

Columbia University: Arts & Sciences

A&S Fall 2023 Standard Evaluation

Course: MATHUN2030_001_2023_3 - ORDINARY DIFFERENTIAL EQUATIONS: MATHV2030_001_2023_3_170706
Instructor: Elena Giorgi *
TA: Maximo Jalife, Shuang Liang, Shiv Yajnik
Response Rate: 51/69 (73.91%)

1 - What did you learn - in terms of knowledge, skills, or perspectives - in this course? The answer to this question will generally be available in Vergil.

Response Rate 12/69 (17.39%)

- Methods to solve various ODEs
- Differential equations.
- Various techniques for solving many different types and cases of ODEs.
- I learnt how to solve first and higher order differential equations, how to apply Laplace transforms, and solving systems of first order linear equations
- Linear ODE, Second order ODE, Laplace, Systems of ODE
- An intense and deep understanding of ordinary differential equations.
- Ordinary differential equations
- How to find solutions to ODE
- I learnt how to solve different types of ordinary differential equations.
- Methods to solve first and second order ODE. Also systems of ODEs
- Ordinary Differential Equations
- Fundamentals of differential equations and solving various types.

2 - What percentage of the work (including reading) assigned for this course did you complete on schedule?

Response Option	Weight	Frequency	Percent	Percent Responses	Means
All or almost all	(1)	40	78.43%		
Most	(2)	9	17.65%		
Some	(3)	1	1.96%		
This question is not applicable	(4)	1	1.96%		
				0 25 50 100	
Response Rate					
51/69 (73.91%)					

3 - What is your overall assessment of the course? What are its strengths? In what ways might it be improved? In answering this question, you might address the value of readings and assignments, the structure of the course (including the relationship of sections to lectures), the contribution of the course to your knowledge of the subject matter and to the development of your analytical and reasoning skills, etc. We encourage you to use specific examples where possible.

Response Rate 13/69 (18.84%)

- I think the assignments and workload were very manageable—weekly problem sets each taking about 4-5 hours. They were difficult but doable and very helpful in learning the material.
- Organization of course is very good; connections with the textbook is helpful; professor's teaching style is best I've seen so far in the math department; she writes down everything you need to know and stops for questions
- This is a great class. Hard but great. The best thing about this class is that Prof Giorgi generally followed the text. This made it easier because the material is challenging and sometimes having the support of a text helps to clarify and supplement lecture. I would make classroom time more active - break into groups, work on problems.
- Some of the math involved is actually pretty interesting. It all feels somewhat abstract though, I wish there was more focus on the practical applications of ODEs.
- The structure of the assignments was quite helpful, as you have about 2 weeks from learning new material to submit the homework on that material. This gives sufficient time to understand the material. However, some assignments, specifically the ones about solving second-order differential equations with series solutions are too long and repetitive. Since these questions individually take a long time, I think it would be beneficial to decrease the number of questions on this topic
- Pretty good. Clear expectations and explanations.
- It would be great if this course had a small project associated with it wherein we can actually model a system with some live data and equations which can give a much better understanding of the course.
- The course is great
- Linear algebra should be a prerequisite
- It's good, but I think the assessment grades should be spread out more (so much pressure on final).
- Very good course because it taught me how to solve a variety of ODEs. It would be great if we get more intuitions in class on why we approach certain types of ODEs certain ways, and more applications of the ODEs. The pace is also very fast, not leaving enough time on certain topics such as the Laplace transform. Some of the homework are beyond what we learnt in class and are very rigorous and challenging to do. It would be great if the homework can focus more on applying the methods that we learnt.
- Pretty good. Standard math class. Sometimes would get too stuck on proofs that were above most students' interest (as in not everyone is a math major) but like I get that.
- It's a standard math course, the subject material is pretty challenging at first glance and getting accustomed to the breadth of information is not easy. It's mostly identifying what you need to do and the process of doing it. It sounds easy but the doing is pretty strenuous; you will use multiple pages solving just one ODE.

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4 - What is your overall assessment of the course? The answer to this question will generally be available in Vergil.

Response Option	Weight	Frequency	Percent	Percent Responses	Means	
Excellent	(5)	15	29.41%		4.02	
Very Good	(4)	26	50.98%			
Good	(3)	6	11.76%			
Fair	(2)	4	7.84%			
Poor	(1)	0	0.00%			
				0 25 50 100	Question	
Response Rate			Mean		STD	Median
51/69 (73.91%)			4.02		0.86	4.00

5 - Would you recommend this course to another student? The answer to this question will generally be available in Vergil.

