
STAT W21 SPRING 2018

Introductory Probability and Statistics for Business

Instructor: Shobhana Murali Stoyanov

ABOUT THE COURSE

Statistics W21 is a service course designed primarily for Business students. Neither linear algebra nor calculus is required, although some concepts seem more natural if you understand integration and differentiation. You do need to be comfortable with math at the level of high-school algebra (e.g., the equation of a straight line, plotting points, taking powers and roots, percentages). Tight logical reasoning is crucial for success. The beginning of the course introduces reasoning and logic; there is a more mathematical treatment of logic in the middle of the course. The middle of the course involves a fair amount of combinatorics - counting. The emphasis of the course is critical thinking about quantitative evidence. Topics include reasoning and fallacies, descriptive statistics, association, correlation, regression, elements of probability, set theory, propositional logic, chance variability, random variables, expectation, standard error, sampling, hypothesis tests, confidence intervals, experiments and observational studies, as well as common techniques of presenting data in misleading ways.

It is difficult to succeed in today's world without a solid understanding of basic statistics. This course aims to provide you with the statistical tools you will need in the fields of business and economics, or just to be an informed citizen and consumer.

COURSE INFORMATION FOR STAT W21

Please **read this page carefully**, especially the instructions and troubleshooting advice.

THE DEADLINE FOR ENROLLING IN THIS COURSE IS 5 PM MONDAY JANUARY 22.

To use the online materials, you may use Firefox, Chrome, or Safari. Internet Explorer is not recommended. If you ever have a problem with examples or assignments, please send me an email with the problem you encountered, the browser you were using at the time (along with the version).

Late assignments are **NEVER** accepted, not for any reason. There is no method for accepting late assignments. More information on the assignments follows below.

COURSE INSTRUCTOR AND GSIS

Instructor: Shobhana Murali Stoyanov: 333 Evans Hall, University of California, Berkeley

shobhana@berkeley.edu

GSIs:

TBA

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OFFICE HOURS

- The instructor and the GSIs will hold both in-person as well as online office hours for this course. There will be many office hours to choose from throughout the week, so please make sure to go to these to clarify concepts and get help. **Do not wait** until right before an assignment is due.
- The platform **Zoom** will be used for online office hours. You do not need an account, but can log in as a guest.
- More details about the in-person office hours will be listed on the course page at login.uconline.edu.
- You will also need a webcam and working headset (or built in camera and microphone) in order to participate in office hours.
- You must enter the online office hour **within the first 20 minutes**, if you are going to come to the office hour at all. If you know that you cannot make it in the first 20 minutes, but you would really like to connect, please email the person whose hours you plan to attend and make an appointment with them. This is only for the online hours. You can drop in to the in-person office hours at any time during those hours.

THE STUDENT LEARNING CENTER

- The SLC usually offers drop-in tutoring for Stat 21 during the day.
- For more information, please contact Mike Wong (mjwong@berkeley.edu), who is the Mathematics and Statistics Program Coordinator at the Student Learning Center (located at 103 Chavez Student Center; more information at slc.berkeley.edu).

PIAZZA (DISCUSSION FORUM)

- We will be using [Piazza](#) for our class discussion forum. There will be a link on the left navigation menu of the course page, which will take you to our class page on Piazza. Please sign up there for the course - you should have received an invitation.
- If you have a general question, about the material in the text, or a clarification regarding homework, please post it on Piazza. DO NOT send an email about your question. Please **search** the forum to see if your question has already asked, and if not, go ahead and post it.
- I encourage you to try and answer each other's questions. The GSIs and I will monitor the discussion forum, and endorse correct answers. I have been using Piazza for many semesters now, and find it enormously useful. The students seem to like it too and use it a lot.

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TEXT

- The text is [SticiGui](#). It is written by Professor Philip Stark, and is freely available online. You must have Javascript enabled in the browser, and please make sure that your browser accepts cookies from the originating server. You should have the latest version that is available at the beginning of the summer. I will post other suggested readings (both books and articles) once the course begins.

