

Syllabus Academic Year 2023-24

MMG Undergraduate Research, MMG1995, MMG2995, MMG3995 Variable Credit Hours

Meeting Time, Meeting Pattern, Location

Research hours are variable and hourly commitment per week is set according to [UVM's definition of a credit hour](#). Meeting times, pattern, and location for weekly research hours are specific to the needs of the student and research mentor. Expectations and scheduling for research hours are to be agreed upon between student and research mentor at the outset of each semester.

Course Coordinator/Instructor, Contact Information, Office Hours

Rebecca Guy, Rebecca.Guy@med.uvm.edu , Office Hours: by appointment

Technical support for students

Students, please read this technology check list to make sure you are ready for classes. <https://www.uvm.edu/it/kb/student-technology-resources/>

Students should contact the Helpline (802-656-2604) for support with technical issues.

Pre-requisites or co-requisites

Course Coordinator permission

Course Description

MMG Undergraduate Research courses are designed to provide MMG undergraduate students the opportunities to do independent research with UVM faculty members in the life sciences. Research opportunities are available with most MMG research faculty but students are also encouraged to explore the wide variety of research programs available at UVM and the Larner College of Medicine.

There are three levels of undergraduate research courses offered by the Department of Microbiology and Molecular Genetics.

Students are expected to work with their PI to determine the appropriate course in which to enroll. Students are required to submit an MMG Research Credit Request form to the MMG Undergraduate Research Coordinator (Rebecca.Guy@uvm.edu). Once the signed form is received by the MMG Undergraduate Research Coordinator, the student will receive a registration override into the appropriate course.

- MMG Research Credit Request forms can be received by emailing the Undergraduate Research Coordinator (Rebecca.Guy@uvm.edu)

1. MMG 1995:

- Designed for a student taking research credit for the first time. MMG1995 is designed for those students who may not yet be ready to establish their own research project but are interested in exploring the type of research being pursued by a PI and their lab.
- Usually taken for 1 credit hour
- Usually taken Pass/Not Pass
- NOTE: MMG197 credit cannot be counted towards upper-level elective course requirements for MICR and MGEN majors
- Requirements/Assessments:
 - Regularly attend lab meetings or one-on-one with PI (as defined by PI)
 - Development of Learning Goals (due October 15 or February 15th) submitted via Brightspace
 - Written reflection on MMG1995 experience (due by the last day of class for the semester) submitted via Brightspace)

2. MMG 2995: for intermediate level learners

- Designed for a student in their second semester in lab and/or students ready to begin a research project within the lab.
- Variable credit hours; 1 credit is equivalent to a minimum of 3 hr./week on research activities (see [UVM's definition of a credit hour](#))
- Graded performance (submitted by research mentor) based on participation, enthusiasm, work ethic
- Requirements/Assessments:

- Written proposal on what hypothesis/question will be addressed, scientific methodologies; due October 15th (fall semester) or February 15th (spring semester)
- Regularly attend and actively participate in lab meetings
- Oral presentation to the lab group at the end of semester (due prior to last day of classes for semester)
- Written reflection on MMG2995 experience (due by the last day of class for the semester) submitted via Brightspace)

3. MMG 3995: for advanced level learners

- Designed for students in their final academic year in lab and/or students who have an established research project within the lab
- Variable credit hours; 1 credit is equivalent to a minimum of 3 hr./week on research activities (see [UVM's definition of a credit hour](#))
- Graded performance (submitted by research mentor) based on participation, enthusiasm, work ethic, and productivity
- Requirements/Assessments:
 - Written research proposal; due October 15th (fall semester) or February 15th (spring semester)
 - Regularly attend and actively participate in lab meetings
 - Oral presentation to the lab group and UEC member(s) (due prior to last day of classes for semester)
 - HCOL thesis and/or
 - DUR thesis
 - Present at either MMG Undergraduate Research Day or UVM Research Day

Student Expectations and Responsibilities:

- Student will identify a Principle Investigator (PI) with whom to work.
 - A Principle Investigator (PI) is a UVM faculty member in charge of a clinical trial or a scientific research grant. They may belong to any recognized unit at UVM
- Student will secure the permission of the PI to work within their lab.
 - Note: while permission to work in a lab is granted by the PI, a student may be directed to work under the direct supervision of another lab member as designated by the PI.

- Student will work with their PI to determine the appropriate course in which to enroll and credit hours.
- Student is responsible for communication with the PI (and/or their designees) and course coordinator regarding course requirements.
- Student is responsible for completing the required hours in the lab to meet UVM's credit hour definitions.
- Student is responsible for completing all necessary Lab safety trainings as indicated by the PI and in alignment with [UVM Risk Management and Safety](#).
- Student is responsible for completing forms and any course assessments.

