

## FA 2018-19 — Ma 108A

### Classical Analysis

#### Response Rate

Course	Total Responses	Total Enrolled
	34	41

#### Reason For Taking Course

	Option/Minor	Core	Reputation	Interest	Other	Not Answered
Course Average	88%	2%	0%	8%	0%	0%
Department Average	39%	45%	0%	13%	1%	0%
Division Average	38%	43%	0%	16%	1%	0%
Survey Average	36%	32%	1%	27%	1%	0%

#### Was The Amount Of Work Required Higher Or Lower Than The Units Listed In The Catalog?

	Noticeably High	Somewhat High	About Right	Somewhat Low	Noticeably Low	Not Answered
Course Average	11%	29%	55%	2%	0%	0%
Department Average	8%	27%	55%	5%	2%	0%
Division Average	7%	23%	60%	6%	1%	0%
Survey Average	8%	19%	58%	9%	3%	0%

#### % Of Lectures Attended

	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%	Not Answered
Course Average	14%	17%	20%	8%	2%	5%	0%	5%	8%	5%	8%	0%
Department Average	19%	14%	11%	7%	4%	7%	3%	6%	6%	10%	7%	0%
Division Average	33%	16%	9%	6%	3%	6%	2%	4%	5%	6%	4%	1%
Survey Average	47%	18%	7%	3%	2%	4%	1%	2%	2%	4%	3%	0%

#### Expected Grade

	A	B	C	D	E	F	Pass	Fail	Not Answered
Course Average	50%	38%	2%	2%	0%	0%	0%	0%	5%
Department Average	36%	21%	1%	0%	0%	0%	36%	0%	2%
Division Average	32%	17%	1%	0%	0%	0%	45%	0%	2%
Survey Average	40%	14%	1%	0%	0%	0%	40%	0%	2%

## Hours/Week Spent On Coursework Outside Of Class

	1-3	4-6	7-9	10-12	13-15	16-19	20-23	24+	Not Answered
Course Average	0%	32%	38%	20%	2%	0%	5%	0%	0%
Department Average	8%	40%	31%	10%	2%	0%	0%	0%	4%
Division Average	14%	40%	27%	9%	2%	0%	0%	0%	3%
Survey Average	23%	35%	21%	9%	3%	1%	0%	0%	4%

## % Of Homework Completed

	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%	Not Answered
Course Average	91%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Department Average	88%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Division Average	87%	4%	2%	1%	0%	0%	0%	0%	0%	0%	0%	3%
Survey Average	86%	5%	2%	0%	0%	0%	0%	0%	0%	0%	0%	3%

## Course Section: Ma 108A

### Overall Ratings

		Score	Dept.	Div.	Caltech
The quality of the course content		3.91 ± 0.89	3.74	4.04	4.24

## Instructor Section: Kirill Lazebnik

### Overall Ratings

		Score	Dept.	Div.	Caltech
The instructor's overall teaching		3.78 ± 0.93	3.40	3.88	4.21

### Organization/Clarity

		Score	Dept.	Div.	Caltech
Set out and met clear objectives announced for the course		4.00 ± 0.87	3.75	4.11	4.30
Displayed thorough knowledge of course material		4.36 ± 0.92	4.24	4.42	4.60
Explained concepts clearly		3.97 ± 0.88	3.39	3.84	4.17
Distinguished between more important and less important topics		3.61 ± 1.18	3.46	3.79	4.05
Presented material at an appropriate pace		3.85 ± 1.18	3.64	3.92	4.13

### Ability to Engage and Challenge Students Intellectually

		Score	Dept.	Div.	Caltech
Emphasized conceptual understanding and/or critical thinking		4.09 ± 1.03	4.00	4.21	4.32

Related course topics to one another		<b>4.09 ± 1.00</b>	4.02	4.23	4.36
--------------------------------------	--	--------------------	------	------	------

### Interaction with Students

		Score	Dept.	Div.	Caltech
Demonstrated concern about whether students were learning		<b>3.52 ± 1.13</b>	3.59	3.96	4.23
Inspired and motivated student interest in the course content		<b>3.39 ± 1.16</b>	3.42	3.92	4.20
Was available for consultation outside of class		<b>4.15 ± 1.08</b>	4.00	4.10	4.31

### Course Organization, Content, and Evaluation

		Score	Dept.	Div.	Caltech
Selected course content that was valuable and worth learning		<b>3.79 ± 1.09</b>	3.85	4.14	4.31
Organized course topics in a coherent fashion		<b>3.79 ± 1.34</b>	3.81	4.10	4.28
Chose assignments that solidified understanding		<b>3.94 ± 1.10</b>	3.72	4.04	4.22
Explained clearly how students would be evaluated		<b>3.73 ± 1.26</b>	3.71	4.05	4.26
Designed and used fair grading procedures		<b>3.79 ± 1.20</b>	3.72	4.08	4.30
Gave tests and quizzes that accurately reflected material taught		<b>3.45 ± 1.46</b>	3.63	3.94	4.21

## Teaching Assistant Section: Gefei Dang

### Teaching Assistant Ratings

		Score	Dept.	Div.	Caltech
Provided helpful comments on assignments, papers, exams		<b>4.20 ± 0.75</b>	4.15	4.24	4.40
Answered questions clearly and concisely		<b>4.20 ± 0.75</b>	4.13	4.23	4.41
Was well prepared for section, office hours or lab		<b>4.00 ± 0.89</b>	4.35	4.37	4.45
Presented material clearly in section or lab		<b>4.25 ± 0.83</b>	4.28	4.30	4.46
Overall teaching effectiveness		<b>4.40 ± 0.49</b>	4.20	4.26	4.41

## Teaching Assistant Section: Liyang Yang

### Teaching Assistant Ratings

		Score	Dept.	Div.	Caltech
Provided helpful comments on assignments, papers, exams		<b>4.86 ± 0.35</b>	4.15	4.24	4.40
Answered questions clearly and concisely		<b>4.88 ± 0.33</b>	4.13	4.23	4.41
Was well prepared for section, office hours or lab		<b>4.75 ± 0.43</b>	4.35	4.37	4.45
Presented material clearly in section or lab		<b>4.75 ± 0.43</b>	4.28	4.30	4.46
Overall teaching effectiveness		<b>4.88 ± 0.33</b>	4.20	4.26	4.41

## Comments

**Please provide any comments that you may have regarding the course (not the instructor), including course materials, textbook, homework, and exams.**

I would have liked to spend less time on Fourier series. It is covered in other Caltech classes that a lot of people in Ma 108a have already taken. For example, it is taught in ACM 95, Ph 12 and Ma 2. I understand that it is an interesting application but we seemed to spend 3 or more weeks on it.
Having basically two midterms and two finals is a bit taxing, especially for students already taking midterms and finals for four other classes.
Otherwise the course was good
Following Rudin a bit more in order would have been better for learning the material.
Also, I think the grade breakdown should be announced on the website when the class starts. Furthermore, bonuses end up becoming just like any other required points if grades are calculated initially taking them into account.
The course rebuilds on the concepts from Ma 1a, but with more interesting topics (e.g. Fourier series and harmonic analysis). Of course, it would be better (for the final week) to introduce students to measure theory, Lebesgue measure, and Lebesgue integration to better transition to Ma 108b.
exams had too few questions (though time was generally adequately allotted), were neither very representative of coursework or material
The homework was well planned and reasonable. The lectures were very concise and thorough. I didn't really like the textbook, and I really would have like a different one for the course. The definitions in general were overly complicated and disfunctional. I felt like the handling of concepts like continuity, metric spaces, and open/closed sets were especially archaic. There was a trend in Rudin to complicate definitions to handle very specific cases of analytic concepts on the real line, only, that made everything more complicated and less general. The lack of the use of inner products when discussing Fourier series was also a big disadvantage. Frankly, if I hadn't gone to lecture when we did the Stone-Weierstrass and Parseval's theorems, I would have had to learn from a book other than Rudin to catch up. That said, the problems were fine.
Grading sometimes seemed somewhat arbitrary, as I sometimes would get the main idea of a question correct and lose the majority of the points for missing details.
Homeworks were relatively easy compared to the exams, which was a bit frustrating, but at the same time I understand that it had to be done.
The exams were notably harder than the homework
The course textbook, and problems are solid although some problems can be polished.
The unlimited time sections of the midterm and final took me 15 and 25 hours respectively. I solved all four problems, but ultimately feel like I didn't learn much from them other than a couple tricks. This ruined my weeks and set me back significantly in other classes, but I had to spend this much time on them because I was sure that other people would figure them out as well.

**Please provide any comments you may have regarding the instructor: Kirill Lazebnik**

The pace of lecture was a bit slow and was often bogged down in tedious algebraic details which offered little insight.
I'll start by saying that lectures were very well organized, as was the arc of the course, and everything said in class made sense. However, Prof. Lazebnik was a very meticulous lecturer. While 108 is a class that a lot of non math majors have to take, sometimes it would have been nice to skip simpler steps in class, like writing out all the integration by parts or substitutions.
Very nice person. The class moved a little slow, but that is to be expected of a real analysis course taken after calculus. Explained concepts clearly and was easy to understand. Great instructor overall.
Very nice guy, lectures are very direct and paced well. Perhaps they are not the most exciting lectures, but I think this is to be expected from an analysis class
The instructor was very good and although a harsh grader, is a fair one. No complaints about him. The first lecture was good at captivating students by showing wonky analytic mishaps that seem to be intuitively true but turn out to be false.

**Please provide any comments you may have regarding the teaching assistant: Gefei Dang**

No comments were entered for this subject.

**Please provide any comments you may have regarding the teaching assistant: Liyang Yang**

No comments were entered for this subject.

**Do you have any constructive comments for other students considering taking this course? In particular, comments about workload/distribution of the workload of the course, the necessity of the textbook, unexpected time requirements or flexibility, or unspecified prerequisites could be particularly helpful.**

This class is significantly more difficult than last year but we covered more interesting topics. The problem sets are more interesting than textbook exercises but equally grindy.

Wildly variable in difficult. Some sets were near impossible, some were trivial. Midterm was extremely difficult. Wish there had been more consistency.

Lecture is worth going since he doesn't post the class notes. To be fair they are also extremely clear lectures, but not the most exciting since he doesn't do a fantastic job of explaining why he makes certain substitution or other tricks unless someone asks him to explain. This would be fine except that he gives very little time for students to ask questions.

Spend adequate time figuring out and understanding how to do the problem sets and you should be fine. They aren't trivial but also aren't all that difficult.

The course lacked structure this year, in terms of how the material was presented. Lecture notes or following the book more closely would have been helpful. Grading on tests seemed to be all/most or nothing in a lot of places.

Class was somewhat boring. Rudin covered all of the relevant material up until the end, when some of the results from Fourier Series were not contained in the textbook. Workload seems to be harder than last year, but it's definitely much easier than Ma5a.

Having taken a real analysis course before, I felt as though this course was able to allow me to delve into areas I hadn't really thought of before. The first part of this course seemed a bit on the slow side, but things really started picking up after midterms when we ventured into Fourier analysis. Kirill was a good professor, and I really recommend this course to all!

Lectures were mostly good but sometimes Lazebnik would review too much and/or get lost in the weeds. During those times I would think to myself, "it's 11am and I'm watching some guy struggle to integrate by parts in front of a mostly inattentive audience...what even am I doing with my life." Other than the bouts of existential dread it triggered, 108a was fine I guess.

Ma108a is doable and well organized. It will take more time than a lot of other classes. Put in time, and pay attention, and you will do well.

Make sure to prepare yourself well for the Midterm and Final, I did very well on the HW which I did mostly by myself and I did not do as well on the exams and looking back I wish I had studied more.

The workload is alright, just make sure you are rigorous enough on things you think are intuitively true.

Fun class, not too hard and not too much work. No online lecture notes and the book doesn't cover everything taught in class, so going to lecture is very helpful (particularly during the second half of the class).