LECTURES

- There are recorded lectures of Professor Philip Stark that are embedded within the text. Please use the [SticiGui](#) page to view them. There is also a link from the drop down menu on that page to the lectures, if you wish to view them independently of the text.
- I taught Stat 21 last fall. The material included continuous random variables which will not be covered in your course, and did not include the chapters on logic, which *are* included in your course. I will post the lecture slides from this course on the course page under Files.
- Professor Ani Adhikari teaches a MOOC course using SticiGui. It is aimed at Stat 2 students, but if you are puzzled, it might help. You will need to [register](#) at <https://www.edx.org> and then look for Statistics 2.1x, 2.2x, and 2.3x. You should be able to find the slides once you locate the course (the link is usually below the video).
- Please keep in mind that neither of these courses is *your* course, so the most relevant lectures are Professor Stark's, which are embedded in your text.

HOMEWORK ASSIGNMENTS

- The assignments are available online at: <http://www.stat.berkeley.edu/~stark/SticiGui/Problems/index.htm>. The due dates will be posted when the Spring semester begins, and they will be **due as posted**. (Note that you use Internet Explorer at your own risk. We do not provide any guarantee that it will work. All other browsers should work fine.)
- To access the assignments: once you are on the [assignments page](#) on SticiGui, please select our course from the drop down menu. You will then be asked to input your name, email, and SID. Use the email and SID that you have submitted to the course page at uonline.edu, since that is what we will use to verify your identity. The SID should be numbers only. If you have any problem logging into the assignment page, let me know. I will check my mail until 5pm only, so do not email me ten minutes before an assignment is due, since that would be long past my bedtime.

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- There are usually 2-3 problem sets due each week, on Tuesdays and Fridays, and occasionally on a Saturday. There are two assignments that are extra credit. You may turn them in early but late assignments will **not** be accepted for any reason. If you wait until the last minute to submit your assignment, you will risk not being able to submit it on time due to congestion. Please plan to submit your homework with time to spare.
- You are allowed to submit each assignment **up to three times** before the due date. The **last** submission (not necessarily the one with the highest score) counts. After you have submitted your answers, you can see your score and which problems you missed: The problems you missed are identified **on the confirmation screen after you submit** - not in the problem set itself. You only get that one chance to write them down, and there is no other way to see which problems you missed until after the due date. The problems are identified as **(Qxx)**, which matches the Q-numbers in the assignment. Q-numbers and Problem numbers are not the same: Problems can have many parts, each of which has a Q-number.
- While inputting your answers, do **NOT** round off numerical answers, not in your final answer, nor in intermediate steps. This can result in your answer being marked incorrect. If you are inputting a number that is at least 1,000, you may input it with commas (but you don't have to). You may use scientific notation if you wish.
- After the due date of each assignment, you can see the correct answers by opening the assignment again. After the due date, when you answer each problem, you will see an X or a check mark, just like in the book chapters.
- The assignments are often quite challenging, and will require some thinking on your part. Some ask you to apply the material to more complex problems that—superficially—are not like any problem in the book. Do not try the problems before reading the material.

EXAMS

- **Midterm:** The date for the midterm has not been approved yet. It will be after March 13, and before the spring break. I will send out an announcement as soon as I have that date for you.
- If you are an offsite student, you **must contact** crossenroll@universityofcalifornia.edu **as soon as possible**, (once the term begins), so that you can arrange to take your midterm at a recognized proctor site.
- Final exam: The final exam location and time **will be announced later**. It will most likely be on Thursday, May 10, but this may change.
- The final exam is **comprehensive**. Review exams for practice are available online, on the main

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SticiGui page. I will also be posting some old final exams.

