ADVANCE
A NOVA | MASON PARTNERSHIP

A.S. Engineering /
B.S. Mechanical 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	**CST Course**	3	CST 100 Principles of Public Speaking **OR** CST 110 Introduction to Communication	COMM 100 COMM 101	Oral Comm
6	**Technical Elective #1**	4	CHM 111 College Chemistry I	CHEM 211-213	Nat Science
7	**ENG 112**	3	ENG 112 College Composition II	ENGH XXX	Elective
8	**EGR 122**	3	EGR 122 Engineering Design	ME 151	Major
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	EGR 240 Solid Mechanics (Statics)	ME 211	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	EGR 246 Mechanics of Materials	CEIE L310 or ME 212	Major
18	**PHY 232**	5	PHY 232 General University Physics II	PHYS 260-261-XXX	Major

19	**Technical Elective #5**	3	EGR 245 Engineering Mechanics (Dynamics)	ME 231	Major
20	**Technical Elective #6**	3	EGR 248 Thermodynamics	ME 221	Major
21	**MTH 267**	3	MTH 267 Differential Equations	MATH 214	Major
A. S. ENGINEERING DEGREE TOTAL		**70**			

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

B.S. Mechanical Engineering

	MASON DEGREE REQUIREMENT	Credits	Course		MASON CORE/DEGREE EQUIVALENT
22	**Engineering**	3	ECE 330 Circuit Theory	Fall Only	Major
23	**Gen Ed: Global Understanding**	3	Approved Global Understanding course*		Global
24	**Engineering**	3	Approved Math/Science course**		Major
25	**Engineering**	1	ME 311 Mechanical Experimentation I	Fall Only	Major
26	**Engineering**	3	ME 313 Material Science		Major
27	**Engineering**	3	ME 322 Fluid Mechanics		Major
28	**Engineering**	3	ME 341 Design of Mechanical Elements **OR** ME 342 Design of Thermal Systems		Major
29	**Engineering**	3	ME 351 Analytical Methods in Engineering		Major
30	**Gen Ed: Written Communication (UL)**	3	ENGH 302 Advanced Composition (Natural Science Section)		Written Comm
31	**Engineering**	3	ME 331 Mechatronics	Spring Only	Major
32	**Engineering**	1	ME 321 Mechanical Experimentation II	Spring Only	Major
33	**Engineering**	3	ME 323 Heat Transfer	Spring Only	Major
34	**Engineering**	3	ME 352 Entrepreneurship in Engineering	Spring Only	Major
35	**Engineering**	3	ME 443 Mechanical Design I	Fall Only	Major
36	**Engineering**	2	ME 453 Developing the Societal Engineer	Fall Only	Major
37	**Elective**	3	300/400 Elective***		Major
38	**Elective**	3	300/400 Elective***		Major
39	**Elective**	3	300/400 Elective***		Major
40	**Elective**	3	300/400 Elective***		Major
41	**Engineering**	4	ME 432 Control Engineering		Major
42	**Gen Ed: Synthesis/Engineering**	3	ME 444 Mechanical Design II	Spring Only	Synthesis & Writing Intensive
B.S. MECH. ENGINEERING DEGREE TOTAL		**129**			

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/. If ADVANCE students have at least a 2.85 GPA at the time of matriculation to Mason, students will receive a lower-level General Education waiver and do not need to take this course. Please see your Success Coach for more information.**

****For approved Math/Science Electives, please visit: https://catalog.gmu.edu/colleges-schools/engineering/mechanical/mechanical-engineering-bs/#requirementstext**

*****For 300/400 Electives, any Mason course numbered 300 or higher can be used please visit: https://catalog.gmu.edu/**

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.