

ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Engineering/B.S. Cyber Security
Engineering

2019-20

A.S. Engineering Pathway

2019-2020

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 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 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 121	2	EGR 121 Foundations of Engineering	ENGR 107 DEGREE
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 DEGREE
8	ENG 112	3	ENG 112 College Composition II	ENGH XXX Elective
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	SYST 205 Systems Engineering Principles	SYST 205 DEGREE
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 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		69		

	MASON DEGREE REQUIREMENT SEQUENCE	Credits	Course	MASON CORE/DEGREE EQUIVALENT
22	Mathematics and Statistics	3	STAT 344 Probability and Statistics for Engineers	DEGREE
23	Gen Ed: Literature	3	Approved Literature course*	Literature
24	Cyber Security Engineering Core	3	CYSE 211 Operating Systems & Lab**	DEGREE
25	Cyber Security Engineering Core	3	CYSE 220 Systems Modeling	DEGREE
26	Cyber Security Engineering Core	3	CYSE 230 Computer Networking	DEGREE
27	Cyber Security Engineering Core	3	CYSE 325 Discrete Events Systems Modeling	DEGREE
28	Gen Ed: Written Communication (UL)	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
29	Cyber Security Engineering Core	3	CYSE 330 Intro to Network Security	DEGREE
30	Cyber Security Engineering Core	3	CYSE 425 Secure RF Communications	DEGREE
31	Cyber Security Engineering Core	3	CYSE 411 Secure Software Engineering	DEGREE
32	Cyber Security Engineering Core	3	CYSE 421 Industrial Control Systems (ICS) Security	DEGREE
33	Cyber Security Engineering Core	3	CYSE 430 Critical Infrastructure Protection	DEGREE
34	Cyber Security Engineering Core	3	CYSE 470 User Experience Engineering	DEGREE
35	Cyber Security Engineering Core	4	CYSE 445 Systems Security and Resilience AND CYSE 450 Cyber Vulnerability Lab	DEGREE
36	Cyber Security Engineering Core	3	CYSE 476 Cryptography Fundamentals	DEGREE
37	Cyber Security Engineering Core - Technical Electives	3	Technical Elective***	DEGREE
38	Cyber Security Engineering Core	2	CYSE 492 Senior Advance Design Project I	DEGREE
39	Cyber Security Engineering Core	3	CYSE 475 Cyber Physical Systems	DEGREE
40	Cyber Security Engineering Core	2	CYSE 491 Engineering Senior Seminar	Writing Intensive
41	Gen Ed: Synthesis/Cyber Security Engineering Core	3	CYSE 493 Senior Advanced Design Project II	Synthesis
42	Cyber Security Engineering Core - Technical Electives	3	Technical Elective***	DEGREE
43	Cyber Security Engineering Core - Technical Electives	3	Technical Elective***	DEGREE
B.S. CYBER SECURITY ENGINEERING DEGREE TOTAL		134		

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

*For approved Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>

**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/#requirementstext>

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