGREE	
25	Cyber Security Engineering Core	3	CYSE 230 Computer Networking	DEGREE	
26	Electrical Engineering	3	ECE 301 Digital Electronics	DEGREE	
27	Cyber Security Engineering Core	3	CYSE 325 Discrete Events Systems Modeling	DEGREE	
28	Cyber Security Engineering Core	3	CYSE 330 Intro to Network Security	DEGREE	
29	Cyber Security Engineering Core	3	CYSE 425 Secure RF Communications	DEGREE	
30	Cyber Security Engineering Core	3	CYSE 411 Secure Software Engineering	DEGREE	
31	Cyber Security Engineering Core	3	CYSE 421 Industrial Control Systems (ICS) Security	DEGREE	
32	Cyber Security Engineering Core	3	CYSE 430 Critical Infrastructure Protection	DEGREE	
33	Cyber Security Engineering Core	3	CYSE 470 User Experience Engineering	DEGREE	
34	Cyber Security Engineering Core	4	CYSE 445 Systems Security and Resilience AND CYSE 450 Cyber Vulnerability Lab	DEGREE	
35	Cyber Security Engineering Core	3	CYSE 465 Transportation Systems Design	DEGREE	
36	Cyber Security Engineering Core - Technical Electives	3	Technical Elective**	DEGREE	
37	Cyber Security Engineering Core	2	CYSE 492 Senior Advance Design Project I	DEGREE	
38	Cyber Security Engineering Core	3	CYSE 475 Cyber Physical Systems	DEGREE	
39	Cyber Security Engineering Core	2	CYSE 491 Engineering Senior Seminar	DEGREE	
40	Cyber Security Engineering Core	3	CYSE 493 Senior Advanced Design Project II	DEGREE	
41	Cyber Security Engineering Core - Technical Electives	3	Technical Elective**	DEGREE	
42	Cyber Security Engineering Core - Technical Electives	3	Technical Elective**	DEGREE	
B.S. CYBER SECURITY ENGINEERING DEGREE		130			
TOTAL					

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

*CYSE courses are only offered once a year, see Mason academic advisor to create an academic plan.

**For approved Technical Elective courses, please visit –

<https://catalog.gmu.edu/colleges-schools/engineering/cyber-security-engineering-bs/#requirements>

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