

EVALUATION: #1 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|---------------|
| • Prepare for class | <i>often</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>often</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>rarely</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

I always attended lecture, which was extremely helpful as the material was fast paced and built on itself continuously. In addition, I asked the professor any questions I had at the end of class or regarding challenging homework problems, and occasionally attended evening office hours with the maths fellows. Finally, I often attended the Q Center, where help was always available for working through challenging problems or answering specific course content on which I was unsure.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

This course was instrumental in helping me undertake a rigorous investigation of the theorems and theory underpinning calculus. This was likely the most structured maths course I have taken thus far, in the sense that all content clearly built off preceding lectures and there was a clear intuition and understanding of why each theorem was taught and how it slotted into the overall course structure. The instructor paid special attention to the importance of each theorem within

the overall course, and provided illuminating examples of how seemingly innocuous ideas could be used to motivate more powerful proofs and theorems. He was very approachable and enthusiastic, and certainly a highlight of taking this class.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I developed a strong rigorous understanding of fundamental calculus concepts, but also greatly improved my proof-writing capabilities and analytical and problems-solving skills. In addition, I greatly developed my ability to construct multi-step logical arguments building on a wide range of theorems and definitions, as well as significant time management skills that allowed me manage my homework assignments, regularly attend TA hours and extensively practice before each exam.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The expectations of the course were appropriate for a 300 level core maths course, the workload was intense but manageable and there were plenty of resources available to support my learning and understanding of the content. The pace of information was reasonable and well-adapted to the class level, as the professor always took time to ensure that everyone understood key concepts and provided extensive examples and illustrations. Information was clearly presented and very understandable, and all assignments were tailored to assess specific skills and knowledge and ensure that no one was falling behind. The work was very fair and interesting, and the professor was extremely approachable and knowledgeable, and was always ready to offer advice or help for students facing conceptual difficulties. Excellent course.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

The instructor was very enthusiastic and helpful in every aspect of the course. He paid attention to the needs of students and ensured that everyone was following during lectures, provided extensions on homework assignments to account for exam dates, and was always available to discuss problems or concepts at the end of class. His exams were fair and tested material and concepts that also appeared on homework assignments, so the assessments always felt fair and reasonable. My course work feedback was detailed and helpful in identifying potential areas of improvement, and I thoroughly enjoyed all my discussions with the professor.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

Professor Alvarado made this course a very enjoyable and instructive experience, and I am especially happy to have taken this class with him, as he made all the material seem exciting and interesting, irrespective of the topic and difficulty. Truly a great experience.

EVALUATION: #2 (of 18)

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| • Participate in class | <i>always</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>always</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Going to office hours and working collaboratively was incredibly helpful. Prof. Alvarado held a consistent 4 hours a week and I always attempted to make 2 of them, and I felt this really improved my learning, especially since the material is quite tough.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

For the first few weeks, I really had trouble grasping material, and Prof. Alvarado made sure to emphasize that we wouldn't really begin to appreciate the course until midway through--and he was fully correct! I really enjoyed picking apart the nuances of analysis proofs, and I felt this greatly developed my understanding of the field as well as my understanding of how calculus truly works.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

*Study skills, using office hours, proof writing, general calculus...
I think the biggest thing was really learning how to go through proofs on my own, break them down, and find ways to understand the reasoning such that I could apply them to my own proof writing.*

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

I thought that the pace was really good--the theorem/definition sheets really synthesized everything each week, and the homework was just enough to allow a good grasp of the material. The expectations were always incredibly clear, and we were never hit by surprises, and Prof. Alvarado made sure to emphasize how much he wanted his class expectations to be crystal clear.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

I love interacting with Prof. Alvarado. He is incredibly available after class and in office hours, and provides very detailed feedback on exams. He encourages questions, and always makes sure to answer them fully--and often times is great at anticipating what questions will arise.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

Prof. Alvarado is an incredible teacher and a really caring professor! He really makes it clear how much he wants his students to succeed!

