

Name:

Date Drafted:

Molecular Genetics Major

UVM | College of Agriculture and Life Sciences | Department of Microbiology and Molecular Genetics

Advising Form 2025-2026

Graduates of this major will be able to:

- *Describe and apply basic molecular genetics information, concepts and experimental techniques*
- *Explain and evaluate molecular genetics research orally and in writing*
- *Demonstrate integrity, professionalism, and respect for inclusion in the conduct of science and learning*
- *Articulate own identity as a member of the scientific community and reflect on how that has developed throughout progression toward career goals*

UVM students meet the above goals by completion of at least 120 credits, including the Catamount Core Curriculum and MMG core coursework. Students then tailor their education to their interests, selecting from a variety of departmental courses and from a broad range of electives in the biological sciences. Students must maintain a minimum cumulative GPA of 2.0 to remain in good standing in the program and college.

This worksheet can be used to create a four-year pathway. Review with your advisor each semester.

Catamount Core Curriculum | 42 credits

Liberal Arts | 21 credits

Discipline	Credits	Course designations
Arts and Humanities	6	AH1, AH2, AH3
Social Sciences	6	S1
Natural Sciences	6	N1 and N2
Mathematics	3	MA

Core Skills | 9 credits

Discipline	Credits	Course designations
Quantitative and Data Literacy	3	QD
Writing and Information Literacy	3	WIL1
Oral Communication	3	OC

Common Ground Values | 12 credits

Discipline	Credits	Course designations
Diversity	6	Must take 3 credits of D1, and 3 credits D1 or D2
Sustainability	3	SU
Global Citizenship	3	GC1 or GC2

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MMG Departmental Core Requirements | 60 credits

Number	Name	Credits	Semester
MMG 1010	First-Year Colloquium	1	Fall
MMG 1020 (SU)	Unseen Worlds – Microbes and You	3	Fall
BCOR 1400 (NS)	Exploring Biology 1	4	Fall
BCOR 1450 (NS)	Exploring Biology 2	4	Spring
MATH 1212 or 1234 (MA)	Fundamentals of Calculus or Calculus 1	3 or 4	Any
CHEM 1400 (NS)	General Chemistry 1	4	Any
CHEM 1450 (NS)	General Chemistry 2	4	Any
CHEM 2580 (NS)	Organic Chemistry 1	4	Fall
CHEM 2585 (NS)	Organic Chemistry 2	4	Spring
CS 1210 (QD, IT)	Computer Programming 1 (also fulfills CALS IT requirement)	3	Any
MMG 2010 (NS)	Microbiology & Infectious Disease	4	Fall
MMG 2990	Scientific Literacy	1	Fall
MMG 2040 (NS)	Intro Molecular Genetics	4	Spring
MMG 2060	Intro to Biomedical Research Methods	3	Spring
BCOR 2300 (NS)	Genetics	3	Any
BCOR 2500 or BCOR 2505	Cell and Molecular Biology (with lab) Cell and Molecular Biology (without lab)	3 or 4	Any
BIOC 3001	Biochemistry	3	Any
BIOC 3005	Biochemistry 1	3	Fall
BIOC 3075	Biochemistry of Human Disease	3	Fall
STAT 1410	Basic Statistical Methods	3	Any
MMG 4899	Senior Seminar	1	Any

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Molecular Genetics Major Requirements | 21 credits

Group 1 | Choose 6 credits from the following

Course Number	Course Name	Credits	Semester
MMG 3010	Applied Cell and Molecular Bio Lab	4	Fall
MMG 3270	Cancer Genetics	3	Spring
MMG 3330	Genetics and Genomics	3	Fall

Group 2 | Choose 9 credits from any of the following

Course Number	Course Name	Credits	Semester
MMG 3070	Biochemistry Lab	3	Spring
MMG 3110	Bacterial Genetics	3	Fall
MMG 3200	Environmental Microbiology	3	Spring even years
MMG 3220	Advanced Medical Microbiology with lab	4	Spring
MMG 3230	Immunology	3	Spring odd years
MMG 3250	Eukaryotic Virology	3	Fall even years
MMG 3300 (D2/SU)	Adv Studies Emerging Infectious Disease	3	Fall
MMG 3310	Survey Bioinformatic Databases	3	Fall
MMG 3320	Advanced Bioinformatics	3	Spring
MMG 3350	Bioterrorism	3	Spring odd years

