

# ADVANCE

A NOVA | MASON PARTNERSHIP

A.S. Engineering/B.S. Bioengineering

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 <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 Sciences #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	Quant
5	EGR 120	2	EGR 120 Introduction to Engineering	ENGR 107	DEGREE
6	CST Course	3	CST 100 Principles of Public Speaking <b>OR</b> CST 110 Introduction to Communication <b>OR</b> CST 126 Interpersonal Communication	COMM 100 COMM 101 COMM 101	Oral Comm
7	Technical Elective #1	4	CHM 111 College Chemistry I	CHEM 211-213	NAT SCIENCE
8	ENG Course	3	ENG 125 Introduction to Literature	ENGH 201	Literature
9	MTH 264	4	MTH 264 Calculus II	MATH 114	DEGREE
10	Humanities/Fine Arts #1	3	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 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
11	Social/Behavioral Sciences #2	3	ECO 202 Principles of Microeconomics <b>OR</b> PSY 200 Principles of Psychology <b>OR</b> SOC 200 Principles of Sociology	ECON 103 PSYC 100 SOCI 101	Soc/Behav
12	MTH 265	4	MTH 265 Calculus III	MATH 213	DEGREE
13	Technical Elective #2	4	CSC 201 Computer Science I	CS 112	DEGREE
14	Technical Elective #3	3	<b>BENG 101 Intro to Bioengineering</b>	<b>BENG 101</b>	DEGREE
15	PHY 231	5	PHY 231 General University Physics I	PHYS 160-161-266	NAT SCIENCE
16	Humanities/Fine Arts #2	3	REL 100 Introduction to the Study of Religion <b>OR</b> REL 231 Religions of the World I	RELI 100 RELI 212	Global
17	Technical Elective #4	3	<b>BENG 220 Physical Bases of Biomedical Systems</b>	<b>BENG 220</b>	DEGREE
18	PHY 232	5	PHY 232 General University Physics II	PHYS 260-261-XXX	DEGREE
19	Technical Elective #5	3	<b>MATH 203 Linear Algebra (BENG Section only)</b>	<b>MATH 203</b>	DEGREE
20	Technical Elective #6	3	CSC 202 Computer Science II	CS 211	DEGREE
21	MTH 267	3	MTH 267 Differential Equations	MATH 214	DEGREE
<b>A. S. ENGINEERING DEGREE TOTAL</b>		<b>69</b>			

**Students may select a concentration:**

Bioengineering Healthcare Informatics, Bioengineering Prehealth, Biomedical Signals and Systems

**NOTE: To fulfill the requirements for both Bioengineering Bachelor of Science degree and the Prehealth or Health Care Informatics concentrations, additional credits beyond 120 hours are required.**

MASON DEGREE REQUIREMENT SEQUENCE		Credits	Course	MASON CORE/DEGREE EQUIVALENT
22	Biology	4	BIOL 213 Cell Structure and Function	DEGREE
23	Biology	3	BENG 313 Physiology for Engineers	DEGREE
24	Physics or Chemistry	4	PHYS 262 University Physics III <b>AND</b> PHYS 263 University Physics III Lab <b>OR</b> CHEM 212 General Chemistry II <b>AND</b> CHEM 214 General Chemistry Lab II	DEGREE
25	Gen Ed: Written Communication (Upper level)	3	ENGH 302 Advanced Composition (Natural Science Section)	Written Comm
26	Bioengineering	3	BENG 320 Bioengineering Signals & Systems	DEGREE
27	Bioengineering	4	BENG 380 Intro to Circuits and Electronics <b>AND</b> BENG 381 Circuits and Electronics Lab	DEGREE
28	Mathematics and Statistics	3	STAT 344 Probability and Statistics for Engineers	DEGREE
29	Bioengineering	4	BENG 301 Bioengineering Measurements <b>AND</b> BENG 302 Bioengineering Measurements Lab	DEGREE
30	Bioengineering	3	BENG 304 Modeling & Control of Physiological Systems	DEGREE
31	Concentrations	3	ECE 301 Digital Electronics	DEGREE
32	Bioengineering	1	BENG 491 Bioengineering Senior Seminar	DEGREE
33	Bioengineering/Synthesis	2	BENG 492 Senior Advanced Design Project I	DEGREE
34	Bioengineering	3	BENG 420 Bioinformatics for Engineers	DEGREE
35	Concentrations	3	Technical Elective*	DEGREE
36	Concentrations	3	Technical Elective*	DEGREE
37	Bioengineering	1	BENG 495 Bioengineering Senior Seminar II	DEGREE
38	Bioengineering/Synthesis	2	BENG 493 Senior Advanced Design Project II	DEGREE
39	Concentrations	3	Technical Elective*	DEGREE
40	Concentrations	3	Technical Elective*	DEGREE
<b>B.S. BIOENGINEERING DEGREE TOTAL</b>		<b>124</b>		

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

\*For approved Technical Electives, please visit –

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