EVALUATION: #3 (of 18)

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| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>always</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Reviewing homework problems always help. To prepare for exams, for example, I would work through all of the homework problems one by one again and redo the proofs. This helps hone in my understanding of concepts a lot.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

Professor Alvarado is one of the best math professors here. His brings to class with great enthusiasm and is always ready to answer everyone's question in detail. Sometimes, he mentions interesting math facts (like the Weierstrauss function and the Cantor function) that surprises me and makes me want to continue my math journey after this class. His office hours are also really helpful, as he is always available to explain my questions in detail.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

Mathematical reasoning is always not so easy. Analysis is a class that really synthesized all my previous knowledge and pushes me to consider things critically, but also with rigor and precision.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

I find the pace of the class reasonable and the difficulty just perfect. As I have said, Professor Alvarado is a great lecturer and always explains the concepts in the most detailed and clear way possible, and would slow down or speed up and adjust the pace according to the class.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

Professor Alvarado always brings to class great enthusiasm and passion. He cares for his students greatly, both in terms of and beyond math learning (and he should for himself too!). I do not feel shy asking questions during class or asking further clarifications. He is also always reachable through email and through office hours and respond to them very fast.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

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| • Participate in class | <i>often</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>sometimes</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Going to office hours was very helpful. It was also helpful to stay after class and ask Professor Alvarado questions about specific material I did not understand from lecture. Throughout this course it was important to not get behind on the material.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

This course helped me think creatively when solving math problems. I had to be creative in my proofs, and I really enjoyed bringing a problem solving mindset into the course. This course also highlighted the importance of understanding every aspect of a theorem or definition. I had to make sure to pay attention to every detail.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I have a much better understanding of how to prove something. Whatever I may be trying to prove, I now am more confident in my approach and process of solving the problem. Proofs used to scare me a lot because they all felt so unique, but now I understand how to apply general knowledge to solve a unique problem.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The pace of the course was great. The three midterms were stressful but helped make sure I mastered all the material. The assignments were really helpful and I loved the inclusion of Theorem and Definition Sheets.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

All of my interactions with Professor Alvarado were great. He is always so helpful and eager to help me understand the material. Whether I stayed after class to ask a question or emailed him about a HW problem he is always very helpful. He makes sure that you understand the material and know why you are doing what you are doing. The learning environment was great and our lectures were engaging and fun.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

I had a great semester. Thank you!

EVALUATION: #5 (of 18)

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| • Participate in class | <i>always</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>rarely</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

- *Do homework*
- *Listen to class carefully*
- *Anticipate the forthcoming definitions & theorems*
- *Make proofs as rigorous as possible*

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

The use of desmos was very helpful.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

- Writing rigorous proofs

- Understanding the assumptions of theorems accurately
- Developing intuitions based upon definitions

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

I think there were simply too many examples, discussions on those examples, and clarifications on definitions and theorems. Certain things should go without saying, and if students do not understand them, they should improve their comprehension through reading textbooks and tackling practice questions independently. I am very sure that without such examples we could have dug more deeply and covered much broader material.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

The answer to the questions were very clear. I think Prof. Alvarado interacted with students with good pedagogical skills and enthusiasm to support their success.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

I strongly recommend that this class abolish questions that simply ask students to rewrite definitions or theorems. I understand that professors want students to remember and internalize certain things, such as the epsilon-delta definition of functional limits. However, in that case, you can ask a question about proving some functional limits being equal to some values without asking students to write down definitions. Also, such measures will test students on whether they can think, not whether they can memorize.
In addition, I also think that exams, for some similar reasons, should not adopt the exact same questions as what is already experienced by students. Except for the problems that address epsilon-N or epsilon-delta definitions, an exam should include questions that students who truly understood the essence of definitions and theorems can solve, but they cannot without properly developing right reasoning skills and right intuition.

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| • Participate in class | <i>often</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>often</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

Although I've taken proofs classes before, this class was a very rigorous perspective that showed how to really build things (namely the fundamental theorem of calculus) up from nothing but a few axioms. The process, along with the results, provided a lot of insight into math I had seen before at a more shallow level.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The course was very well designed to cover the material comprehensively, even after the switch this year to only 3 class meetings per week. The assignments were effective at building understanding of the materials.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

Professor Alvarado was extremely friendly and interested in students' perspectives. He made an effort to make the class fun and emphasize all of the resources available to students.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

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| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>sometimes</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

I studied the theorems and definitions every week. I also completed all my assignments and worked on them with classmates. To prepare for the exams, I studied in advance.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

