

Math 395C: Elliptic Curves and Modular Forms Spring 2022

The course website is <https://www.uvm.edu/~cvincen1/math395.html>.

Logistical Information: This course counts for 3 credit hours, and meets on MWF 3:30pm-4:20pm in person in Lafayette L107 or on Teams. Please see your UVM email or Teams/Outlook calendar for meeting links if you wish to join remotely.

Instructor Information: Professor Christelle Vincent, available on Teams or in Innovation E445.

For content (i.e. mathematical) questions, please post your question to Campuswire. For personal matters, please reach me by email at christelle.vincent@uvm.edu or message me on Teams.

Textbook: The elliptic curves part of the class will be taught out of *The Arithmetic of Elliptic Curves* by Silverman, 2nd edition. A variety of sources will be used for the part of the course on modular forms.

Course Description and Goals: This course will spend roughly the first half of the semester covering the theory of elliptic curves, including the theory of elliptic curves over finite fields. Then the second half will be spent covering the theory of modular forms, with an emphasis on isomorphism theorems between different spaces of modular forms (such as algebraic and analytic modular forms and modular symbols).

Office Hours: Office hours in this class are by appointment; please contact me by email or on Teams to set up a meeting time.

Grading: If you are working with me or on something closely related to the topics covered by the course, you should be completing and turning in the homework.

Homework: I will assign homework to help you engage with the material. All homework is optional, but if you turn in homework I will attempt to grade it to give you feedback.

Statement on diversity: Mathematics can be learned and enjoyed by everyone, regardless of gender, age, race, sexual orientation, or other personal characteristics. As a group we will work to create a space where we all feel welcomed and encouraged, and any actions or speech that detract from this atmosphere will not be tolerated.

In particular, we will be mindful of encouraging others to let us know if they do not already know something and do everything to support them in their learning. We will not say that things are “trivial” or “obvious.” We will offer corrections gently and with the intention of helping the other, as opposed to making ourselves feel good.

Attendance: You are expected to attend every lecture, either in person or remotely. If for whatever reason you cannot attend lecture, you are responsible for watching the recording or getting the notes from a classmate.

Religious accommodations: Students have the right to practice the religion of their choice. If you believe you might need accommodations to take part in religious celebrations, please submit in writing to me by the end of the second full week of classes your religious holiday schedule for the semester.

SAS: In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact SAS, the office of Student Accessibility Services (previously ACCESS). Once you have your accommodation letter from them, I will be available to meet with you privately to discuss the accommodations you plan to use in this course.

Course evaluations: All students are expected to complete an evaluation of the course at its conclusion. These will be anonymous and confidential, and the constructive criticism offered will be used to improve subsequent versions of the course.

Intellectual property statement: 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.

COVID-19 policies: 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.

The Green and Gold Promise clearly articulates the expectations that UVM has for students, faculty, and staff to remain compliant with all COVID-19 recommendations from the federal CDC, the State of Vermont, and the City of Burlington. The Code of Student Conduct outlines policies related to violations of the Green and Gold Promise. Sanctions for violations include fines, educational sanctions, parent notification, probation, and suspension.

Statement about academic integrity: The University strives to provide an environment that encourages all students (undergraduate, medical, graduate, and continuing education) to learn, create, and share knowledge responsibly. As society entrusts our students and faculty to pursue knowledge and report their discoveries truthfully, any deliberate falsehood or misrepresentation undermines the stature of the University. The following standards of academic integrity are deemed necessary for fulfilling the University's mission, as well as its motto: *Studiis et Rebus Honestis* ("For honorable studies and pursuits"). These standards are also necessary for evaluating the quality of student work in a fair manner. For further information, please visit <https://www.uvm.edu/sites/default/files/UVM-Policies/policies/acadintegrity.pdf>.

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.

Statement on Student Athletes: In order to be excused from classes, student athletes should submit appropriate documentation to the Professor in advance of all scheduling conflicts within the first two weeks of class. Those missing class are expected to submit make-up assignments within a reasonable time period.