

## A.S. Biology

### 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-#6, 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 graduation by March 1 for spring graduation or June 1 for summer graduation. Students who wish to enroll at Mason for the spring semester must apply for NOVA graduation by October 1 for winter graduation.
4. Students must begin developmental coursework in 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:
  - 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.

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 XXX	UNIV 100	General Elective
2 ENG 111	3	ENG 111 College Composition I	ENGH 101	Written Comm
3 MTH 167	5	MTH 167 Pre-Calculus with Trigonometry <sup>1</sup>	MATH 105	General Elective
4 CHM 111	4	CHM 111 General Chemistry I	CHEM 211-213	Major
5 HIS Elective	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
6 ENG 112	3	ENG 112 College Composition II	ENGH XXX	General Elective
7 MTH 263	4	MTH 263 Calculus I	MATH 113	Quantitative
8 CHM 112	4	CHM 112 General Chemistry II	CHEM 212-214	Major
9 BIO 101	4	BIO 101 General Biology I <sup>2</sup>	BIOL 103/105	Nat Science
10 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
11 MTH 245 or MTH 264	3-4	MTH 245 Statistics I <b>OR</b> MTH 264 Calculus II <sup>3</sup>	STAT 250 MATH 114	General Elective
12 PHY 201 (NOVA Catalog: BIO 102 or BIO 120)	4	PHY 201 General College Physics I <sup>2</sup>	PHYS 243-244	Major
13 CST Course	3	CST 100 Principles of Public Speaking <b>OR</b> CST 110 Introduction to Communication	COMM 100 COMM 101	Oral Comm
14 Social/Behavioral Sciences #1	3	ECO 201 Principles of Macroeconomics <b>OR</b> ECO 202 Principles of Microeconomics <b>OR</b> HIS 121 United States History I <b>OR</b> HIS 122 United States History II <b>OR</b> PSY 200 Principles of Psychology <b>OR</b> PSY 230 Developmental Psychology <b>OR</b> SOC 200 Principles of Sociology <b>OR</b> SOC 211 Principles of Anthropology I	ECON 104 ECON 103 HIST 121 HIST 122 PSYC 100 PSYC 211 SOCI 101 ANTH 114	Soc/Behav

15	BIO 206	4	BIO 206 Cell Biology	BIOL 213	Major
16	MTH 245 or Lab Science	4	PHY 202 General College Physics II <sup>2</sup>	PHYS 245-246	Major
17	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
18	Social/Behavioral Sciences #2	3	GEO 220 World Regional Geography <b>OR</b> PLS 140 Introduction to Comparative Politics <b>OR</b> PLS 241 International Relations I	GGs 101 GOVT 133 GOVT 132	Global & COS Soc/Behav

**A.S. BIOLOGY DEGREE TOTAL 60-62**

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

## B.S. Biology

**Concentrations:** Bioinformatics; Biopsychology; Biotechnology and Molecular Biology; Environmental and Conservation Biology; Microbiology  
**NOTE:** Concentration selection will effect Biology elective coursework and may require more than the posted total credits. See Academic Advisor to discuss graduation plan.

MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT	
19	Physics	0-4	PHY 245 College Physics II and PHYS 246 College Physics II Lab <b>OR</b> General Elective ( <i>if Physics sequence complete at NOVA</i> ) (See: Advisor)	Major or General Elective
20	Biology Core Courses	4	BIOL 214 Biostatistics for Biology Majors	Major
21	Biology Core Courses	4	BIOL 311 General Genetics	Major
22	Chemistry	5	CHEM 313 Organic Chemistry I <b>AND</b> CHEM 315 Organic Chemistry Lab I	Major
23	Gen Ed: Written Communication (Upper-level)	3	ENGH 302 Advanced Composition	Written Comm
24	Biology Core Courses	0-4	BIOL 300 BioDiversity <i>This course is not needed if students complete BIO 110 and BIO 120 at NOVA</i>	Major
25	Chemistry	5	CHEM 314 Organic Chemistry II <b>AND</b> CHEM 318 Organic Chemistry Lab II	Major
26	Biology Core Courses	5	BIOL 308 Foundations of Ecology & Evolution	Major
27	Gen Ed: Synthesis	3	Approved Synthesis Course <sup>4</sup>	Synthesis
28	Biology Electives or Concentration Requirements	4	Biology Electives <sup>5</sup> (Upper-level)	Major
29	Biology Electives or Concentration Requirements	4	Biology Electives with Lab <sup>5</sup> (Upper-level)	Major
30	Biology Electives or Concentration Requirements	4	Biology Electives <sup>5</sup> (Upper-level)	Major
31	Biology Electives/Concentration Requirements or General Elective	3-4	Biology Electives <sup>5</sup> (Upper level) <b>OR</b> General Elective (Upper level, See: Advisor)	Major or General Elective
32	Biology Electives or Concentration Requirements	4	Biology Electives with Lab <sup>5</sup> (Upper-level)	Major
33	Biology Electives/Concentration Requirements	3	Biology Electives <sup>5</sup>	Major
34	Gen Ed: Information Technology	3	CDS 130 Computing for Scientists	Info Tech
35	General Elective	0-2	General Electives (See: Advisor) as needed to reach 120 total credits	Major

**B.S. BIOLOGY DEGREE TOTAL 120-122**

**Important Academic Information:**

<sup>1</sup>Students who place directly into MTH 263 should take an extra lab science from the following courses: BIO 102, BIO 110, BIO 120, GOL 105 or GOL 106.

<sup>2</sup>Students should prioritize completing BIO 101 and the Physics sequence (PHY 201/202). However, if a student has already taken BIO 110, students should take BIO 110, BIO 120, and PHY 201.

<sup>3</sup>Students pursuing careers that blend biology with data science or engineering or who may be pursuing graduate school in a field that requires more computational knowledge should take MTH 264 (Calculus II). Please consult with a Mason Biology advisor [biology@gmu.edu](mailto:biology@gmu.edu) if you need further guidance on whether MTH 245 or MTH 264 is preferable.

<sup>4</sup>For approved Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>

<sup>5</sup>At least 15 credits must be upper division, and at least two of the upper division courses must include a laboratory. Concentration selection may prescribe elective coursework. (See: <https://catalog.gmu.edu/colleges-schools/science/biology/biology-bs/#requirementstext>)

**Additional General Notes & Resources:**

- Students interested in Pre-Health Professions (Pre-Med, Pre-Dentistry, Pre-Podiatry, Pre-Optometry, Pre-Veterinary, Pre-Pharmacy, Pre-Physician Assistant, Pre-Occupational Therapy, and Pre-Physical Therapy) are strongly encouraged to meet with the Health Professions Advisor regarding the appropriate prerequisite courses for their field of choice. For more information, please visit: <https://prehealth.gmu.edu/>
- Students interested in pursuing licensure to teach at the secondary level may add the Undergraduate Certificate: Secondary Education - Biology to this degree. For more information visit: <https://education.gmu.edu/secondary-education-6-12/academics/>. Some certificate courses can be used to fulfill general elective requirements, but additional credits may be needed to complete the certificate. Students interested in teacher licensure should meet with a Mason pre-teacher advisor. Contact information: <https://cehd.gmu.edu/teacher/advising/advising-appointment/>
- ADVANCE students who earn at least a 2.85 cumulative GPA and no more than 9 credits of unrepeated D/F grades may be eligible to receive a waiver for any lower-level Mason Core courses not already completed. To be eligible for the core waiver, students must also complete the requirements of the AA or AS degree listed on their pathway, and apply to graduate from NOVA by the deadline (see milestone #3). Students must meet these criteria by the time of matriculation to Mason and provide the Office of Admissions a final, official transcript reflecting the degree conferral date.
- 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.