The course is difficult, but I loved Calculus so Analysis was an extension of it that made it even more interesting. Professor Alvarado came to class with excitement, and even explained some math history. His way of teaching is entertaining, and makes you love the subject even when this is difficult. His passion for Analysis, kindness, and willingness to answer every question we had, made me understand the subject in a clear manner and attend every class. I believe Prof. Alvarado is the best math professor in the math department. I wish every professor was like him. His personality, knowledge and dedication are exceptional.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I gained analytical skills, and also I finally understand how to prove a theorem using previous knowledge.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The course was taught in a fast pace, but the way Prof. Alvarado presented himself to class and introduced many topics with graphs and examples, impacted the way I learned Analysis. The expectations were clear from day 1, and we had a lot of help for the Quantitative Center, TAs, and office hours so I never felt alone when I did not understand a topic or assignment.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

Prof. Alvarado answered all my questions. There were times that I could not attend his office hours due to other commitments and he met with me outside of his regular office hours. He created an inclusive and respectful environment where every idea was taken into consideration, and presented himself as a human (beyond being a professor), which is something many math professors lack at Amherst. I did not only see him as a professor but also as a friend (in a respectful way), and advisor (even though he is not my actual academic advisor).

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

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| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>always</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Attending office hours was particularly effective for improving my learning in this course.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

Professor Alvarado's classes intellectually stimulating. Analysis is often described as a more boring math class, but his lectures were always interesting.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I learned how to write proofs in this class. I learned calculus very deeply.

My favorite part of the class was the unit on real numbers. I especially enjoyed how every topic built on previous material, and that everything relies on the properties of real numbers and field axioms.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

*The pace of the class was fast due to the amount of material, but Professor Alvarado made it very manageable.
(Personally, I would have much preferred two midterms instead of three).
Lectures were intellectually stimulating. I think I attended every one.
Assignments and expectations were very clear.*

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

*Professor Alvarado really encouraged people to ask questions during lecture. If he saw you making a confused face, he would prod you to ask for clarity. I also felt that that fostered a camaraderie within the class. He absolutely cultivated an inclusive learning environment.
At the beginning of the semester Prof Alvarado sent us all a poll to determine our availability and then decided his office hours schedule so that everyone could make at least one hour per week.
His office hours were very helpful and very well attended as a result.
Exam feedback was very clear and helpful.*

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

Dr. Alvarado is an amazing professor! His love for math and teaching are obvious!

EVALUATION: #9 (of 18)

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| • Complete assignments | <i>often</i> |
| • Meet with professor outside of class | <i>often</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Going to office hours every week, going through the homework even when I was too busy to finish it, and paying attention during class were particularly effective towards my learning.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

Even as someone who really likes math, I tend to find analysis a little tedious and unexciting, but Professor Alvarado's passion for the subject is really infectious.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I actually know what I'm doing when writing a more analysis-based proofs now, so I think that's pretty neat. There's also a certain exactness in analysis that I think sometimes we can afford to put into other aspects of work and life.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

Lectures and instructions were always very clear, even though we had to move quickly. I think the pace was necessary, even if many students were struggling with it.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

I really enjoyed Professor Alvarado's office hours, as they felt casual and he was always very willing to help with anything. He's also receptive to questions in class, and will take the time to explain things thoroughly if a student was confused.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

A very good introduction to real analysis. I respect Professor Alvarado's exactness as an analyst a lot.

EVALUATION: #10 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|------------------|
| • Prepare for class | <i>always</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>sometimes</i> |
| • Complete assignments | <i>often</i> |
| • Meet with professor outside of class | <i>sometimes</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

I completed every theorem/definition sheet, attended the Qcenter office hours three times a week for 2-3 hours, and completed most of the homework assignments.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

The instructor was clear about expectations and encouraged independent challenges in his homework assignments. Their mere passion for the material and their effective teaching style helped shape my interests and imagination about the material.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I learned how to be more effective in my work strategies and study habits. The course is no joke, so learning to learn the material while learning the material was hard, and definitely something I wish I learned before taking the course. The instructor gave me great advice and I definitely benefited from it.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The pacing was super fast. Sometimes it was hard to keep up and it felt like I was on auto-pilot when completing the homework assignments, but that seems to be the nature of all math courses here.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

The instructor is super thoughtful and encouraging. They were always available to make time and meet outside of class, and even attending events students were in outside of the course. The feedback was always constructive and they checked in to see how we were doing throughout the semester.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

Never disappointed. The professor really knows how to teach the material and even points out common misconceptions and confusion, which helps me avoid making those mistakes. I really loved the class, even if it was difficult.