Principle Investigator Expectations and Responsibilities:

- Works with student to determine the appropriate course in which to enroll and credit hours.
- Ensures the student has completed all necessary Lab safety trainings in alignment with [UVM Risk Management and Safety](#).
- Creates clear expectations for student regarding time commitment for course requirements.
- Mentors (or designates a mentor for) the student in research methodology and design, lab activities, and science communication.
- Submits course grade to Course-Coordinator at the end of each term.

Course-Coordinator Expectations and Responsibilities:

- Supervises student enrollment in the undergraduate research courses.
- Supports students and faculty regarding course requirements.
- Grades assessments submitted to Brightspace.

Course Learning Objectives

By the end of this course, students will be able to:

- Identify and utilize relevant previous work that supports their research
- Articulate a timely and important research question
- Identify and utilize appropriate methodologies to address the research question
- Meet the field's standards for the responsible conduct of research
- Present their research effectively in a collaborative setting and a written work

- Reflect constructively on their research experience, identifying what was learned, and how the experience informs their future educational and career goals

Modality description/Outline

In-person hands-on experience under the mentorship of UVM faculty and/or laboratory personnel.

Required Course Materials:

As specified by Research Mentor

Required platforms and software:

As specified by Research Mentor

Brightspace, MS Teams, or other course sites:

Brightspace may be used for communications and submission of assessments to Course Coordinator.

Attendance Policy and Classroom Environment Expectations:

Meeting times, pattern, and location for weekly research hours are specific to the needs of the student and research mentor. Expectations and scheduling for research hours are to be agreed upon between student and research mentor at the outset of each semester.

In this class, we will work together to develop a learning community that is inclusive and respectful. As a learning community, we will seek to encourage and appreciate expressions of different ideas, opinions, and beliefs in the spirit of Our Common Ground. Meaningful and constructive dialogue is encouraged in this class. This requires mutual respect, willingness to listen, and open-mindedness to opposing points of view. Respect for individual differences and alternative viewpoints will be maintained at all times in this class. Conduct that substantially or repeatedly disrupts the ability of faculty and instructors to teach and the ability of students to engage may result in my asking a student to temporarily leave the classroom. [See Undergraduate Catalogue - Classroom Code of Conduct \(p. 443-444\).](#)”

UVM expects students, faculty, and staff to remain compliant with all COVID-19 recommendations and measures in place for UVM, the State of Vermont, and the City of Burlington.

Attendance and illness:

If a student will not be able to attend in-person classes for qualifying health reasons, Student Health Services (SHS) will send a notification to the appropriate student services office or designated staff member informing them of this along with the dates the student is unable to attend. The SHS notification will specify whether the request for flexibility is only around in-person class attendance or includes additional flexibility for assignments and tests because the student is too ill to participate. Students are responsible for working with their faculty to make up class content and work they miss due to a documented illness.

Grading Criteria/Policies:

The MMG Undergraduate Research evaluation form will be emailed to Research Mentors in the final week of the semester. Research Mentors are responsible for submitting the evaluation form to the Course Coordinator (Rebecca Guy, Rebecca.Guy@med.uvm.edu) prior to the semester grading deadlines. The Research Mentor can base this grade on the overall performance of the researcher during the semester (80%), the research paper or poster (10%), and the oral presentation (10%). Research Mentors have the ability to adjust their grades according to their own expectations for the course, which should be described to the student prior to initiating the course.

Credit Hours towards Major/Minor Requirements:

- MMG 1995 research credits cannot be counted towards the upper-level elective course requirements for MICR and MGEN majors
- No more than 6 credit hours of MMG2995/3995 may count towards the upper-level elective course requirements for MICR and MGEN majors
- Research credit hours **may not** count towards the upper-level 9 elective credits for MICR or MGEN minors
- Research credit hours can count towards the BINF minor

Recording Class Sessions:

Student presentations may be audio-visually recorded for students in the class to refer back to, and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the chat feature, which allows students to type questions and comments live.

Lived Name and Pronoun Information

The UVM Directory includes fields for indicating your lived name and your pronouns. Lived names (preferred names, names in use) are names that an individual wants to be known by in the University community. Entering your pronouns is strongly encouraged to help create a more inclusive and respectful campus community. To update your information, login to the UVM Directory. A preview box will allow you to see how this information will appear in other systems used on campus such as Microsoft Teams and Brightspace.

More information about how to make changes to your lived name and pronouns is available in the [Knowledge Base](#).

Research and Citation Help

For help selecting research topics, finding information, citing sources, and more, ask a librarian. The UVM Libraries are eager to help. You may ask questions by phone, e-mail, chat, or text, or make an appointment for an individual consultation with a librarian.

