Name:
Date Drafted:

Microbiology and Molecular Genetics Double Major

UVM |College of Agriculture and Life Sciences | Department of Microbiology and Molecular Genetics
Advising Form 2025-6

Graduates of this major will be able to:

- *Describe and apply basic microbiology and molecular genetics information, concepts and experimental techniques*
- *Explain and evaluate microbiology and 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 courses 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.

Please use this worksheet to create a four year plan. 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

Name:
Date Drafted:

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	Exploring Biology 1	4	Fall
BCOR 1450	Exploring Biology 2	4	Spring
MATH 1212 or 1234	Fundamentals of Calculus or Calculus 1	3 or 4	Any
CHEM 1400	General Chemistry 1	4	Any
CHEM 1450	General Chemistry 2	4	Any
CHEM 2580	Organic Chemistry 1	4	Fall
CHEM 2585	Organic Chemistry 2	4	Spring
CS 1210 (QD)	Computer Programming 1	3	Any
MMG 2010	Microbiology & Infectious Disease	4	Fall
MMG 2990	Scientific Literacy	1	Fall
MMG 2040	Intro Molecular Genetics	4	Spring
MMG 2060	Intro to Biomedical Research Methods	3	Spring
BCOR 2300	Genetics	3	Any
BCOR 2500 or MMG 2990	Cell and Molecular Biology (with lab) Cell and Molecular Biology (without lab)	3 or 4	Spring
BIOC 3001 BIOC 3005 BIOC 3075	Biochemistry Biochemistry 1 Biochemistry of Human Disease	3 3 3	Any Fall Fall
STAT 1410 or STAT 3000 (QD)	Basic Statistical Methods or Med Biostat and Epidemiology	3	Any
MMG 4899	Senior Seminar	1	Any

Students opting for a double major in Microbiology and Molecular Genetics must complete requirements for both majors. **One course** from the requirements below may be double-counted, i.e. a student must complete 21 credits for their first major and an additional 18 credits for their second major. A student can count research credits in the elective section of their major requirements for both majors.

Name:
Date Drafted:

Microbiology Major Requirements | 21 credits

Group 1 | Choose 6 credits from the following

Course Number	Course Name	Credits	Semester
MMG 3110	Bacterial Genetics	3	Fall
MMG 3220	Advanced Medical Microbiology with lab	4	Spring
MMG 3300 (D2/SU)	Adv Studies Emerging Infectious Disease	3	Fall odd years

Group 2 | Choose 9 credits from any of the following

Course Number	Course Name	Credits	Semester
MMG 3010	Applied Cell and Molecular Bio Lab	4	Fall
MMG 3070	Biochemistry Lab	3	Spring
MMG 3200	Environmental Microbiology	3	Spring even years
MMG 3230	Immunology	3	Spring odd years
MMG 3250	Eukaryotic Virology	3	Fall even years
MMG 3270	Cancer Genetics	3	Spring even years
MMG 3350	Bioterrorism	3	Spring odd years
MMG 3310	Survey Bioinformatic Databases	3	Fall
MMG 3320	Advanced Bioinformatics	3	Spring
MMG 3330	Genetics and Genomics	3	Fall

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

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 3995[2]	Undergraduate Research	1-4	Any
ASCI 3180	Endocrinology	3	
ASCI 3090	One Health: Antimicrobial Resistance	3	
BIOL 3135	Molecular Ecology	3	
BIOL 4630	Advanced Genetics Laboratory	4	
MLS 3300	Clinical Microbiology II	3	
NFS 3203	Food Microbiology	4	
PHRM 3010	Intro to Pharmacology	3	
XXX 3000+	3000+ Life Sciences (with advisor permission)	variable	

Name:
Date Drafted:

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
MMG 3400	Macromol Structures of Proteins and NAs	3	Spring odd years

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

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	

[1]A maximum of 3 credits of TAship or Internship coursework may be counted

[2] A maximum of 6 credits MMG 3995 Undergraduate Research may be counted per major

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

Name:
Date Drafted:

Microbiology Major	Molecular Genetics Major
Degree Audit Group 1 (at least 6 credits)	
Degree Audit Group 2 (9 credits for both or 9 for one and 6 for the other)	
Degree Audit Section 3 (*3 credits for one and 6 for the other* or 6 for both)	

Name:
Date Drafted:

SAMPLE FOUR YEAR PLAN

Fall 2025		**Spring 2026**	
BCOR 1400 Exploring Biology 1 [C, N1]	4	BCOR 1450 Exploring Biology 2 [C]	4
CHEM 1400 General Chemistry 1 [C, N1]	4	CHEM 1450 General Chemistry 2 [C]	4
MMG 1010 First Year Colloquium [C]	1	CS 1210 Computer Programming 1 [IT, C]	3
MMG 1020 Microbes and You (SU) [C]	3	ENGL 1001 Written Expression [WIL]	3
MATH 1212 Fundamentals of Calc 1 [C, QD, MA]	3	MMG 1030 Microbial Ecology [C]	2
Semester Credits	15	Semester Credits	16
Cumulative Credits	15	Cumulative Credits	31

Fall 2026		**Spring 2027**	
MMG 2010 Microbiology and Inf Disease [C]	4	MMG 2040 Intro Molecular Genetics [C]	4
CHEM 2580 Organic Chemistry I [C]	4	CHEM 2585 Organic Chemistry II [C]	4
BCOR 2300 Genetics [C]	3	MMG 2060 Intro Bio Res Methods [C]	3
MMG 2990 Scientific Literacy [C]	1	BCOR 2505 Cell and Mol Bio w/o lab [C]	3
Elective Arts and Humanities [AH]	3	Elective Social Science [S1]	3
Semester Credits	15	Semester Credits	18
Total Credits	46	Total Credits	64

Fall 2027		**Spring 2028**	
BIOC 3001 Fundamentals of Biochemistry [C]	3	MMG 3200 Environ Microbiology [MICR2]	3
MMG 3300 Adv Emerg Inf Disease [SU, D2, MICR1]	3	MMG 3270 Cancer Genetics [MGEN2]	3
STAT 1410 Basic Statistical Methods 1 [C, QD]	3	Elective Global Citizenship [GC]	3
SPCH 1400 Effective Speaking [OC]	3	MMG 2995 Undergrad Research	3
MMG 3310 Survey Bioinf Databases [MGEN2]	3	MMG 3320 Advanced Bioinf [MGEN2]	3
MMG 3300 Genetics and Genomics [MGEN1]	3	Elective Social Science [S1]	3
Semester Credits	18	Semester Credits	18
Total Credits	82	Total Credits	100

Fall 2028		**Spring 2029**	
MMG 3110 Bacterial Genetics [MICR1]	3	MMG 3220 Advanced Medical Micro [M1]	4
MMG 3250 Eukaryotic Virology [MICR3]	3	MMG 3230 Immunology [MICR3]	3
Elective Diversity [D1]	3	Elective Arts and Humanities [AH]	3
MMG 3995 Undergrad Research [MICR3]	3	MMG 3995 Undergrad Research [MGEN3]	3
MMG 3010 Applied CMB lab [MGEN1]	4	MMG 4899 Senior Seminar	1
Semester Credits	16	Semester Credits	14
Total Credits	116	Total Credits	130

Name:
Date Drafted:

Date	Career Goal	Research interests	Demonstrated Skills	My next steps

Name:
Date Drafted:

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**			

Name:
Date Drafted: