

Teaching Statement, Steven Heilman

Teaching excellence to students requires leading by example. I strive for excellence in my own teaching through: organization, preparedness, punctuality, communication, curriculum development, and student interaction.

Organization and Preparedness. I create the publicly available course website during the course enrollment period, months before the course begins. At least two weeks before the course, the first two homeworks and the lecture notes (all written in LaTeX) are placed on the course website. Thereafter, I always put homeworks on the website two weeks before their due date. The freely available lecture notes (see links at the bottom of this page) can replace the textbook for those who are unable or unwilling to purchase a course textbook. Consequently, I never assign homework problems from the textbook. This way, some students cannot gain an unfair advantage by obtaining textbook solution manuals. Exam solutions are distributed at the end of an exam, to quickly reinforce mistakes.

Punctuality. I always arrive to the classroom ten minutes early in order to erase the board and write down: what happened last time, what will happen today, and a few facts reviewing relevant topics. Class begins on time when I ask, “Are there any questions?” Class always ends on time and never goes over time.

Communication. On the first day of a small class, I ask everyone to state their name verbally in succession, to establish open communication inside and outside the classroom. In a small class, emails are answered as quickly as possible throughout the term.

In a large calculus class, questions emailed to me are answered in batch form in a “digest” sent two days before the homework is due. This class “digest” streamlines communication for me, so a repeated question only requires a single response. Also, the digest is meant to incentivize students to answer their own questions and to prepare early for the homework, rather than saving their work for the last minute.

Since the lecture notes are publicly available, I can and do inform the teaching assistants of the exact point in the notes that I have reached after a lecture has occurred, facilitating our synchronization.

Curriculum Development. When appropriate, I have reworked the curricula of classes I have taught. For example, in the class Game Theory 167 at UCLA, I chose an updated book, “Game Theory, Alive” by Peres and Karlin. The previously used book was a bit too elementary for a senior level class. The department has now decided to use this textbook in the future. I restructured the syllabus, making the proof of Brouwer’s Fixed Point Theorem a technical cornerstone of the course, incorporating some auction theory and discrete Fourier analysis, and even giving an optional section on quantum games and their relation to Bell’s inequality from quantum mechanics. Also, in the Graduate Probability 60850 class at Notre Dame, I incorporated concentration of measure and Stein’s Method into the class.

Student Interaction. I aim to be approachable, available, and helpful to my students. In class, I use the Socratic method to keep students engaged and thinking. I enjoy the privilege of teaching students, and I look forward to sharing the beauty of mathematics with the next generation.

Course Websites. Publicly available course websites can be found at:

<http://www.stevenheilman.org/teaching.html>

A sample of lecture notes appears in the hyperlinks below:

[60850 Graduate Probability](#), [547 Statistical Learning Theory](#), [541A Graduate Statistics](#)
[545 Graduate Time Series](#) [174E Financial Math](#), [171 Stochastic Processes](#), [167 Game Theory](#)
[170A Probability Theory 1](#), [170B Probability Theory 2](#), [164 Optimization](#)
[131A Analysis 1](#), [131B Analysis 2](#), [115A Linear Algebra](#)
[118 Calc 1&3](#), [126 Calc 2](#), [31A Calc 1](#), [32A Calc 2](#), [32A Calc 3 \(part 1\)](#), [32B Calc 3 \(part 2\)](#)

Course Evaluation Summary/Highlights

USC Instructor Ratings
(S denotes Spring, F denotes Fall)

Course, Term	Average Course Design (out of 4)	Standard Deviation	Average Instructional Practice (out of 4)	Standard Deviation	Number of Responses
545 Intro. Time Series, S20	3.20	1.21	3.13	1.19	5
547 Stat. Learning Theory, F19	3.75	0.44	3.79	0.51	8
126 Calculus II, F19	3.52	0.54	3.51	0.54	20
541A Graduate Statistics, S19	3.21	0.89	3.27	0.87	24
118 Business Calculus 32, F18	3.07	0.45	3.07	0.62	17
118 Business Calculus 41, F18	2.59	0.9	2.52	0.81	25

Notre Dame Instructor Ratings
(S denotes Spring, F denotes Fall)

Course, Term	Median Overall Organization (0 to 5)	Median Overall Teaching Effectiveness (0 to 5)	Number of Responses
60850 Graduate Probability, S18	5	4	5

UCLA Instructor Ratings
(S denotes Spring, W denotes Winter, F denotes Fall)

Course, Term	Median Effectiveness (out of 9)	Standard Deviation	Median Availability/Helpfulness (out of 9)	Standard Deviation	Number of Responses
170B Probability 2, F17	8.5	0.97	9	1.19	14
174E Math Finance, S17	9	0.71	9	0.88	9
170A Probability, S17	9	1.68	8	1.3	11
171 Stochastic Processes, W17	9	0.76	9	1.22	7
170B Probability 2, W17	8.5	1.3	8	1.5	14
171 Stochastic Processes, F16	9	1.18	9	1.17	16
164 Optimization, F16	8	2.63	9	1.97	19
170A Probability, S16	9	1.17	9	1.15	17
167 Game Theory, S16	8	1.97	8	1.97	11
170A Probability, W16	8	2.36	8	1.47	25
167 Game Theory, W16	8.5	1.18	8	1.98	16
32A Calculus 3, F15	8	1.36	7	1.4	118
31A Calculus 1, F15	7	2.23	7	2.09	101
115A Linear Algebra, S15	8	1.39	9	1.66	14
31B Calculus 2, S15	7	1.73	7	1.72	90
131B Analysis 2, W15	7	1.6	8	1.76	6
32B Calculus 3, W15	7	1.67	8	1.46	136
131A Analysis 1, F14	7	1.67	7.5	1.47	6
115A Linear Algebra, F14	6.5	2.64	7	2.88	8

Selected Comments. (547, Statistical Learning Theory, F19, USC):

“I learned a lot about machine learning and the assignments and project had me actually learn new programming languages to implement some of the machine learning algorithms. I even applied a machine learning algorithm to an investment game in another class.”

“I appreciate his openness and willingness to help in office hours.”

Selected Comments. (126, Calculus II, F19, USC):

NYU Teaching Assistant Ratings
(S denotes Spring, F denotes Fall)

Course, Term	Mean Overall Evaluation (out of 5)	Percentage Who Would Recommend	Number of Responses
326 Analysis 2, S13 (End Term)	3.975	87.50	16
121-20 Calculus 1, F12 (End Term)	4.38	88.46	26
121-20 Calculus 1, F12 (Mid Term)	4.14	88.36	22
121-19 Calculus 1, F12 (End Term)	3.68	56.00	25
121-19 Calculus 1, F12 (Mid Term)	3.82	75	28

“The **class was a lot of fun** and made me feel comfortable entering university life. Thank you very much..”

“Also, it was a fun and comfortable learning environment.”

“Thank you for being understanding of the situations that we could have been in during this semester in terms of our health. Also, you are really funny and engaging during your lectures, I am often scared of calculus, but coming to your class always eased my stress and helped me feel like math was something I could tackle!”

“Calculus is understandable and applicable to many aspects of daily life, as well as the fun facts that professor Heilman would tell us in class!”

Selected Comments. (541A, Graduate Statistics, S19, USC):

“The professor was very helpful and understanding. The grading policy was also good and consistent.”

“class is well organized.”

“Coverage of a wide range of topics, assignments were useful in grasping the course contents, notes were well prepared.”

Selected Comments. (118, Business Calculus 32, F18, USC):

“he is **one of the best math teachers i’ve ever had.**”

“Professor Heilman **goes above and beyond for his students**, providing homework digests, written by himself, in response to questions he’s received from students. He also offers practice quiz problems in order to prepare for the weekly quizzes, which many other professors do not do. Professor Heilman is also very accommodating when it comes to his office hours, and always responds to emails in a timely manner. It is very clear that he is **passionate about his job, and that he has an immense care for all of his students and wants to help them succeed in any and every way possible.**” “lectures were very helpful.” “stellar sense of humor” “It taught me math concepts that I will have to use in Econ”

Selected Comments. (118, Business Calculus 41, F18, USC):

“Sometimes a lot of the material discussed in class was extra material we did not need to know.”

“love him.” “stellar sense of humor” “It taught me math concepts that I will have to use in Econ”

Selected Comments. (60850, Graduate Probability, S18, Notre Dame):

“Homework was a lot but was very useful in learning the course.”

“Very organized and open to questions.” “Well-organized notes” “He has a sense of humor.”

Selected Comments. (170B, Probability 2, F17, UCLA):

“Dr. Heilman was one of the **most thorough, clear and in-depth instructor** I have had at UCLA. He was very welcoming to questions outside the classroom. It is a shame he will not

continue teaching at UCLA. I would love to take classes offered by him again.”

“The materials are really beneficial for students who are preparing for a graduate school.”

Selected Comments. (174E Math Finance, S17, UCLA):

“Although it was a hard, Professor Heilman truly made it much easier to comprehend. I would definitely take another class with him if I had the choice.”

