

ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Engineering /
B.S. Electrical Engineering Pathway
2023-2024

A.S. Engineering

ADVANCE Program Milestones

ADVANCE Milestone Requirements: All ADVANCE students must adhere to the following requirements. For Milestones #1-#3, failure to meet these milestones will prevent a student from matriculating to Mason and/or result in termination from ADVANCE. For Milestones #4-#7, failure to meet these milestones may delay matriculation to Mason.

1. Students must complete their NOVA degree within 4 years of being admitted into ADVANCE. Students are highly encouraged to be continuously enrolled at NOVA/Mason to support progress towards degree completion.
2. Students must maintain a minimum 2.5 cumulative GPA at NOVA and must have a minimum 2.5 GPA upon matriculation to Mason.
3. Students who wish to enroll at Mason for the fall semester must apply for NOVA spring graduation by March 1 or summer graduation by June 1. Students who wish to enroll at Mason for the spring semester must apply for NOVA fall graduation by October 1.
4. Students must begin developmental coursework no later than the first semester in ADVANCE at NOVA.
5. Students must take first college-level MTH course and ENG 111 in the semester immediately following the completion of any MDE or EDE courses (excluding summer).
6. In the first 30 credits, students must complete ENG 111 and ENG 112 with a C or better.
7. Students must complete a Mason Core Quantitative Reasoning course equivalent with a C or better no later than one semester before NOVA graduation. Refer to your pathway to select the appropriate MTH course(s).

ADVANCE Program-Specific Requirements: All ADVANCE students in this degree program must adhere to the following requirements prior to matriculation. Failure to do so may prevent a student from matriculating into this program at Mason or progressing in coursework at Mason.

1. Engineering students must begin the calculus sequence within the first 30 credits and complete Calculus I and II with a B or better.

	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	General Elective
2	ENG 111	3	ENG 111 College Composition I ¹	ENGH 101	Written Comm
3	MTH 263	4	MTH 263 Calculus I	MATH 113	Quantitative
4	Technical Elective #1	3	CSC 221 Introduction to Problem Solving and Programming ²	CS XXX	Prerequisite
5	ECO 202	3	ECO 202 Principles of Microeconomics	ECON 103	Soc/Behav
6	EGR 121	2	EGR 121 Foundations of Engineering	ENGR 107	Major
7	ENG 112	3	ENG 112 College Composition II ¹	ENGH XXX	General Elective
8	MTH 264	4	MTH 264 Calculus II	MATH 114	Major
9	PHY 241 Required (NOVA Catalog: Lab Science #1)	4	PHY 241 University Physics I	PHYS 160-161	Nat Science
10	Technical Elective #2	4	CSC 222 Object Oriented Programming	CS 112	Info Tech
11	Humanities/Fine Arts #1	3	ART 100 Art Appreciation OR ART 101 History of Art: Prehistoric to Gothic OR ART 102 History of Art: Renaissance to Modern OR CST 130 Introduction to Theatre OR CST 151 Film Appreciation I OR MUS 121 Music in Society	ARTH 101 ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
12	PHY 242 Required (NOVA Catalog: Lab Science #2)	4	PHY 242 University Physics II	PHYS 260-261	Nat Science
13	Technical Elective #3	4	EGR 271 Electric Circuits I ²	ECE 285	Major
14	Technical Elective #4	3	CST 100 Principles of Public Speaking OR CST 110 Introduction to Human Communication	COMM 100 COMM 101	Oral Comm
15	MTH 267	3	MTH 267 Differential Equations	MATH 214	Major
16	HIS Course	3	HIS 101 Western Civilizations Pre-1600 CE OR HIS 102 Western Civilizations Post-1600 CE OR HIS 112 World Civilizations Post-1500 CE (<i>recommended</i>)	HIST 101 HIST 102 HIST 125	Global History

