

**Time:** Tues/Thur 11:40 to 12:55pm **Place:** 209 Votey

**Instructor:** Sheila O'Leary Weaver  
**Office:** E 437 Innovation Hall  
**email:** [Sheila.Weaver@uvm.edu](mailto:Sheila.Weaver@uvm.edu)  
**Office hours\*:** Mon 12 to 1pm, Thur 9 to 9:50am, Fri 8:30 – 9:20, and by appointment

**TA:** Sarah Foroughifar  
**email:** [sforough@uvm.edu](mailto:sforough@uvm.edu)  
**Office:** E 344 Innovation Hall  
**Office hours\*:** Tues, 8:45 to 9:45am, Wed 12 to 12:50pm\*\*, and by appointment

\*Most Office Hours will be offered simultaneously in our offices and on Teams

\*\*This hour only on Teams.

To get to Teams office hours:

**Go to the Microsoft Team called [Office Hours Weaver and TAs](#), and join the meeting there**

## Course Catalog Description:

Basic techniques of data harvesting and cleaning; association rules, classification, clustering; analyze, manipulate, visualize data using programming languages. Basic principles of probability and statistical modeling/inference to make meaning out of large datasets. No credit given after STAT 200 or greater.

Cross-listed: STAT 087 and CS 087. (3 credits, satisfies QR requirement)

## More Description:

Extracting meaning from data remains one of the most important tasks of research and industry. The modern age of computers and the Internet has made vast amounts of data available, making it more important than ever to understand how to collect, process, and analyze these data. This course is an introduction to the field of Data Science for students with **no experience in computer coding and no experience in statistics**. In this course, you will learn to:

- Understand some of the basic techniques of data harvesting and cleaning (AOE CSES 3.6.1);
- Understand some of the basic methods of data science, such as association rules, classification and clustering;
- Analyze, manipulate, and make simple visualizations of data with the computer language, R (AOE CSES 3.6.2); and
- Understand the basic principles of probability and statistical modeling;
- Consider the ethics of data acquisition and use (AOE CSES 3.8.1, 3.8.4);
- Make meaning out of large data sets; in order to
- Make better-informed decisions in business, research, and life.



**Course website:** [bb.uvm.edu](https://bb.uvm.edu) Blackboard will be the source of information for homework assignments, tests, and links to all materials not in print form. Check it before each class to find out assigned preparation for class.

**Text:** Materials will be provided online, at no cost.

**Class Structure:** You will be assigned readings, videos, or other preparation for each class session. Preparation expectations will be posted each day on the **Daily Schedule** tab on Blackboard. During class, we will spend time coding, discussing concepts, or doing activities. We'll work in pairs or small groups during class sometimes. Homework will be completed online, outside of class, and submitted on Blackboard. Some assessments will be completed during class, some outside of class. Later in the semester, we'll form groups of three, and do a data analysis project that will be presented to the class.

**Programming:** This course includes a basic introduction to programming in the computer language [R](#); no programming experience is required. R is **free**, easy to learn, and has many useful add-on packages. We will use R with a working environment (an IDE or 'desktop') called [RStudio](#). RStudio is also **free**, and both R and RStudio are available for Mac, Windows, and Linux. You will need a [laptop that you can bring to class](#). If this is not possible, please let me know as soon as possible, and we can make accommodations.

**Homework / Project:** There will be a variety of homework in this class, and a small-group project. Most homework will involve coding; some will not. Most will require some summary of your techniques and findings. Homework will be uploaded to Blackboard, and due by the posted due date/time; late homework will not be accepted. When you submit documents online, it is your responsibility to check that they have uploaded properly. Some guidance on the project is posted; available data sets will be posted later in the semester. Due dates are all posted on Blackboard at the Important Dates link.

**Handwritten work:** Some homework and assessments may include handwritten work. You may choose to use a tablet, if you have one. Or, you can write on paper, and scan your hand-written work. Using a scanner is fine – or, there are free smartphone apps for this purpose that work better than just photos (e.g., Adobe Scan, Genius Scan). Please be prepared with one of these methods.

