ADVANCE
A NOVA | MASON PARTNERSHIP

A.S. Engineering /
B.S. Computer 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**	4	CSC 201 Computer Science I	CS 112	Info Tech
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 202 Computer Science II	CS 211	Major
14	**Technical Elective #3**	3	ECE 101 Intro to Electrical and Computer Engineering	ECE 101	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 251 Basic Electric Circuits	See #20	Major
18	**PHY 232**	5	PHY 232 General University Physics II	PHYS 260-261-XXX	Nat Science

19	**Technical Elective #5**	3	EGR 252 Basic Electric Circuits II	See #20	Major
20	**Technical Elective #6**	1	EGR 255* Electric Circuits Laboratory	ECE 285 & ECE 286 & & ECE XXX	Major
21	**MTH 267**	3	MTH 267 Differential Equations	MATH 214	Major
A. S. ENGINEERING DEGREE TOTAL		**67**			

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

B.S. Computer Engineering

Students must choose one of the four technical specializations: Robotics, Embedded Systems, Computer Networks, Internet of Things, Hardware and System Security, Power and Energy Systems.
Note: Concentration requirements may also meet some or all of the Technical Elective requirements.

	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
22	**Computer Science**	3	CS 222 Computer Programming for Engineers	Major
23	**Gen Ed: Global Understanding**	3	Approved Global Understanding course**	Global
24	**Mathematics and Statistics**	3	MATH 125 Discrete Math	Major
25	**Mathematics and Statistics**	3	MATH 203 Linear Algebra	Major
26	**Computer Engineering**	3	ECE 201 Intro to Signal Analysis	Major
27	**Computer Engineering**	4	ECE 231 Digital System Design **AND** ECE 232 Digital Electrical and Logic Design Lab	Major
28	**Gen Ed: Written Communication (UL)**	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
29	**Computer Engineering**	3	ECE 350 Embedded Systems and Hardware Interfaces	Major
30	**Computer Engineering**	3	ECE 445 Computer Organization	Major
31	**Computer Engineering**	3	ECE 321 Continuous Time-Signal and Systems I	Major
32	**Computer Science**	3	CS 310 Data Structures	Major
33	**Mathematics and Statistics**	3	STAT 346 Probability for Engineers	Major
34	**Computer Science**	3	CS 471 Operating Systems	Major
35	**Physics**	4	ECE 333 Linear Electronics I **AND** ECE 334 Linear Electronics Lab I	Major
36	**Computer Engineering**	4	ECE 448 FPGA and ASIC Design w/ VHDL	Major
37	**Technical Electives**	3	Technical Elective***	Major
38	**Computer Engineering**	4	ECE 447 Single-Chip Microcomputers	Major
39	**Computer Engineering**	1	ECE 491 Engineering Seminar	Major
40	**Gen Ed: Synthesis/Computer Engineering**	1	ECE 492 Senior Advanced Design Project I	Synthesis
41	**Technical Electives**	3	Technical Elective***	Major
42	**Technical Electives**	3	Technical Elective***	Major
43	**Gen Ed: Synthesis/Computer Engineering**	2	ECE 493 Senior Design Project II	Synthesis
44	**Computer Engineering**	3	ECE 465 Computer Networking Protocols	Major
B.S. COMPUTER ENGINEERING DEGREE TOTAL		**135**		

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

***All associated lab courses must be "in-person". Hybrid or online formats will not be accepted.**

****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 Technical Electives, please visit - https://catalog.gmu.edu/colleges-schools/engineering/electrical-computer/computer-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.