“Mr. Heilman you are so funny during class sometimes. I really enjoy your teaching style. I heard that you’re going to be leaving UCLA next year, and I will be really sad that you’re gone :(”

Selected Comments. (170A Probability, S17, UCLA):

“Professor Heilman is **one of the best math professors I’ve had at UCLA**. His lecture notes and solutions to homework problems are all posted on the course website, which help me understand the course materials more thoroughly. He is also **very helpful** during his office hours and provides me with many insights. I truly enjoyed the course throughout this quarter, and I wish to thank Professor Heilman for being such an amazing instructor.”

“Professor Heilman is really **well-organized** and explains almost everything in great detail. He is great.”

“The instructor is **really organized**, well prepared for the class and really helpful after class.”

Selected Comments. (171 Stochastic Processes, W17, UCLA):

“Again, Professor Heilman does an excellent job at teaching this course. His explanations are very rigorous and the homework assignments somewhat make me feel like a mathematician in using theorems from class to build upon each other and culminating in a stronger or more general theorem. The lectures are very captivating since especially with the various application examples (like Google’s pagerank and the gambler’s ruin) and having the lecture notes makes the swift pacing very manageable over the long run. Thanks for another great quarter!”

“Heilman, as always, runs an **exceptional course**. The online lectures notes and test review is a gigantic boon, which is extremely helpful and I still don’t understand why other teacher’s do not adopt a similar style. He’s **clear, concise, extremely knowledgeable, and I wish I could take him for all my math classes**. It’s seems such a simple thing to get right, this style of resource-availability and clear, flowing, well motivated teaching but Heilman is the only one that seems to hit the mark on the head.”

“Very challenging and rigorous class but an effective lecturer. Thanks for posting the notes online, that was very helpful!”

Selected Comments. (170B Probability 2, W17, UCLA):

“Always extremely prepared (all notes available before the start of the course as well as other resources)”

“Professor Heilman is easily one of the **greatest professor[s] I have had at UCLA. Everything he states in “teaching statement” on his website is completely true**. He always showed up to class well before it started, and we literally almost never went a second over class. He would always put up a clock on the computer before class ensuring that he would ask if there were questions 10 seconds before class started, and that class would never end past our allotted 50 minutes. I would keep an eye on the clock instead of checking my phone (which may be unintended from professor Heilman but is helpful), and it honestly was surprising how often lectures finished within 5 seconds before the 50 minutes were up. He constantly asks if we have questions to gauge how the class is understanding what is being taught. Even when nobody asks anything, he will often see puzzled looks and will go over the hardest parts of proofs to clarify any confusion. His exams were very straightforward, fair, and reflective of the material he went over during class and in our homeworks. The only thing that I think professor Heilman could improve on is that the exercises he puts in his lecture notes are very often exactly the homework problems. This would often make it difficult to do homework exercises because there were very few to no examples of similar problems. Of course though, this is a part of the learning process he chooses to have so it is not a fatal flaw in his teaching. I just personally learn better from examples, so that would have

helped my learning experience. Overall, I have no complaints about professor Heilman as instructor and will take him again if given the opportunity. The math department at UCLA would be much stronger if more professors put as much effort into their teaching and cared about student learning as much as professor Heilman.”

“Professor Heilman is very effective in teaching. He is very patient in teaching, for example waiting for students to understand and constantly making sure during lecture that he is not going too fast. Also, **I read Professor Heilman’s teaching statement on his website, and I can verify that what he does really follow what he has written in his teaching statement.** He is very punctual about time, and very approachable by email. Also, he asks Socratic questions to motivate students to think.”

“The instructor has provided sufficient additional help to the lectures and assignments. It is great that the instructor is involved in answering questions both online and in person. The instructor has made the course manageable and **fun to learn.** ”

Selected Comments. (171 Stochastic Processes, F16, UCLA):

“I’ve had Professor Heilman for three quarters now, and he’s been **very helpful** throughout the quarters. He’s always willing to answer even the simplest questions, both during lectures and office hours. The professor **integrated theorems and general concepts well with real-life examples**, making it easier to understand the course material overall.”

“**One of the best teachers** in math department.”

“Overall, quite an experience, and a valuable one at that! Thank you, Professor Heilman. You’re such an intelligent and knowledgeable individual. This class itself was just a handful, but I am thankful for the lessons that I have learned and the information that I have gained from it!”

“Professor Heilman is extremely clear in both his expectations for the students and his presentation of the material. Posting all of his lecture notes online makes it easy for students to follow the course. He is also **very responsive over email** to student questions and he always pauses in lecture to answer any questions students might have. **I would take another class with him.**”

Selected Comments. (164 Optimization, F16, UCLA):

“At times, this class had too much assignments and a bit too much rigor. However, **as an instructor, professor Heilman is one of the best ones at UCLA.**”

“Great. His class is so well-organized and he is **really patient**. His homework also contains inspiring things and deep insight.”

