

ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Engineering /
B.S. Cybersecurity Engineering Pathway
2020-2021

A.S. Engineering

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 MTT or ENF courses (excluding summer).
4. 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.
 - 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.
7. Students must apply for NOVA graduation and complete their Associate's degree.

	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 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
5	EGR 121	2	EGR 121 Foundations of Engineering	ENGR 107	Major
6	CST Course	3	CST 100 Principles of Public Speaking OR CST 110 Introduction to Communication	COMM 100 COMM 101	Oral Comm
7	Technical Elective #1	3	CYSE 101 Intro to Cyber Security Engineering*	CYSE 101	Major
8	ENG 112	3	ENG 112 College Composition II	ENGH XXX	Elective
9	MTH 264	4	MTH 264 Calculus II	MATH 114	Major
10	Humanities/Fine Arts #1	3	ART 100 Art Appreciation OR 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 101 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	Major
13	Technical Elective #2	4	CSC 201 Computer Science I	CS 112	Info Tech
14	Technical Elective #3	3	MTH 266 Linear Algebra	MATH 203	Major
15	PHY 231	5	PHY 231 General University Physics I	PHYS 160-161-266	Nat Science
16	Humanities/Fine Arts #2	3	ENG 236 Introduction to the Short Story OR ENG 241 Survey of American Literature I OR ENG 242 Survey of American Literature II OR ENG 251 Survey of World Literature I OR ENG 252 Survey of World Literature II OR ENG 253 Survey of African-American Literature I	ENGH 202	Literature
17	Technical Elective #4	3	SYST 205 Systems Engineering Principles	SYST 205	Major
18	PHY 232	5	PHY 232 General University Physics II	PHYS 260-261-XXX	Nat Science
19	Technical Elective #5	4	EGR 265 Digital Electronics and Logic Design	ECE 301	Major

20	Technical Elective #6	3	CS 222 Computer Programming for Engineers	CS 222	Major
21	MTH 267	3	MTH 267 Differential Equations	MATH 214	Major

A. S. ENGINEERING DEGREE TOTAL 69

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

B.S. Cyber Security Engineering

	MASON DEGREE REQUIREMENT	Credits	Course		MASON CORE/DEGREE EQUIVALENT
22	Mathematics and Statistics	3	STAT 344 Probability and Statistics for Engineers		Major
23	Gen Ed: Global Understanding	3	Approved Global Understanding course**		Global
24	Cyber Security Engineering Core	3	CYSE 211 Operating Systems & Lab*		Major
25	Computing	4	SYST 230 Object-Oriented Modeling and Design		Major
26	Cyber Security Engineering Core	3	CYSE 230 Computer Networking		Major
27	Cyber Security Engineering Core	3	CYSE 325 Discrete Events Systems Modeling		Major
28	Gen Ed: Written Communication (UL)	3	ENGH 302 Advanced Composition (Natural Science Section)		Written Comm
29	Mathematics and Statistics	3	MATH 125 Discrete Math		Major
30	Cyber Security Engineering Core	3	CYSE 425 Secure RF Communications		Major
31	Cyber Security Engineering Core	3	CYSE 411 Secure Software Engineering		Major
32	Cyber Security Engineering Core	3	CYSE 421 Industrial Control Systems (ICS) Security		Major
33	Cyber Security Engineering Core	3	CYSE 430 Critical Infrastructure Protection		Major
34	Cyber Security Engineering Core	3	CYSE 470 User Experience Engineering		Major
35	Cyber Security Engineering Core	4	CYSE 445 Systems Security and Resilience AND CYSE 450 Cyber Vulnerability Lab		Major
36	Cyber Security Engineering Core	3	CYSE 476 Cryptography Fundamentals		Major
37	Cyber Security Engineering Core - Technical Electives	3	Technical Elective***		Major
38	Cyber Security Engineering Core	2	CYSE 492 Senior Advance Design Project I		Major
39	Cyber Security Engineering Core	2	CYSE 491 Engineering Senior Seminar		Writing Intensive
40	Gen Ed: Synthesis/Cyber Security Engineering Core	3	CYSE 493 Senior Advanced Design Project II		Synthesis
41	Cyber Security Engineering Core - Technical Electives	3	Technical Elective***		Major
42	Cyber Security Engineering Core - Technical Electives	3	Technical Elective***		Major

B.S. CYBER SECURITY ENGINEERING DEGREE TOTAL 132

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 Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>. If ADVANCE students have at least a 2.85 GPA at the time of matriculation to Mason, students will receive a General Education waiver and do not need to take this course. Please see your Success Coach for more information.

***For approved Technical Elective courses, please visit - <https://catalog.gmu.edu/colleges-schools/engineering/cyber-security-engineering/cyber-security-engineering-bs/>

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.