17	Humanities/Fine Arts #2	3	ENG 225 Reading Literature: Culture and Ideas OR ENG 245 British Literature OR ENG 246 American Literature OR ENG 255 World Literature OR ENG 258 African American Literature OR ENG 275 Women in Literature OR Any 200-Level ENG Literature course ³	ENGH 202 or FRLN L330 (ENG 255 only)	Literature
18	MTH 265	4	MTH 265 Calculus III	MATH 213	Major
19	Technical Elective #5	4	EGR 272 Electric Circuits II	ECE 286	Major
20	Technical Elective #6	3	ECE 201 Intro to Signals and Systems ⁴	ECE 201	Major
21	Technical Elective #7	4	EGR 270 Fundamentals of Computer Engineering	ECE 232/231	Major
A. S. ENGINEERING DEGREE		69			
TOTAL					
For academic policies and procedures, please see NOVA catalog - http://www.nvcc.edu/catalog/index.html					
B.S. Electrical Engineering					
Concentrations: Communications and Signal Processing; Controls and Robotics, Electronics; Embedded Systems; Internet of Things; Power and Energy Systems; Space-based Systems <i>Concentration requirements may also meet some or all of the Advanced Engineering Lab and Technical Elective requirements.</i>					
MASON DEGREE REQUIREMENT		Credits	Course	MASON CORE/DEGREE EQUIVALENT	
22	Computer Science	3	ECE 240 C Programming for Engineers	Major	
23	Electrical Engineering	0-3	ECE 101 Intro to Electrical and Computer Engineering ² <i>(This course can be waived if students have completed EGR 271 prior to transferring; See: Advisor)</i>	Major	
24	Mathematics and Statistics	3	MATH 203 Linear Algebra	Major	
25	Electrical Engineering	3	ECE 321 Continuous Time-Signal and Systems	Major	
26	Gen Ed: Written Communication (Upper-level)	3	ENGH 302 Advanced Composition (Natural Science or Multi-Disciplinary Section)	Written Comm	
27	Electrical Engineering	3	ECE 421 Classical Systems and Control Theory	Major	
28	Electrical Engineering	4	ECE 333 Linear Electronics I AND ECE 334 Linear Electronics Lab I	Writing Intensive	
29	Mathematics and Statistics	3	STAT 346 Probability for Engineers	Major	
30	Electrical Engineering	3	ECE 350 Embedded Systems and Hardware Interfaces	Major	
31	Electrical Engineering	3	ECE 433 Linear Electronics II	Major	
32	Gen Ed: Global Understanding	3	Approved Global Understanding course ⁵	Global Understanding	
33	Electrical Engineering	3	ECE 445 Computer Organization	Major	
34	Electrical Engineering	3	ECE 460 Communication and Information Theory	Major	
35	Advanced Engineering Labs	1	Advanced Engineering Lab ⁶	Major	
36	Technical Electives	3	Technical Elective ⁶	Major	
37	Electrical Engineering	3	ECE 305 Electromagnetic Theory	Major	
38	Electrical Engineering	1	ECE 491 Engineering Seminar	Major	
39	Gen Ed: Synthesis/Electrical Engineering	1	ECE 492 Senior Advanced Design Project I	Synthesis	
40	Advanced Engineering Labs	1	Advanced Engineering Lab ⁶	Major	
41	Technical Electives	3	Technical Elective ⁶	Major	
42	Technical Electives	3	Technical Elective ⁶	Major	
43	Gen Ed: Synthesis/Electrical Engineering	2	ECE 493 Senior Design Project II	Synthesis	
44	Physics	4	PHYS 262 University Physics III AND PHYS 263 University Physics III Lab	Major	

B.S. ELECTRICAL**ENGINEERING DEGREE****128 - 131****TOTAL**

Denotes a course that must be taken at George Mason University while attending NOVA. Failure to complete your co-enrollment course(s) while attending NOVA can significantly affect your timeline for Mason graduation. Please see your ADVANCE Coach for more information and to enroll.

Important Academic Information:

¹Students who complete ENG 111 after Spring 2024 will earn ENGH elective for ENG 111 and ENGH 101 for ENG 112.

²Students must complete EGR 271 and CSC 221 prior to transfer to receive a waiver of ECE 101. See Mason advisor post-transfer for more information.

³200-level ENG literature classes include: ENG 225, ENG 230, ENG 236, ENG 237, ENG 245, ENG 246, ENG 250, ENG 255, ENG 256, ENG 257, ENG 258, ENG 271, ENG 275, and ENG 279.

⁴To enroll in ECE 201, students must contact eceugrad@gmu.edu to request a pre-requisite override.

⁵For approved Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>. Students with a completed AS, AA, or AFA degree are eligible for a waiver of the Foundation and Exploration (lower division) Mason Core general education categories and do not need this course. Please see your ADVANCE Coach for more information.

⁶For approved Technical Electives or Advanced Engineering Lab courses, please visit - <https://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/electrical-engineering-bs/#requirementstext>. Students pursuing an Accelerated Master's program should consult with their Mason academic advisor to when selecting technical electives.

Additional General Notes & Resources:

- For more information about Accelerated Master's program options, visit: <https://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/electrical-engineering-bs/#acceleratedmasterstext>. Students interested in an Accelerated Master's should consult their Mason academic advisor in their first term after matriculation regarding program benefits, admission criteria, and application process.
- Students who complete a VCCS transfer associate degree (AS, AA, & AFA) will receive a waiver of the Foundation and Exploration (lower division) Mason Core general education categories. To be eligible for the waiver, the students must provide the Mason Office of Admissions with a final, official transcript reflecting the degree conferral date. As a prerequisite for ENGH 302, ENGH 101 is not waived. Students must complete ENGH 100 or ENGH 101, or an equivalent, with a C or higher.
- 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.