Group 3 | Choose 6 credits advisor-approved upper-level life science courses, including³:

Course Number	Course Name	Credits	Semester
MMG 2114	Vaccines: Science and Ethics	3	Summer
MMG 2991, 3991 ¹	Internship	1-4	Any
MMG 2994, 3994 ¹	Teaching Assistantship	1-4	Any
MMG 2995, 3995 ²	Undergraduate Research	1-4	Any
ASCI 3080	Molecular Epidemiology of Infectious Disease	3	
BIOC 3030	Adv Biochem Lab: Protein CURE	4	
BIOL 3505	Neurobiology	3	
BIOL 3565	Developmental Molecular Genetics	3	
BIOL 4630	Advanced Genetics Laboratory	4	
BHSC 3420	Immunology	3	
BHSC 3810	Applied Molecular Biology	3	
EMED 3000	Emergency Medicine Research	3	
PHRM 5400	Molecules and Medicine	3	
3XXX+ ³	3000+ Life Sciences (with advisor permission)	variable	

¹A maximum of 3 credits of TAsip or Internship coursework may be counted

²A maximum of 6 credits MMG 3995 Undergraduate Research may be counted

³List abbreviated. Additional courses may count. Students should discuss course choices with their advisor to ensure timely degree completion

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SAMPLE FOUR YEAR PLAN

Fall 2025

BCOR 1400 Exploring Biology 1^{C, N1}
CHEM 1400 General Chemistry 1^{C, N1}
MMG 1010 First Year Colloquium^C
MMG 1020 Microbes and You (SU)^C
MATH 1212 Fundamentals of Calc 1^{C, QD, MA}
Semester Credits
Cumulative Credits

Fall 2026

MMG 2010 Microbiology and Inf Disease^C
CHEM 2580 Organic Chemistry I^C
BCOR 2300 Genetics^C
MMG 2990 Scientific Literacy^C
Elective Arts and Humanities^{AH}
Semester Credits
Total Credits

Fall 2027

BIOC 3001 Fundamentals of Biochemistry^C
MMG 3330 Genetics and Genomics^{M1}
STAT 1410 Basic Statistical Methods 1^{C, QD}
SPCH 1400 Effective Speaking^{OC}
MMG 2995 Undergrad Research
Semester Credits
Total Credits

Fall 2028

MMG 3010 Applied CMB lab^{M2}
BIOL 3500 Neurodevelopment^{M3}
Elective Diversity^{D1}
MMG 3995 Undergrad Research
MMG 3310 Survey Bioinf Databases^{M2}
Semester Credits
Total Credits

Spring 2026

4	BCOR 1450 Exploring Biology 2 ^C	4
4	CHEM 1450 General Chemistry 2 ^C	4
1	CS 1210 Computer Programming 1 ^{IT, C}	3
3	ENGL 1001 Written Expression ^{WIL}	3
3	MMG 1030 Microbial Ecology ^C	2
15	Semester Credits	16
15	Cumulative Credits	31

Spring 2027

4	MMG 2040 Intro Molecular Genetics ^C	4
4	CHEM 2585 Organic Chemistry II ^C	4
3	MMG 2060 Intro Bio Res Methods ^C	3
1	BCOR 2505 Cell and Mol Bio w/o lab ^C	3
3	PEAC 1006 Yoga and Mindfulness	1
15	Semester Credits	15
46	Total Credits	61

Spring 2028

3	MMG 3270 Cancer Genetics ^{M1}	3
3	Elective Social Science ^{S1}	3
3	Elective Global Citizenship ^{GC}	3
3	MMG 2994 TAsip	3
3	Elective Diversity ^{D2}	3
15	Semester Credits	15
76	Total Credits	91

Spring 2029

4	MMG 3320 Advanced Bioinf ^{M2}	3
3	Elective Social Science ^{S1}	3
3	Elective Arts and Humanities ^{AH}	3
3	MMG 3995 Undergrad Research ^{M3}	3
3	MMG 4899 Senior Seminar	1
16	Semester Credits	13
107	Total Credits	120

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Date	Career Goal	Research interests	Demonstrated Skills	My next steps

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Advisor:

Major(s):

Minor(s):

Study Abroad (Y/N/Maybe)

Career Goals/Interests:

	FALL			SPRING			
Year	Number	Name	Credits	Year	Number	Name	Credits
2025				2026			
2026				2027			
2027				2028			
2028				2029			