ADVANCE
A NOVA | MASON PARTNERSHIP

A.S. Engineering/B.S. Systems Engineering

2018-19

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	Quant
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	**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
8	**ENG Course**	3	ENG 125 Introduction to Literature	ENGH 201	Literature
9	**MTH 264**	4	MTH 264 Calculus II	MATH 114	DEGREE
10	**PHY 231**	5	PHY 231 General University Physics I	PHYS 160-161-266	NAT SCIENCE
11	**Technical Elective #1**	3	SYST 101 Understanding Systems Engineering	SYST 101	NAT SCIENCE
12	**Social/Behavioral Sciences #2**	3	ECO 202 Principles of Microeconomics	ECON 103	Soc/Behav
13	**MTH 265**	4	MTH 265 Calculus III	MATH 213	DEGREE
14	**Technical Elective #2**	4	CSC 201 Computer Science I	CS 112	DEGREE
15	**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
16	**Technical Elective #3**	3	SYST 210 Systems Design	SYST 210	DEGREE
17	**Technical Elective #4**	4	CSC 202 Computer Science II	CS 211	DEGREE
18	**PHY 232**	5	PHY 232 General University Physics II	PHYS 260-261-XXX	DEGREE
19	**Technical Elective #5**	4	PHYS262/263 or CHEM 211/213 or CHEM 251 or BIOL 213	PHYS262/263 or CHEM 211/213 or CHEM 251 or BIOL 213	NAT SCIENCE/DEGREE
20	**Technical Elective #6**	3	MTH 285 Linear Algebra	MATH 203	DEGREE
21	**MTH 267**	3	MTH 267 Differential Equations	MATH 214	DEGREE
	A. S. ENGINEERING DEGREE TOTAL	**70**			

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

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	**Systems Engineering**	4	SYST 220 Dynamical Systems I **AND** SYST 221 Systems Modeling Laboratory	DEGREE
23	**Gen Ed: Written Communication (Upper level)**	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
24	**Mathematics and Statistics**	3	STAT 344 Probability and Statistics for Engineers	DEGREE
25	**Systems Engineering**	3	SYST 320 Dynamical Systems II	DEGREE
26	**Plan Specific #15**	3	OR 441 Deterministic Operations Research	DEGREE
27	**Technical Emphasis Areas**	3	Technical Elective*	DEGREE
28	**Mathematics and Statistics**	3	STAT 354 Probability & Statistics for Engrs & Scientists II	DEGREE
29	**Systems Engineering**	3	SYST 330 Systems Methods	DEGREE
30	**Systems Engineering**	3	SYST 335 Discrete Systems Modeling & Simulation	DEGREE
31	**Systems Engineering**	3	SYST 371 Systems Engineering Management	DEGREE
32	**Systems Engineering**	3	SYST 395 Applied Systems Engineering	DEGREE
33	**Systems Engineering**	3	SYST 470 Human Factors Engineering	DEGREE
34	**Systems Engineering**	3	SYST 473 Decision and Risk Analysis	DEGREE
35	**Systems Engineering**	3	SYST 489 Senior Seminar	DEGREE
36	**Systems Engineering**	3	SYST 490 Senior Design Project I	DEGREE
37	**Technical Emphasis Areas**	3	Technical Elective*	DEGREE
38	**Systems Engineering/Synthesis**	3	SYST 495 Senior Design Project II	DEGREE
39	**Systems Engineering**	3	OR 442 Stochastic Operations Research	DEGREE
40	**Technical Emphasis Areas**	3	Technical Elective*	DEGREE
B.S. SYSTEMS ENGINEERING DEGREE TOTAL		**128**		

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

As an alternative to REL 100/231 for Gen Ed: Humanities/Fine Arts #2, NOVA students could take SYST 202 Engineering Systems in a Complex World at Mason

***For approved Technical Electives, please visit - https://catalog.gmu.edu/colleges-schools/engineering/systems-operations-research/systems-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