Howe Library: <https://library.uvm.edu/askhowe>

Dana Medical Library: <https://dana.uvm.edu/help/ask>

Silver Special Collections Library: <https://specialcollections.uvm.edu/help/ask>

Course Evaluation:

UVM, MMG, and your course instructors would appreciate feedback in the organization and presentation of this course. You will have the opportunity to provide your formal feedback in an

anonymous and confidential course evaluation at the end of the semester to improve the course. We will be soliciting your feedback throughout the course.

General statement regarding potential changes during the semester:

<http://catalogue.uvm.edu/>

The University of Vermont reserves the right to make changes in the course offerings, mode of delivery, degree requirements, charges, regulations, and procedures contained herein as educational, financial, and health, safety, and welfare considerations require, or as necessary to be compliant with governmental, accreditation, or public health directives.

Intellectual Property Statement/Prohibition on Sharing Academic Materials:

Students are prohibited from publicly sharing or selling academic materials that they did not author (for example: class syllabus, outlines or class presentations authored by the professor, practice questions, text from the textbook or other copyrighted class materials, etc.); and students are prohibited from sharing assessments (for example homework or a take-home examination). Violations will be handled under UVM's Intellectual Property policy and Code of Academic Integrity.

Tips for Success (optional):

Course-specific study/preparation tips

Here are a few resources for students on remote/online learning:

- Checklist for success [in https://learn.uvm.edu/about/support-for-students/checklist-online-credit-courses/](https://learn.uvm.edu/about/support-for-students/checklist-online-credit-courses/)
- Academic support for online courses: <https://www.uvm.edu/academicsuccess/online-learning-student-resources-remote-instruction>
- 30-minute webinar on online learning success (Mar 2020): https://www.youtube.com/watch?v=Xp_MYsqQyvE

Helpful resources other than the professor (e.g., [Undergraduate/Graduate Writing Center](#), [Supplemental Instruction](#), [Learning Co-op tutors](#), supplemental course materials)

Student Learning Accommodations:

In keeping with University policy, any student with a documented disability interested in utilizing ADA accommodations should contact Student Accessibility Services (SAS), the office of Disability Services on campus for students. SAS works with students and faculty in an

interactive process to explore reasonable and appropriate accommodations, which are communicated to faculty in an accommodation letter. All students are strongly recommended to discuss with their faculty the accommodations they plan to use in each course.

Contact SAS:

A170 Living/Learning Center;

802-656-7753

access@uvm.edu

www.uvm.edu/access

Important UVM Policies

Academic Integrity:

The [Academic Integrity policy](#) addresses plagiarism, fabrication, collusion, and cheating.

Code of Student Conduct:

[UVM's Code of Student Conduct](#) outlines conduct expectations as well as students' rights and responsibilities.

FERPA Rights Disclosure:

The purpose of UVM's [FERPA Rights Disclosure](#) is to communicate the rights of students regarding access to, and privacy of their student educational records as provided for in the Family Educational Rights and Privacy Act (FERPA) of 1974.

Final Exam Policy:

The University [final exam policy](#) outlines expectations during final exams and explains timing and process of examination period.

Grade Appeals:

If you would like to contest a grade, please follow the procedures [outlined in this policy](#).

Grading:

[This link](#) offers information on grading and GPA calculation.

Religious Holidays:

Students have the right to practice the religion of their choice. If you need to miss class to observe a religious holiday, please submit the dates of your absence to me in writing by the end of the second full week of classes. You will be permitted to make up work within a mutually agreed-upon time. The complete policy is [here](#).

Promoting Health & Safety:

The University of Vermont's number one priority is to support a healthy and safe community:

[Center for Health and Wellbeing](#)

[Counseling & Psychiatry Services \(CAPS\)](#) Direct Phone Line: (802) 656-3340

C.A.R.E. If you are concerned about a UVM community member or are concerned about a specific event, we encourage you to contact the Dean of Students Office (802-656-3380). If you would like to remain anonymous, you can report your concerns online by [visiting the C.A.R.E. Team website](#).

Alcohol and Cannabis Statement:

The Division of Student Affairs has offered the following optional statement on alcohol and cannabis use **that faculty may choose to include, or modify for inclusion**, in their syllabus or Brightspace site:

Statement on Alcohol and Cannabis in the Academic Environment

As a faculty member, I want you to get the most you can out of this course. You play a crucial role in your education and in your readiness to learn and fully engage with the course material. It is important to note that alcohol and cannabis have no place in an academic environment. They can seriously impair your ability to learn and retain information not only in the moment you may be using, but up to 48 hours or more afterwards. In addition, alcohol and cannabis can:

- Cause issues with attention, memory and concentration
- Negatively impact the quality of how information is processed and ultimately stored
- Affect sleep patterns, which interferes with long-term memory formation

It is my expectation that you will do everything you can to optimize your learning and to fully participate in this course.