“He is the **one of the best instructor[s] in UCLA**. He gave us the proper motivation at the beginning of each topic, offered appropriate homework problems which are relevant and interesting (sometimes challenging), and provided perfect difficulty of exams. He asks if anybody has a question after each definitions, properties, and proofs. He is **really patient** even when somebody didn’t understand what he explained and so he had to explain the same thing again and again. Most of all, he **uploads his lecture notes** on CCLE site, so we didn’t have to write down everything on the note but we could focus on the material more. ”

“Professor Heilman writes **excellent lecture notes** and he is very easy to understand in class. **I learned a lot** from him this quarter and would recommend this class to anyone who wants to learn something interesting from a **fully invested teacher.**”

“This was a very difficult class with challenging material, but the lectures and the notes were very thorough and well-prepared.”

“**my favorite professor in ucla**”

Selected Comments. (170A Probability, S16, UCLA):

“Professor Heilman is the **best professor I have ever encountered at UCLA**. His lecture is fairly organized and clear. He explains things well and also he cares about his students. He is the best!!!!”

“**Extremely organized.** Always referenced the lectures notes, which turn out to be more helpful than the book. Wish I had him for 170B. **Will definitely sign up for his classes in the future.** Thanks for everything.”

“Prof. Heilman is very **organized and fair** in his assignments and exams. His organization makes the class easy to follow and an **overall pleasure**.”

“This is the second time I’ve taken a class taught by Professor Heilman’s and like last time, his teaching style is **splendid**. The lectures are very straightforward and the material is clearly presented. I appreciate how he writes down everything on the board instead of just stating facts verbally. I would say that the best part of the class is that Professor Heilman strikes an excellent **balance between theory and application** his classes. In lecture (and especially in homeworks), there are questions that relate to pure theoretical proofs, which help my understanding of definitions and theorems, as well as applications, which extend on this understanding. I personally loved the questions like the hiring problem, card collection, and lottery problems. Combined, this really makes me feel like I know the material. Thanks for being an **excellent instructor!**”

Selected Comments. (167 Game Theory, S16, UCLA):

“I loved this course and I thought that it was taught very well. I really appreciated that **all of the notes were posted at the beginning of the quarter and were very in depth and well organized**. The exams and homeworks were challenging and interesting and I enjoyed doing them.”

“Very good professor. He is a really kindly professor and really **cares about students’ study**. Also his course is very enlightening to mathematical proofs. ”

Selected Comments. (170A Probability, W16, UCLA):

“Heilman was a great professor to have for this course. He was probably the **best math professor I’ve had at UCLA**. His lectures were well prepared and he is a very clear lecturer. His exams were challenging, but fair. **I will definitely try to take another class with him in the future.** ”

“Prof. Heilman is one of the **best math professors in UCLA**. He puts his notes online in advance, which proves to be very helpful in terms of previewing and reviewing materials. Prof. Heilman is also very helpful in office hours and very eager to help students. The course is **very organized**, and the pace is about right.”

“He is a **great instructor**. His lecture is **very organized**, rigorous, including helpful examples to understand complicated concepts. **Whenever students ask, he answers immediately, nicely**. He keeps asking everybody understands or agree with some concepts or proofs or rules. He keeps motivate students and makes sure everybody understand the reason that why we discuss this topic. So I really recommend this course, and if he teaches another course I have to take, I definitely takes his one.”

“Very well done course”

Selected Comments. (167 Game Theory, W16, UCLA):

“A good professor, organized, responsive and punctual.”

“Absolutely great, highly recommend.”

“Profession Heliman is **full of passion in teaching**. I like his handouts very much. His class note is clear. His homework takes some time to do but really helps me to understand the course.”

“The course material was very fun and interesting! ”

Selected Comments. (32A Calculus 3, F15, UCLA):

“Awesome teacher”

“Professor Heilman was a great teacher. This was the **perfect first math class** that I could have had at UCLA”

“Great teacher who **tries to help all his students succeed**. Open to questions and is helpful in lecture and the note taking process. Two thumbs up. ”

“I really loved this class, and Professor Heilman’s style of teaching. He covers all the necessary material while also introducing ideas of more advanced topics and encourages creative ways of thinking. **After this class, myself and a few other friends feel inspired to continue into**

more advanced math classes as a possible minor or double major. ”

“Heilman explains everything very well. He **exceeds my expectations** in how thoroughly he explains every small detail of mathematical properties. I appreciate how Heilman refuses to put arbitrary facts on the board without proving that they are reasonable and true. Heilman takes the time to ensure that everyone's questions are answered, and is always willing to repeat an explanation if needed. He makes the class interesting with his **enthusiastic personality** and clearly puts effort into preparing for his lectures each day. He comes off as someone who is extremely knowledgeable in his field of study. I also appreciate how he publishes his lecture notes to the whole class, and takes the time to create his own homework assignments; he saved me money on the textbook too.”

