

# Course Syllabus

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## MATH/STAT 394A Syllabus, Summer A 2019

### Logistics

- Lecture Hours: MWF 8:30am-10:40am
- Lecture Room: **SAV 264** (<https://goo.gl/maps/st6t9RmrtyyKBgR87>)
- Website: we will use this Canvas site throughout the course
- Communication: questions about homework should be asked during office hours. If you are unable to attend office hours, please let me know so that we can find some other way to meet in person. You may email Nilanjana, the TA, questions about homework, but she is under no obligation to respond quickly-- **come to office hours**. We will aim to respond to questions about the test format, emergency absences, etc. in a timely manner.

### Instructor/TA Information

- Instructor Name: Sheridan Grant (you can call me "Sheridan" or "Prof. Grant"--I don't have a PhD quite yet!)
- Instructor Email: [slgstats@uw.edu](mailto:slgstats@uw.edu) (<mailto:slgstats@uw.edu>)
- Instructor Office Hours: 4-6pm Tuesdays, 1-3pm Fridays **starting Friday 6/28**, CMU B-023 ([Statistics Tutor & Study Center](https://www.stat.washington.edu/index.php/academics/tutoring) (<https://www.stat.washington.edu/index.php/academics/tutoring>))
- TA Name: Nilanjana Laha
- TA Email: [nlaha@uw.edu](mailto:nlaha@uw.edu) (<mailto:nlaha@uw.edu>)
- TA Office Hours: Mondays 12:30-1:30 except 7/8, Wednesdays 2:15-4:15 **starting Monday 7/1**, PDL C-301. Office hour on 7/9, 11:30-12:30, PDL C-302.

### Textbook:

- "Introduction to Probability," Andersen, Seppalainen & Valko
- [Book website](https://www.math.wisc.edu/asv/) (<https://www.math.wisc.edu/asv/>)
- The book will be available on 2-hour reserve at Odegaard **as backup**--get your own copy!

### Calendar:

- June 24, 26, 28: Chapter 1
- June 28, July 1 & 3: Chapter 2
- July 3, 5: Chapter 3
- **July 8: no class**
- **Midterm: Wednesday, July 10, 9:30-10:30am**
- **July 12: finish Chapter 3, midterms graded and ready for pickup in PDL B-313 that afternoon**
- July 15: Chapter 4.1-4.3

- July 17: Chapter 5 (short chapter)
- July 19: begin Chapter 9.1-9.3
- July 22: finish Chapter 9.1-9.3, review for final exam, course evaluations
- Final: Wednesday, July 24, 8:30-10:30am

## Prerequisites

- MATH 126/136: this course will rely almost entirely on univariate calculus, but will require a mature understanding of integrals--approximating them with sums, changes of variables, basic inequalities, linearity, etc.
- The course will begin with some basic discrete mathematics and combinatorics. You should be familiar with sums, power series, and the concepts of combination and permutation.
- Mathematical Maturity: you will be asked not only to calculate quantities or derive formulas but also sometimes to prove assertions; if you have never had a class that involved proof-writing, come to my office hours *early* in the quarter so we can quickly discuss it. You will also be required to present your solutions, which may be complex to derive, in a clear and correct manner. We will work on both of these skills throughout the course.

## Learning Goals

Affective goals: how is our relationship with math?

- We will come to see success, and grades, in math classes as a product of effort rather than innate ability (there's no such thing as "math people" and "non-math people").
- We will discover that solving math problems is as much an art as it is a procedure.
- We will develop resilience in problem solving by allowing failure of one approach to motivate other approaches that will succeed.

Cognitive goals: what will we learn about math as a whole (rather than just probability)?

- We will learn to prove theorems in the abstract ("prove that the following statement holds") in addition to performing calculations ("compute the \_\_\_\_ of \_\_\_\_") and derivations ("show that the \_\_\_\_ of \_\_\_\_ is \_\_\_\_").
- We will learn how to communicate math effectively, as good writing is necessary for good math.