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Definitely recommend	(1)	20	39.22%		
Probably recommend	(2)	26	50.98%		
I'm not sure I'd recommend	(3)	4	7.84%		
Probably not recommend	(4)	1	1.96%		
Definitely not recommend	(5)	0	0.00%		
				0 25 50 100	
Response Rate					
51/69 (73.91%)					

6 - Please qualify your recommendations if you wish. The answer to this question will generally be available in Vergil.

Response Rate 5/69 (7.25%)

- ODE is a great class. They say you don't learn algebra until you use it in calculus, and you could say you don't learn calculus until you use it in ODE. The nice thing about Prof Giorgi is that the structure follows the book so when things get tough you have both lecture and book to reference for support. Also the tests were straightforward with no surprises.
- I would recommend this class to the engineering or math majors.
- It is definitely a hard class. Linear algebra should be a suggested requirement. It really saved me at the end of the semester, cannot imagine getting through it had I not taken linear.
- If it's not required, I think you should avoid this class if you're not taking it with a seasoned professor. In the wrong hands, this class is a lot more complicated and difficult than it needs to be.
- Professor Elena Giorgi constitutes the whole reason for my recommendation. ODE is ODE, but she made it enjoyable and comprehensible.

7 - How does the workload in this course compare to Columbia courses with a similar structure (e.g. a lecture, seminar, laboratory, or language course)? The answer to this question will generally be available in Vergil.

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Much heavier workload	(1)	2	3.92%		
Heavier workload	(2)	7	13.73%		
Similar workload	(3)	35	68.63%		
Lighter workload	(4)	7	13.73%		
Much lighter workload	(5)	0	0.00%		
No basis for comparison	(6)	0	0.00%		
				0 25 50 100	
Response Rate					
51/69 (73.91%)					

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8 - How many hours a week did you devote to this course? (Note: Please include all time spent on this class including class time, discussion sections, readings, assignments, studying, etc.) The answer to this question will generally be available in Vergil.

Response Rate	15/69 (21.74%)
<ul style="list-style-type: none"> • 2-4 • About 8 hours • 15+ • 3 • 8 • 9 hours (4 in class, 5 on homework) • 3 hours for class, 5 hours hw • 10 to 13 hours a week. • 7 hours • 5-8 depending on the week, some homeworks more difficult than others • At least 15 • 10 hours a week, the weekly problems sets often have very difficult questions which make the work load feel much heavier. • 3 hours in class + 4ish hours for homework studying per week. So 7-8ish hours per week • 8 hours • 10+ 	

9 - Please evaluate Elena Giorgi. What are Elena Giorgi's strengths? In what ways might their teaching be improved? In answering this question, you might address the clarity of the lectures or presentations and their relationship to the other elements of the course, the ability of Elena Giorgi to generate enthusiasm and facilitate discussion, the quality of feedback, availability, the timeliness of the return assignment, etc. -