**Assessments:** There will be 4 tests taken during class time. There will be one take-home midterm, submitted online. Work on assessments must be your own. Evidence to the contrary, such as collusion or plagiarism, will lead to an Academic Integrity referral (see info below.) There will not be make-ups for assessments. Contact me asap if an unusual situation arises, and we will find a solution. Assessment dates are all posted on Blackboard at the Important Dates link. There will not be a final exam. We will use the final exam period for project presentations, if these are not completed during regular class meetings.

**Participation/Attendance:** A small portion of your grade will be based on participation in class. For full credit, you should come to class prepared, and participate in activities and discussions. It is my expectation that you will do everything you can to optimize your learning and to fully participate in this course. We will often work on activities during class, sometimes in pairs or small groups. You are expected to attend, prepare by doing required readings or work, participate fully (see note below regarding evidence of professional practice). You do not need to let me know if you miss class due to a minor illness or unforeseen event. However, if you have a longer-term illness or issue, contact me, and we will evaluate the situation.

#### **Grades:**

25% homework;  
40% tests (4 of them);  
15% take-home midterm;  
15% final (small-group) project;  
5% participation: yellowdig, flipgrid

#### **Grade Distribution:**

<b>A+</b>	97-100	<b>B+</b>	87-89	<b>C+</b>	77-79	<b>D+</b>	67-69
<b>A</b>	94-96	<b>B</b>	84-86	<b>C</b>	74-76	<b>D</b>	64-66
<b>A-</b>	90-93	<b>B-</b>	80-83	<b>C-</b>	70-73	<b>D-</b>	60-63

**Grading:** Grades will be posted on Bb. Please check your grades frequently and notify me if you find any mistakes. For information on grading and GPA calculation, go to the Registrar's page on grading.

<https://www.uvm.edu/registrar/grades> .

If you would like to contest a grade, please follow the procedures outlined in this policy:

<https://www.uvm.edu/policies/student/gradeappeals.pdf>

**Recordings:** At this point, there is no plan to record class sessions. If things change, due to pandemic concerns, we may need to record classes. In that case: 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.

**Professionalism:** Evidence of professional practice on both our parts includes (a) starting and ending on time, (b) being prepared (having a charged laptop, having completed reading and/or homework for class) (c) being physically and mentally engaged, (d) performing at a high level, (e) making sure cell phones are put away in classroom, and (f) refraining from sending and receiving e-mail, side chatting on Teams, playing solitaire, facebooking, shopping, texting, tweeting, snapchatting, instagramming, etc., during class.

**Netiquette:** Netiquette stands for Network Etiquette. It refers to proper behavior while interacting online. The golden rule of netiquette is essentially to treat people as you would want to be treated. Please be polite and considerate. Think about whether your comment could cause hurt feelings. Be careful about how your words can come across because misunderstandings can be common online.

**Inclusive Learning Environment:** I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

**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.

**Helpful learning 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. Faculty who receive Letters of Accommodation with Disability

Related Flexible accommodations will need to fill out the Disability Related Flexibility Agreement. Any questions from faculty or students on the agreement should be directed to the SAS specialist who is indicated on the letter.

**Contact SAS:**

A170 Living/Learning Center;  
802-656-7753

[access@uvm.edu](mailto:access@uvm.edu)

[www.uvm.edu/access](http://www.uvm.edu/access)

**Important UVM Policies**

**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. <https://www.uvm.edu/registrar/religious-holidays>

**Academic Integrity:** The policy addresses plagiarism, fabrication, collusion, and cheating.  
<https://www.uvm.edu/policies/student/acadintegrity.pdf>

**Code of Student Conduct:** <http://www.uvm.edu/policies/student/studentcode.pdf>

**FERPA Rights Disclosure:** The purpose of this policy 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. <http://catalogue.uvm.edu/undergraduate/academicinfo/ferparightsdisclosure/>

**Promoting Health & Safety:** The University of Vermont's number one priority is to support a healthy and safe community:

**Center for Health and Wellbeing:** <https://www.uvm.edu/health>

**Counseling & Psychiatry Services (CAPS)** Phone: (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 Dean of Students website at <https://www.uvm.edu/studentaffairs>

**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.