## Homework:

- Homework will be due each Monday and Friday in class. Solution write-ups must be your own, even if answers are available from the textbook or your classmates (see the Academic Integrity section, below). **Staple your homework.** If you cannot turn in your homework because you have missed class **with a valid excuse** (illness, death of a loved one, attending an academic conference, etc.), contact Nilanjana (the TA) and arrange a submission with her. Or, save yourself the hassle by finishing the homework a bit early and giving it to a classmate to turn in!
- Each homework will have 2 parts: "Completion" and "Graded." **First prepare these two parts separately: stapled and labeled as such--if you put problems in the wrong part they may not be graded. Then staple these two separate parts together so that the "graded" part is on the top.** The

"Completion" questions will come from the textbook, will tend to be fairly straightforward, and will be graded binary 1/0 based on whether you have made a reasonable attempt at the problem. Most (but not all) of the test questions will resemble these questions. If you can do Completion-type questions completely on your own by the time the tests come, you're in good shape! The "Graded" problems will be harder textbook problems as well as problems we came up with, and will be graded for correctness. A minority of the test questions will resemble Graded questions. These questions are the key to getting an A in the class.

- LaTeX submissions are not required, but it is a very useful skill to learn, and if your homework gets lost you can instantly prove that you submitted it by emailing us a PDF (otherwise, you have to take readable photos of your homework to have a backup, which is a hassle--we do try very hard not to lose your homework).

### Grading:

Homework will comprise 40% of the grade, the midterm 20%, and the final 40%. There will (as in virtually any class) be a curve, but it will not be "hard" in the sense that I don't predetermine the number of As, Bs, etc. to give out beforehand. If the class as a whole does well and has a good grasp on the materials, grades will be higher on average. Thus, working with your fellow students to study and figure out homework problems (write solutions up on your own, of course) will benefit you, not hurt you.

This is a hard class that has been crunched into just 4.5 weeks. You're going to have to put in lots of hours, so my goal is to make expectations as clear as possible so that there's no uncertainty as to what you need to do to succeed. If you do well on both the Completion and Graded homework as well as the tests, you'll get an A. If you do well on the Completion homework and the Graded homework but mess up on the tests, or if you do well on the Completion homework and the tests but poorly on the Graded homework, you should get a B. If you struggle on both the tests and Graded homework but engage with the class by doing well on the Completion homework, you can still get a C. Only if you fail to do well even on the Completion homework, or if you are far below average on the tests/Graded homework, will you fail. My hope is that the vast majority of y'all can pull off a B or better.

### Academic Integrity

We take academic integrity seriously, and will not hesitate to report academic dishonesty to UW and/or penalize you via your grade on the test/homework in question.

- If you are found to have cheated on a homework/test, you will receive a zero for the entire homework/test in question.
- Tests: this is obvious, but you may not use unauthorized test materials, look at other students' tests, or obtain help from others during a test.
- Homework: answers to some homework questions will be in the back of the textbook, and undoubtedly you will find helpful hints or partial answers to other questions on the internet (check out [math stackexchange](https://math.stackexchange.com/) [\\_\(!\)](https://math.stackexchange.com/)). You are also allowed to (and encouraged) to work with your friends/classmates on the homework. The key to not cheating on homework is: **don't plagiarize**. The written-up solutions you submit must be your own, even if the answer is in the textbook or on your friend's paper. You must demonstrate understanding via a unique solution. If you somehow

manage to look up the answer to every homework problem, submit a unique solution that demonstrates your understanding, and still do well on the tests--more power to ya!

## Miscellaneous

- Recommendation letter policy: you may want a recommendation letter from Sheridan. First, note that a recommendation letter from a PhD student carries much less weight than a rec letter from a professor, so for your own sake consider asking a professor first. Second, you will need to both do well in the class (3.8+ GPA) and demonstrate interest in the subject for me to be able to write you an effective letter.
- DRS: if you have established accommodations with Disability Resources for Students (DRS), please let me know ASAP. If you feel you need special accommodations, contact me or DRS directly. DRS can help accommodate conditions including, but not limited to: mental health, attention-related, learning, vision, hearing, physical, or other conditions. DRS can be contacted at 206-543-8924, [uwdrs@uw.edu](mailto:uwdrs@uw.edu), <mailto:uwdrs@uw.edu> or [their website](http://depts.washington.edu/uwdrs/) (<http://depts.washington.edu/uwdrs/>).

## Course Summary:

**Date**

**Details**

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