Response Rate	20/69 (28.99%)
<ul style="list-style-type: none"> • Professor Giorgi was great! Very approachable, a good explainer, and a very fair grader. Her assignments are very tied to what we learn in lecture. The only thing I wish she did was have lecture notes. If you miss a class you're kinda screwed. • Best teaching style I've seen so far in the math department. Very clear about class expectations and always open to questions, replies fast to emails • Excellent. Strengths are organization and clarity and making sure prepared for doing exams. Could make classroom more active in terms of participation. • She is a very clear lecturer and writes everything clearly on the board. She is also very good at addressing questions and being clear about course objectives. • Prof Giorgi is fantastic -- very clear explanations, doesn't skip steps. Hands down best math professor I have had at Columbia. • Professor Giorgi is very quiet and monotone. It is hard to pay attention to her lectures sometimes. Her administrative work for the course, making problem sets, exams, and resources was very good, however. She has a tendency to speak quietly towards the blackboard while lecturing, making it very hard to understand her in such a large class. • Professor Giorgi has been the best math teacher I've had thus far at Columbia. She approaches each lecture with an energy that makes the complicated content seem manageable, and is always available to respond to questions in a clear manner. I truly appreciate how often she asks her students for any questions, especially when we seem confused. She genuinely tries her best to make sure all her students understand the content and never rushes over her responses to a student's question. If you're taking ODE, I would definitely recommend taking it with professor Giorgi. • Very helpful in OH, clear explanations in class, very nice professor. • Prof. Giorgi has an in-depth knowledge of the subject and is an effective communicator of the subject matter. She was also very kind and accommodating in terms of giving me a significant extensions for two of my homework assignments due to my illness. • N/A • Very good teacher. Would be cool if she published lecture notes though. • Very clear, will answer all questions clearly, patient, understanding • Wonderful professor, very clear and detailed. Occasionally Professor Giorgi will skip very fast through some computations but I also find this useful because the lecture is guided by the conceptual basis rather than computation we already know how to do. • - Clearly knows the material very well and is glad to answer any questions regarding the material covered in lecture • Very knowledgeable and explains as many times as necessary. But the content is very hard. • Professor Giorgi breaks down the problems clearly and shows how to solve them methodically. She is super nice and is willing to help and meet to go over problems. But her pacing is relatively fast and it would be great if we spend more time on certain difficult concepts such as Laplace transforms because it is hard to intuitively understand how and why the transformations work this way. • She is very straightforward and easy to understand! Very clear on what we will be graded on! Would be helpful to maybe have some extra notes available to us (I got sick and missed a class didnt really know how to catch up on missed content) • Professor Giorgi tried to make ODE interesting but I don't think that's possible. This class was not taught the way I think it should be taught, seeing as it was mostly about identification and the process of solving. • Professor Giorgi is a phenomenal math teacher, which I believe is hard to come by at the collegiate level. Her lectures are very well organized to accommodate a variety of note-taking strategies, they cover definitions, proofs, and examples often all in the same 1 and 1/2 hour time frame, and are easy to follow. Not to mention, they were very easy to reference later on in exam preparation or in completing homeworks. Professor Giorgi is also a master in the field and had no issues correcting her own work or fielding difficult and strange questions from students. Her attitude towards teaching was great as well. • Elena Giorgi was an effective lecturer and was always helpful in responding to questions. 	

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10 - What is the overall teaching effectiveness of Elena Giorgi? -

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Excellent	(5)	24	47.06%		4.25
Very Good	(4)	18	35.29%		
Good	(3)	7	13.73%		
Fair	(2)	2	3.92%		
Poor	(1)	0	0.00%		
				0 25 50 100	Instructor
Response Rate			Mean	STD	Median
51/69 (73.91%)			4.25	0.84	4.00

11 - What are the strengths and weaknesses of Maximo Jalife (discussion section leader, lab section leader, grader) as an instructor, and how might Maximo Jalife's teaching be improved?

Response Rate	1/69 (1.45%)
• He's a cool guy	

11 - What are the strengths and weaknesses of Shiv Yajnik (discussion section leader, lab section leader, grader) as an instructor, and how might Shiv Yajnik's teaching be improved?

Response Rate	0/69 (0%)
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11 - What are the strengths and weaknesses of Shuang Liang (discussion section leader, lab section leader, grader) as an instructor, and how might Shuang Liang's teaching be improved?

Response Rate	1/69 (1.45%)
<p>• Graded the first homework problem set. Many students did not select matching pages for the submission on Gradescope because it was not addressed in class or the syllabus at all but Shuang just gave a 0 and wrote a very passive aggressive email declaring that he will take off extra points for students requesting regrades. The page selection function on gradescope is not common sense to everyone, so it would be reasonable and respectful to address that specifically before he just arbitrary decides to give a 0 to anyone who submitted the complete homework but did not know about page selection on gradescope. It would make sense if he took off points after he has addressed it but he simply gave out 0s and then bashed people who did not know about page selection, even though page selection had never been addressed.</p>	

11 - What are the strengths and weaknesses of Maximo Jalife, Shiv Yajnik, Shuang Liang (discussion section leader, lab section leader, grader) as an instructor, and how might Maximo Jalife, Shiv Yajnik, Shuang Liang's teaching be improved?

Response Rate	
<p>• Graded the first homework problem set. Many students did not select matching pages for the submission on Gradescope because it was not addressed in class or the syllabus at all but Shuang just gave a 0 and wrote a very passive aggressive email declaring that he will take off extra points for students requesting regrades. The page selection function on gradescope is not common sense to everyone, so it would be reasonable and respectful to address that specifically before he just arbitrary decides to give a 0 to anyone who submitted the complete homework but did not know about page selection on gradescope. It would make sense if he took off points after he has addressed it but he simply gave out 0s and then bashed people who did not know about page selection, even though page selection had never been addressed.</p>	
• He's a cool guy	

12 - What is the overall teaching effectiveness of Maximo Jalife?