EVALUATION: #11 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|---------------|
| • Prepare for class | <i>often</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>often</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>often</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

I go to Q center almost every day, and start making review packets two week before exams.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

My math major friends are often shocked/confused/amazed when they find out that I am taking analysis as a LJST major. They repeatedly tell me that analysis is the class where you only take it to fulfill the math requirement, and if you need to take analysis for some reason, "take it with Alvarado. His research is in analysis and he is so excited about the class." I definitely had doubts walking in to analysis during the add/drop period, but after having my first class with Professor Alvarado, I knew that if I ever wanted to learn Analysis, I have to take it with him this semester to have the best learning experience. Professor Alvarado gave me the impression that he is so excited about teaching analysis that he is bouncing around in class and flying on a broom stick. He shares with us his fascination about the Weierstrass function or Cantor's function, as well as elegant proof techniques. After taking Analysis with Professor Alvarado, I feel much more

confident about learning math on my own or studying a concept by building it from the ground up. I got better at reading research papers in computer science and economics, and understanding proofs in the papers.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I became more confident with proofs. I noticed this especially when I have to prove something for my CS classes or understand proofs on research papers.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

Professor Alvarado moved at a perfect pace needed to cover all the materials. That being said, I feel like we are constantly trying to catch up and we could have benefited from having 4 classes a week. But Professor Alvarado included materials that we need to know in our homework so that we did not miss any content even though we only had 3 classes a week after department changes. He maintains an online notebook so I can go back and review notes that I missed. His notes are so clear and color coded (like professor Zhang in Multi!) that it is really easy to understand. I learned a lot from his homework and by doing practice questions.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

Professor Alvarado always answered my questions really patiently in class, but also before class, after class, during Math/Stat lunch, and at office hours. He always checks how we are doing outside of analysis and if we have had a fun weekend. He tells jokes and show us camels on Wednesday. Super inclusive class environment!

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

It's Hump day!

EVALUATION: #12 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

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|--|------------------|
| • Prepare for class | <i>often</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>often</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>sometimes</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

I used the Q center when I was working through my homework. This made me less frustrated when I was stuck on a homework question.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

This course made me more critical and skeptical of previous math courses I have studied. Proving basic ideas rigorously gives more value to those ideas. It made math historical and more scientific.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

The best skill I developed in this course was reviewing my notes from class with our theorem and definition sheets. This allowed me to study for exams and do homework in a more productive manner.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The syllabus was extremely clear on expectations, and I referred to it whenever I had questions. The assignments I felt were more difficult than the in-class material. This made me frustrated at times because I could follow along in class but struggled when I was completing homework on my own. The course had a coherent structure that was almost narrative. This contextualized what we were doing in each class. We had an ultimate goal and we achieved it by the end of the semester.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

Professor Alvarado was the most energetic and kind teacher I ever had. He cared for his students in so many ways. He fostered a relationship with every one of his students. We felt like a family.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

Analysis was quite difficult for me. I struggled more than I ever had in a math course. I can't imagine a better professor to teach me this course. Professor Alvarado was so compassionate. I am extremely lucky to have taken a course with him.

EVALUATION: #13 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|---------------|
| • Prepare for class | <i>always</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>always</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>always</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Reading back through the course notes and doing all the example problems

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

Professor Alvarado always gave us motivating examples, and walked us through why what were studying was important.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

Rigorous proof writing with attention to detail

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

Assignment expectations were exceedingly clear. Presentation was precise and motivated

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

I spent a lot of time in office hours. Professor Alvarado's empathy and teaching skills are the best I have experienced. His feedback on tests was clear and carefully thought out while still being encouraging.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

The material in this course was the most challenging that I have experienced, but Professor Alvarado was working as hard as he could to make sure I could learn best. It was clear he was "on our side" and wanted us to succeed from day one. This commitment manifested in every aspect of the class ranging from assignment deadlines to pacing of the course. He was always there to talk through things when I became overwhelmed with the material, and his compassion when working with me was encouraging in the deepest sense of the word. Professor Alvarado is an excellent professor across the board. he has made my experience as a math major, and as an amherst student so much better.