“Heilman was great, he really **gave his students a deep and thorough understanding of the course material**. His personality was awesome, and he always made lectures entertaining with his quirky and witty humor. More than anything, he made the course material interesting and me **made me excited to learn more about the subject**.”

“I believe that Professor Heilman is an **extremely clear and engaging** professor who puts in a lot of time to ensure the success of his students. I found the course to be an effective balance of both challenging and very informational. I do believe that I learned a lot from this class and am well prepared for the next phase in the 32 series. Thank you Professor Heilman, I really do appreciate all of your time and work!”

“He's honestly a boss, in the hippest of regards. I enjoy his approach towards the subject and his **ability to make the class laugh**. He is very fair in what he expects and he is always willing to find time to meet with students outside of class. I may not be acing the class but that is not because of his teaching.”

“Awesome sense of humor!”

Selected Comments. (31A Calculus 1, F15, UCLA):

“Funny and interactive”

“Excellent. Heilman is a wonderful professor! If you kept up with all the required materials and readings, did all the homework and paid attention in class, the examinations were doable. Thank you for being my professor”

“Professor teaches really well. **Wish I could take another class with him.**”

Selected Comments. (115A Linear Algebra, S15, UCLA):

“Professor Heilman is a pretty good Lecturer! He prepares well for this class, and his examination is fair too!”

“The best professor I have ever seen !!!!!!!!!.”

Selected Comments. (31B Calculus 2, S15, UCLA):

“Professor Heilman is [a] nice professor who is effective, helpful and considerate.”

“Professor Heilman is the **best math professor I've had here**. He cares much more about students than any other math instructor I've encountered so far. He met with me at a time other than his many office hours, which all sadly conflict with my other classes. He has also been very accommodating and helpful with my dealing with a death in the family. Please keep him, and give him tenure track!! He is a great teacher, extremely smart, nice, available, and for all I know probably produces great research for the university, too.”

“Professor has a good sense of humor.”

“This professor did a good job of presenting the material in class. I also appreciate the notes he posted online and how fast they always had tests graded.”

“Great teaching method, really helped explain the concepts and gave great examples.”

Selected Comments. (32B Calculus 3, W15, UCLA):

“A wonderful teacher that goes through the examples and theorems very thoroughly. **10/10 would take again.**”

“Clear at explaining concepts and provided many examples which were helpful for understanding the information. The notes of the entire class that were posted were also very helpful.”

“Dr. Heilman was very clear during lectures, and was always willing to provide outside help. He encouraged us to attend office hours, and even **sent out a weekly “digest”–a compilation of student questions that he had received during the week. I found this extremely helpful.** Thanks for a great quarter in math!”

“Heilman is very effective during lecture, very reasonable during grading, and funny as well. I think he did an excellent job.”

“I like how the **homework isn’t from the textbook, so there are very little ways to cheat on the homework and ensuring that the students learn the actual course material.** I also like how everything is online.”

“Professor Heilman is an excellent professor. He provides thorough explanations of concepts and provides many useful examples of problems. The solutions he provides for exams and homework is extremely helpful in helping students learn from their mistakes. He **seems to genuinely care that his students learn the material and succeed in the course.**”

“Professor Heilman is by far the **most organized and reasonable Professor I have had yet.** He is always perfectly on schedule, and provides an abundance of resources for students outside of class time. He definitely goes the extra mile and it really helps with getting through the course.”

“The assignments are great, as they really test understanding of the course material.”

Selected Comments. (131B Analysis 2, W15, UCLA):

“Keep this man. He is a great professor, bright, and cares about his students. **We need more teachers like this at UCLA.**”

“Clear instruction, reasonable exams and homework, approachable, and overall very good teacher. I enjoyed taking this class.”

“Efficient, helpful, organized. Great course.”

Selected Comments. (115A Linear Algebra, F14, UCLA):

“Instructor was very approachable and willing to help students. Exams were fair.”

Selected Comments. (121 Calculus 1, F12, NYU):

“An amazing TA very professional. I was VERY IMPRESSED.”

“I love Steven; he’s so polite and approachable when it comes to asking problems/difficulties.”