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Excellent	(5)	4	44.44%		4.22
Very Good	(4)	3	33.33%		
Good	(3)	2	22.22%		
Fair	(2)	0	0.00%		
Poor	(1)	0	0.00%		
				0 25 50 100	TA
Response Rate			Mean	STD	Median
9/69 (13.04%)			4.22	0.83	4.00

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12 - What is the overall teaching effectiveness of Shiv Yajnik?					
Response Option	Weight	Frequency	Percent	Percent Responses	Means
Excellent	(5)	3	60.00%		4.40
Very Good	(4)	1	20.00%		
Good	(3)	1	20.00%		
Fair	(2)	0	0.00%		
Poor	(1)	0	0.00%		
				0 25 50 100	TA
Response Rate			Mean	STD	Median
5/69 (7.25%)			4.40	0.89	5.00

12 - What is the overall teaching effectiveness of Shuang Liang?					
Response Option	Weight	Frequency	Percent	Percent Responses	Means
Excellent	(5)	1	25.00%		3.50
Very Good	(4)	2	50.00%		
Good	(3)	0	0.00%		
Fair	(2)	0	0.00%		
Poor	(1)	1	25.00%		
				0 25 50 100	TA
Response Rate			Mean	STD	Median
4/69 (5.80%)			3.50	1.73	4.00

12 - What is the overall teaching effectiveness of Maximo Jalife, Shiv Yajnik, Shuang Liang?					
Response Option	Weight	Frequency	Percent	Percent Responses	Means
Excellent	(5)	8	44.44%		4.11
Very Good	(4)	6	33.33%		
Good	(3)	3	16.67%		
Fair	(2)	0	0.00%		
Poor	(1)	1	5.56%		
				0 25 50 100	TA
Response Rate			Mean	STD	Median
			4.11	1.08	4.00

13 - Reflecting on your mathematics courses, can you share any specific classroom environments, activities, or practices that have contributed to a positive learning environment?	
Response Rate	5/69 (7.25%)
<ul style="list-style-type: none"> • HW is helpful but sometimes tedious • N/A • Smaller class size usually helps me engage more and learn better. • Pretty standard math class dont know what to say • I think math classes should require group study and teaching sessions. It is by far the best way to cement the material into your head and having others to rely on/ that rely on you, creates a social incentive to perform better. This happens implicitly when you're familiar with people in your class but for individuals without those opportunities, they are left to fend for themselves. 	

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14 - Looking forward, what additional activities, strategies, or improvements do you believe would enhance your learning in future mathematics courses?

Response Rate	8/69 (11.59%)
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- Math is learned by doing. But many of our classes are lectures. I think that more of the class time should be devoted to doing.
- N/A
- Having more worked out examples with explanations for each step available to get a better conceptual understanding.
- Less of a huge weight on exams, more on continual problem solving
- I would go to office hours and math help room more often.
- Maybe more on classroom dynamics: like a little more back and forth between prof and students (but nobody ever would talk when she asked if we had questions so I understand that too)
- Keeping tested material consistent to lecture and PSet material is key. There are far too many instances where the disconnect leaves students mismanaging and under prioritizing material that they are actually being tested on.
- I requested a tutor at the midway point of the semester, and only one person responded with an offer that I could not pursue due to costs. It would be great if the mathematics department better advertised ways to receive help outside of the courses parameters (tutors, help-rooms, etc.) so that students with financial constraints can still try and improve with university resources.

15 - What initiatives or changes could the mathematics department implement to foster a more inclusive environment, making it not only more welcoming but also more supportive for all students?

Response Rate	6/69 (8.7%)
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- Everything in the math department has the same vibe as a piece of cardboard. I spend a lot of time in the physics and astronomy departments and people at least seem excited around there.
- N/A
- Less of a huge weight on exams, more on continual problem solving
- Advertise the math help room more and expand it.
- Perhaps think of non lecture style classes. Calc II with Dragomir had a little of that approach (we had a more interactive project and he was more hands-on) so maybe something like that would make the class more dynamic. Prof Giorgi was amazing, though! Very approachable and knowledgeable
- The math help room is entirely too small. I think the math library could be repurposed as a larger space where the matter of space is not a barrier for inclusivity. The Math department has a large staff of student teaching assistants but it is far too difficult to accommodate larger numbers of students at the same time in the tiny room.