EVALUATION: #14 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|------------------|
| • Prepare for class | <i>always</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>sometimes</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>often</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

I would actually make a question bank from our class notes so that way I had a way to practice the material from lecture that we needed to know in preparation for exams.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

So many ways! It was incredible how everything we learned in Analysis so beautiful built upon the previous sections, and it all came together in a really cohesive way towards the end of the class. It really challenged me to ask why, as a lot of the problems we had to prove were seemingly simple facts we learned in calculus class that now needed to be rigorously proven.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

My proof-writing ability improved significantly and I felt that I became much better and faster at identifying when the applications of certain theorems / definitions applied to the problems we had to complete.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

I thought the pace was mostly fine, but we had to move faster than anticipated for a large portion of the class after Professor Alvarado was absent, which meant I had to spend significant extra time outside of class reviewing notes. The assignments were honestly really hard but challenged me in a way that I felt helped me to really understand the concepts. Also, having the course notes available on Moodle at all times was actually incredible. The notes are incredibly well-presented and organized, which really helped when reviewing for exams, getting homework done, or simply going over topics outside of class

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

Always amazing, I love Professor Alvarado's positive energy and enthusiasm for math. He made coming to class everyday something to look forward to! I also find his teaching style to be super effective, I am always able to follow his reasoning when working through a problem. There wasn't much time for questions in class as we had to move rather quickly, but he was always receptive to student questions anyway.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

I want to shout out Wenzhi at the Q-Center, he was absolutely phenomenal! I could not have completed many of the homework assignments without him, and I really appreciate his patience and care for all of us.

EVALUATION: #15 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|------------------|
| • Prepare for class | <i>often</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>sometimes</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>sometimes</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Go to Q Center Hours with Wenzhi!!

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

I really appreciate Alvarado's energy ad passion for math. I appreciate how attentive he is to his students. He makes it an effort to learn everybody's names, and even remembers how many office hours we've been to. He really is one of the best teachers I've had.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

Problem solving

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

Honestly, the pace is too fast for me. It's hard to write down class notes in the moment while fully understanding what the hell is going on

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

Alvarado is extremely engaged with his students and has a very inclusive learning environment. I genuinely mean that

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

The course moves extremely fast, but as long as I go see Wenzhi in TA hours I can catch up

EVALUATION: #16 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|------------------|
| • Prepare for class | <i>always</i> |
| • Attend class | <i>often</i> |
| • Participate in class | <i>sometimes</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>often</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

took notes, did homework, memorize theorems

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

engaging lectures, taught clearly

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

analytical skills, proof writing

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

clear expectations, inclusive, available wanted us to succeed, helpful, engaging lectures

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

great interactions with course.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

amazing professor!! helped me through this class

EVALUATION: #17 (of 18)

Thank you for taking the time to provide feedback about your experience in this course. Teaching is highly valued at Amherst, and your reflections are an important part of our efforts to assess and improve our teaching. Please be thoughtful, fair, and honest. Your instructor will be able to view your responses only after final grades have been submitted, and to them your identity will be anonymous. As part of the reappointment, tenure, and promotion process, your responses will also be read by the president, provost and dean of the faculty, and other senior faculty, and to them your identity will not be anonymous.

PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|---------------|
| • Prepare for class | <i>always</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>always</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>rarely</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

The theorem/definition sheets Alvarado had us do once a week were very helpful. I took them as an opportunity to read through notes/proofs from class to make sure I understood what he taught us. I then wrote out each of the theorems/definitions.

Another thing I did was I consistently attended Wenzhi's Q-Center hours. He was extremely helpful and taught me a lot about writing proofs.

Before exams, I studied with a friend and wrote things out on blackboards/whiteboards and I found that super helpful.

