

**Handout 1: Syllabus**

<b>Professor:</b>	Jack Lee Padelford C-546, 206-543-1735 johnmlee@uw.edu Office Hours: <i>to be announced</i>
<b>Class Meetings:</b>	Mon/Wed/Fri 12:30-1:20, Miller 316
<b>Exams:</b>	Midterm Exam: <i>to be announced</i> Final Exam: Thursday, Dec 13, 8:30–10:20AM
<b>Course Web site:</b>	<a href="http://www.math.washington.edu/~lee/Courses/300-2018/">www.math.washington.edu/~lee/Courses/300-2018/</a>

**Required Textbook**

*Mathematical Reasoning: Writing and Proof*, Version 2.1, by Ted Sundstrom.  
Available at these locations:

- A PDF copy can be downloaded freely online; see the link on the class website.
- A printed copy is on reserve in Odegaard.
- You can purchase a printed copy from the U Bookstore or Amazon.

**General description**

This course will probably be unlike any other math course you've taken. Most of your courses so far have concentrated on helping you learn algorithms for solving particular types of problems; most courses after this one will focus instead on deep conceptual understanding and deductive reasoning. This course is supposed to be the "bridge" between the two ways of approaching mathematics. It will give you tools for thinking mathematically, reading critically and with understanding, solving conceptual problems, and writing mathematical proofs. You will probably use these tools in every math course you take from now on (and potentially in many other courses as well!).

The primary goal of this course is to help you learn what mathematical proofs are, and to improve your ability to understand, write, and critically evaluate them. These skills are essential to most upper division mathematics courses. Through this course, you will learn how to start thinking like a mathematician, and how to communicate effectively about mathematical ideas.

We will cover all of the textbook except Chapters 7 and 8. The mathematical topics include the following:

- elementary mathematical logic
- methods of proof
- mathematical induction
- elementary set theory
- properties of functions
- cardinality of sets

These topics provide a setting for working on proof skills, and also provide a complement to calculus by introducing ideas of discrete mathematics.

## Registration Information

As of the day before the start of the quarter, this section was full. I will not be overloading the class, but slots may open up during the first two weeks. Starting on September 26, you'll need permission to register. If you're not currently registered and would like to register, you'll have an opportunity to fill out a waiting list request form on the first day of classes. In order to be given permission to register, you must come to all classes and turn in all required homework. Preference will be given to math, ACMS, and stat majors.

## Requirements

**Classes:** Although I won't keep a formal attendance record, *class attendance is required*. Much of what I talk about in class will be designed to *supplement* the reading, not repeat it. If you will miss a class for a religious holiday, let me know in advance and I'll help you get the information you missed. If you must miss a class for some other unavoidable reason, it's your responsibility to find out what happened and get your homework to me by class time (or, in case of emergency or unforeseen illness, as soon as possible thereafter). Missing classes unnecessarily will dramatically reduce your chances of doing well in the course.

**Class Website:** I've set up a web page for this class (see the URL on the first page of this syllabus). On that page, I will post basic information about the course, handouts, and homework assignments. I will also be making limited use of the Canvas system to post announcements and to manage a discussion board for the class. (Be sure your Canvas profile is set to receive immediate notifications when new announcements appear.) There will also be a discussion area where anyone in the class can ask and answer questions.

**Reading Assignments:** After most classes, I'll assign part of the textbook for you to read, covering material that will be discussed in the next one or two lectures. There will also be a few supplementary handouts to read during the quarter. All reading assignments are required. You should read through each assignment quickly before class, and then read it again more carefully after we've discussed it. I really mean *read it*. This is not the kind of material that can be learned by looking at a homework problem and then leafing back through the book to find an example showing how to do that kind of problem. There might be quiz questions based on the reading.

**Homework Assignments:** After most classes, I'll assign some practice problems (to do for your own good), and some written homework problems to turn in for a grade, all posted on the class website. When there's a new homework assignment, I'll post it as soon as possible after class—usually, by about 3:00PM, sometimes sooner—and I'll post a Canvas announcement when it's ready. Usually a week's worth of homework will all be due on the same day, at the beginning of class. Homework that is turned in after the first ten minutes of class will get a 10% deduction, and homework turned in after class is over will not be accepted except in extraordinary circumstances and (except for emergencies) with advance permission. More details about how to write up homework assignments will be explained in a *Homework Presentation Guidelines* handout during the first week. These assignments are the heart of the course. Most of them will take some time to think about, so I caution you against putting them off until the evening before they're due.

**Collaboration and academic integrity:** I strongly encourage you to work together in groups on the written assignments. It's fine to help each other think through the problems, and even to explain your solutions to other students. However, when you write up your solutions to hand in,

you must *write your own solutions in your own words*. Even if you work out a solution as a group, it is not acceptable for one person to write down the solution and for others to copy it. To avoid inadvertent or deliberate plagiarism, you shouldn't show your written work to anyone else in the class. If I receive papers from different people that include identical or near-identical answers, or answers that have been copied from a published or online source, they will be treated as instances of academic dishonesty and reported to the Dean's office.

**W-course credit:** You may obtain optional W-course (writing intensive) credit for this course by satisfactorily completing additional writing assignments. The detailed requirements will be explained later.

**Quizzes:** There will be two or more quizzes during the quarter, usually announced in the preceding class. Quizzes cannot be made up, but if you must miss a quiz because of a religious commitment or an emergency, that quiz will not be counted.

**Exams:** There will be a 50-minute midterm and a 110-minute final. Both will be closed-book, closed-notes. You may not take exams other than at the scheduled times except for religious reasons, emergencies, or DRS-approved disability accommodations. If you need to make special arrangements due to religious commitments, submit an email request to me at least two weeks before the exam. If you are unable to take an exam for medical reasons, contact me before the exam or as soon as medically possible thereafter.

**Grading:** Your course grade will be based on a weighted average of the following scores:

- homework (30%)
- quizzes (10%)
- midterm (25%)
- final exam (35%)

Individual homework and quiz scores will be recorded as percentages and averaged (after dropping your lowest homework score). I don't grade on a strict curve (which would mean that only a certain percentage of the class could earn A's, a certain percentage B's, etc.). Instead, I will start with a "default" grading scale (roughly 93% for a 4.0, 73% for a 2.0, and linearly interpolated or extrapolated from there), and adjust the scale if necessary in case the exams or homework turn out to be unusually hard or unusually easy. If your final exam score is higher than your midterm exam score, then I'll change the weights to 20% for the midterm and 40% for the final.