- You must bring a 100-question Scantron form (**form 882**), a number 2 pencil and your UC Berkeley student ID to the final. If you do not submit your answers to the final on Scantron form 882, I will not grade it. If you are not in the Berkeley area, I would strongly recommend you get some Scantron forms 882 right away. If you leave it to the last minute, you might not be able to find one near you. The forms are for sale online. If you do not bring your student ID to the final (and show it when asked), I will not grade your exam. I do not bring Scantrons to the final for students who may have forgotten. The machine cannot grade exams for which the answers are not on the appropriate form.
- You *may* bring two 8.5" x 11" pages of notes, front and back (4 sides, **handwritten**), a calculator, a sliderule, a pen, extra scantron forms to auction to people who forgot to bring their own, etc.
- You may use a nonprogrammable scientific calculator. Calculators that have wireless communication or the ability to store notes, webpages, images, or the like are prohibited. You may not use any wireless device (including cell phones), computer, scratch paper, etc.

GRADES:

- Your grade will be determined using the formula:

35% Homework + 25% Midterm + 40% Final

- You **must** score **at least 60%** on the final, and have a **minimum of 66%** for your homework average in order to pass the class. There is no minimum that you need to have on the midterm.
- Two of the homework assignments (Categorical Logic and Propositional Logic) are for **extra credit** and will be due during RRR week. This means I will compute the average by adding up your scores for all 28 assignments, but dividing by 26. **Your total possible score will be capped at 105%.**
- There is **no curve** in this class. In theory, everyone could get an A. I have not actually seen this happen, but I have seen a semester in which nearly three-quarters of the students got some kind of an A or B. (The regular Stat 21 is curved, and about 50% of the students get at least a B.)

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NOTES, ADVICE, ETC: PLEASE READ!!

- This course is not easy, as it is a self-study course. You will have to be very disciplined as you pace yourself, since it moves fast. The homework is demanding, and you will have to think about the concepts. It won't do to just search for the answer, or try to replicate a method without understanding the concept behind the method.
- Make sure that you watch the lectures (Professor Stark's lectures that are embedded in the textbook), and read the book carefully. That means reading it, and working through the examples.
- Don't just look for the formula. Try to see why the example real world scenario and the formula are connected. It is not all about calculation.
- **Don't game the system.** If, on your first submission, you get something wrong, try to understand why rather than just selecting a different answer. This will make a difference on your exam. Remember – the exam has only one submission!
- Don't google the problem without trying it first. Again, it might serve you momentarily, but you will not have understood the concept, and this will affect your exam performance.
- Make sure to read the chapter before trying the homework, and to work all the examples and exercises in the text. If you reload the page, you will get new ones that you can work.
- Please **write down the answers to your assignments**. This is for two reasons. If you save your answers, they are saved on your computer as a cookie, and you will not see them if you log in from a different machine. Furthermore, cookies are not reliable storage, and your answers can get lost. I have seen many crestfallen students who have lost answers after working on them.
- If you have a question, you can post it to Piazza. Please do not send emails about a specific homework problem to the GSIs or me. Search in Piazza, and then post your question. You may get a reply from a fellow student in minutes! Do not ask exactly for the answer to your homework problem. That is cheating!
- Finally, from Professor Philip Stark's page: "... On the other hand, students who do well in this course seem genuinely interested in understanding the material. They read the chapters before trying the homework. They watch the lectures. They work all the examples and exercises in the chapters, then reload the page to get more examples and exercises and work those, too. When they see something new, they try to relate it to things they have seen before. They try to imagine other situations in which it could be used. They think and grapple with the material before asking for help. They ask probing questions and keep at the homework until it makes

sense to them—not just until they have memorized it or gotten the right answer. They go back over their homework after the due date to understand why they missed what they missed. They care more about learning than about their grades. From experience, I think the difference between doing well and doing poorly is much more about having "fire in the belly"—wanting to understand things—than about native intelligence or mathematical aptitude or anything like that. You have to **want** to get to the bottom of things. If you don't, you'll never really understand the material: You cannot master it by mimicking what's done in examples. You have to care about **why** that's what was done in the examples."