Also, I asked questions during class whenever I was confused to get some quick clarification. Alvarado did a good job answering my questions and explaining things in different ways each time. He used visual explanations (graphs, venn diagrams, etc.), used metaphors, previous concepts we had learned, etc. to explain. He also really made use of technology during class to explain concepts - he's a big desmos fan which is honestly really great and a great tool that he used to explain things throughout the course. I have never seen anyone use desmos like that!

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

The course itself was very different from any math class I had taken before. We looked at calculus topics that I had found simple before and turned them inside out - making me question if I really understood things that I had previously found easy.

Professor Alvarado was so excited to teach us. He came to class every day with great energy, jokes, random facts about math history, and it honestly made all the difference for me. The class is HARD, it's analysis after all, but having a professor that cares so much about teaching us kept me engaged even on hard days.

Instead of starting hard topics with the 'hard definitions,' Alvarado first explained the intuition behind a topic so that when he did make it rigorous, we at least had some idea of what was going on.

Alvarado taught ALL of the students in the class. By this I mean that he made sure to explain things to those of us that were very confused and maybe had less experience with proofs/advanced math, but he also kept it interesting for more advanced students by answering the questions they asked which rest of us didn't even understand with images, short proofs, etc. He never made any of us feel dumb for our questions and made the classroom a place where we could all feel comfortable enough to ask questions.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

The most significant skill I developed in this course was proof writing. I've taken groups and some other math electives where I have had to write proofs before but I feel like analysis really cemented my proof writing skills. I was able to think through problems and write ideas down. I'm proud of how far I have come over the course of the semester.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The pace was fast. It's an advanced math class so I wouldn't expect otherwise. Having a 3-day week rather than a 4-day week, however, made it easier for me to keep up with the material since on off days I could start the homework and read class notes to catch up.

Information was presented to us very clearly, including deadlines for assignments, his expectations for us, etc. He understood that his class was a lot of work, and was an empathetic person but at the same time expected the best from us.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

My interactions with Professor Alvarado were great. Outside of class, I went to visit him during office hours a few times and found his answers to my questions very helpful. I also emailed him at times and he was fast to respond. As I mentioned above, Professor Alvarado was always willing to answer any and all student questions and made himself super available to students (even though I know he's super busy!). My exams were graded quickly and thoroughly with comments everywhere explaining how I could've gone about a proof when I did it wrong and encouragement (when right and when wrong). The feedback I received was very helpful.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments:

Professor Alvarado is an excellent professor and Amherst and the math department are so lucky to have him.

EVALUATION: #18 (of 18)

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PLEASE NOTE: Use the TAB key or your mouse to move between questions; the Enter / Return key will submit the webform.

For the questions below, please evaluation your own commitment to and effort exerted in the course.

1. How often did you:

- | | |
|--|------------------|
| • Prepare for class | <i>often</i> |
| • Attend class | <i>always</i> |
| • Participate in class | <i>sometimes</i> |
| • Complete assignments | <i>always</i> |
| • Meet with professor outside of class | <i>sometimes</i> |

2. Using specific examples, please briefly describe what you did that was particularly effective for improving your learning in this course:

Review class material after class every week.

The following questions ask you to reflect upon the ways the course and instructor helped you to develop your thinking, skills, and abilities. Please provide specific details to support your reflections.

3. In what ways did this course and instructor stimulate or shape your intellectual interests, thinking, and/or imagination?

The instructor's enthusiasm and passion for the subject helped me grasp the concepts during class.

4. Please describe the most significant skills and/or knowledge that you gained or further developed during this course:

I learned to ask right analytical questions such as does a solution exists, is it unique and learned to prove things from first principles.

The following questions ask you to reflect on how the course structure and your instructor's teaching affected your learning in the course. Please provide specific details to support your feedback.

5. Considering the overall design of the course, how did the pace, presentation of information, clarity of expectations, assignments, activities, and/or discussions in the course impact your learning?

The expectations were clear from the start and the instructor did an excellent job of organizing every concepts with examples and proof. The assignments also helped to strength understanding of the material in class.

6. Please describe the nature of your interactions with the instructor in the course, including the instructor's engagement with student questions and ideas in class, their cultivation of an inclusive learning environment, their availability outside of class, and the feedback you received on your coursework.

The instructor made sure to provide a inclusive learning environment and was available outside of classes.

Please use this space to provide any additional comments you have about this course and/or instructor.

8. Additional comments: