

# ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Engineering /  
B.S. Electrical Engineering Pathway  
**2020-2021**

## A.S. Engineering

### ADVANCE Program Milestones

- Students must take SDV 100 or SDV 101 in the first semester at NOVA.
- Students must begin Developmental coursework in the first semester in ADVANCE at NOVA.
- 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).
- In the first 30 credits, students must:
  - Complete ENG 111 and ENG 112 with a C or better.
  - Complete the first college-level MTH course with a C or better.
  - Engineering students must begin the calculus sequence and complete Calculus I and II with a B or better.
- Students must complete at least six degree-applicable credits with a C or better each fall and spring semester.
- Students must maintain a 2.5 cumulative GPA.
- 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 <b>OR</b> SDV 101 Orientation to Engineering	UNIV 100	ELECTIVE
2	ENG 111	3	ENG 111 College Composition I	ENGH 101	Written Comm
3	Social/Behavioral Science #1	3	HIS 101 History of Western Civilization I <b>OR</b> HIS 102 History of Western Civilization II <b>OR</b> 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 <b>OR</b> CST 110 Introduction to Communication	COMM 100 COMM 101	Oral Comm
7	ENG 112	3	ENG 112 College Composition II	ENGH XXX	Elective
8	MTH 264	4	MTH 264 Calculus II	MATH 114	Major
9	PHY 231	5	PHY 231 General University Physics I	PHYS 160-161-266	Nat Science
10	Technical Elective #1	3	ECE 101 Intro to Electrical and Computer Engineering	ECE 101	Major
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	Humanities/Fine Arts #1	3	ART 100 Art Appreciation <b>OR</b> ART 101 History and Appreciation of Art I <b>OR</b> ART 102 History and Appreciation of Art II <b>OR</b> CST 130 Introduction to Theatre <b>OR</b> CST 151 Film Appreciation I <b>OR</b> MUS 121 Music Appreciation I	ARTH 101 ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
15	PHY 232	5	PHY 232 General University Physics II	PHYS 260-261-XXX	Nat Science
16	MTH 267	3	MTH 267 Differential Equations	MATH 214	Major
17	Technical Elective #3	3	EGR 251 Basic Electric Circuits	See #21	Major
18	Humanities/Fine Arts #2	3	ENG 236 Introduction to the Short Story <b>OR</b> ENG 241 Survey of American Literature I <b>OR</b> ENG 242 Survey of American Literature II <b>OR</b> ENG 251 Survey of World Literature I <b>OR</b> ENG 252 Survey of World Literature II <b>OR</b> ENG 253 Survey of African-American Literature I	ENGH 202	Literature

19	Technical Elective #4	3	EGR 252 Basic Electric Circuits II	See #21	Major
20	Technical Elective #5	3	ECE 201 Intro to Signal Analysis	ECE 201	Major
21	Technical Elective #6	1	EGR 255* Electric Circuits Laboratory	ECE 285 & ECE 286 & ECE XXX	Major

#### A. S. ENGINEERING DEGREE

**TOTAL** 66

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

### B.S. Electrical Engineering

**Concentrations:** Bioengineering, Communications and Signal Processing, Computer Engineering, Control Systems, Electronics, Power and Energy Systems. Concentration requirements may also meet some or all of the Advanced Engineering Lab and Technical Elective requirements.

	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
22	Mathematics and Statistics	3	MATH 203 Linear Algebra	Major
23	Computer Science	3	CS 222 Computer Programming for Engineers	Major
24	Gen Ed: Global Understanding	3	Approved Global Understanding course**	Global
25	Electrical Engineering	4	ECE 231 Digital System Design <b>AND</b> ECE 232 Digital Electrical and Logic Design Lab	Major
26	Electrical Engineering	3	ECE 321 Continuous Time-Signal and Systems I	Major
27	Gen Ed: Written Communication (UL)	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
28	Electrical Engineering	3	ECE 421 Classical Systems and Control Theory	Major
29	Electrical Engineering	4	ECE 333 Linear Electronics I <b>AND</b> ECE 334 Linear Electronics Lab I	Writing Intensive
30	Mathematics and Statistics	3	STAT 346 Probability for Engineers	Major
31	Electrical Engineering	3	ECE 350 Embedded Systems and Hardware Interfaces	Major
32	Electrical Engineering	3	ECE 433 Linear Electronics II	Major
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***	Major
36	Technical Electives	3	Technical Elective***	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**	Major
41	Technical Electives	3	Technical Elective***	Major
42	Technical Electives	3	Technical Elective***	Major
43	Gen Ed: Synthesis/Electrical Engineering	2	ECE 493 Senior Design Project II	Synthesis
44	Physics	4	PHYS 262 University Physics III <b>AND</b> PHYS 263 University Physics III Lab	Major

#### B.S. ELECTRICAL

**ENGINEERING DEGREE TOTAL** 129

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 or Advance Engineering Lab courses, please visit -

<https://catalog.gmu.edu/colleges-schools/engineering/electrical-computer/electrical-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.