Instructor: Christensen, Jens G. Course: Number Theory \& Math Reasoning<br>15 surveys / 17 enrolled in MATH 250 A (MW 1445)

## Student:1

Reason(s): Major or minor requirement
Additional Reason(s): had to retake it
Effort: I put a very very large amount of effort into this course. The course material is incredibly hard and takes a lot of time and work to understand.
Understanding \& Appreciation: This course gave me a second chance at the material from a new perspective. There are definitely very challenging parts of the course and I still do not understand very well doing it a second time over, but I believe that is the nature of this class. I don't think I have developed a particular appreciation for the subject due to this course.
Intellectual Growth: I think the biggest thing that this course did for me was truly push my boundaries in terms of being challenged by a class. I have never been so happy to get a B or C on something.
Quality: I think that Jens does a good job with this course considering the level of difficulty of the class. It was taught from a very different perspective then when I took it before, which really helped me understand more of the material this time around.
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## Student:2

Reason(s): Major or minor requirement
Additional Reason(s):
Effort: Generally I spent around two or three hours on homework that was generally handed out weekly. As long as I stayed on top of doing extra credit, studying for tests did not take unreasonable amounts of time.
Understanding \& Appreciation: I had never done number theory before, however I had taken Linear Algebra which similarly had a lot more proofs than what I'm used to. While I did terribly in Linear Algebra dealing with the proofs, I feel like I really solidified my understanding and competence with proofs in this class.
Intellectual Growth: In this course if you did extra credit work occasionally, even if you didn't necessarily have new homework due, then it was a lot easier to succeed in tests and understand in class. So I really learned to consistently work and maintain my level of understanding.
Quality: I really didn't have any problems with the teaching of this course. I liked the amount of work were we given and I think that the professor explained concepts well in class and minimized the amount of confusion that could arise from introducing too many specific definitions too soon.
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## Student:3

Reason(s): Major or minor requirement
Additional Reason(s):
Effort: A lot. Never done proofs before, so probably the most challenging course I have taken.
Understanding \& Appreciation: Used to think that Applied math was the only branch of math that existed. This class allowed me to appreciate the difficulty of studying pure mathematics.
Intellectual Growth: Realized that I was not very good at pure math, so turned part of my focus to deciding whether I wanted to double-major with math or have two minors and a major instead.
Quality: Sometimes, the proofs were hard to follow. I think it's best to write down the steps of proving as a guide for students to know what path the instructor intends to take to prove a theorem. Loved the course!

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| Effectiveness Conveying Course Material | Teacher-Student Interaction and Rapport | Course Standards and Challenge | Grading and Evaluation | Student Self-Rated Learning | Other Aspects of Teaching |
| 1: A | 3: A | 8: SA | 5: SA | 2: SA | 13: A |
| 7: SA | 10: SA | 14: A | 17: SA | 4: A | 21: A |
| 9: N | 15: SA | 20: SA | 19: A | 6: SA | 22: A |
| 12: A |  |  |  | 11: SA |  |
| 18: A |  |  |  | 16: A |  |

## Student:4

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Reason(s): Major or minor requirement
Exploration of possible major or minor
Elective within major or minor
    Reputation of the instructor
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Additional Reason(s): NA

Effort: A little more so than other courses, but I find this to be a course that relies much more heavily on natural ability than work ethic (work ethic in other courses I find can take you further than it can in this course), so I'd say I put in effort to the point where I find the rest just comes down to ability.
Understanding \& Appreciation: Increased understanding and appreciation, however lowered interest into the topic as a whole. These type of mathematics is very, very, very tedious which at times can be boring.
Intellectual Growth: I think it has me developed my organizational skills and made me a more contextual student- not just reliant on intuition and instead thorough analyzes all thoughts.
Quality: Good teaching. The only thing that I consider something that could be improved is the remarks he made about how his tests would be at the beginning of the year versus what they're actually like. The content isn't the problem, but to start the year a very easy minitest was given and we were told the course would slowly progress in difficulty, however on the very next test, a major one, the average landed at around a $\mathrm{C}+$, much lower than the first minitest, not slightly lower or slightly harder. Aside from this discrepancy I have no gripes with the professor. One thing he does better than almost all teachers is office hours.
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## Student:5

Reason(s): Major or minor requirement Elective within major or minor
Additional Reason(s):
Effort: This course requires a great deal of effort due to the difficulty of the material. Studying for tests is quite a challenge because there is not much review material, there is one HW per week, and the test will always have different proofs anyway so there is no 'set' type of problem. This makes it hard to study and hard to do well in the class. The homework require a significant amount of effort as well because usually there are one or two problems which can take hours of thinking.
Understanding \& Appreciation: My understanding and appreciation definitely increased. The course material was difficult to grasp at first but as we moved on it was easier to piece things together.
Intellectual Growth: This course pushed my thinking in different ways. The fact that very little studying can be done makes this course quite ability-based. Furthermore, the proofs themselves are very sequential, step-by-step, must apply to a general group of numbers, and can take some getting used to. This forced my brain to think more critically and understand general trends rather than specific types of problems.
Quality: I believe the quality of teaching was high. At times there was disorganization in the plan for the day but this was not a very influential aspect of the course and rarely caused problems. The explanations were thorough and the professor answered all questions on the spot with ease. The professor also kept a nice easy-going vibe in the class which allowed for a nice blend with the intenseness of the material.

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| Effectiveness Conveying Course Material | Teacher-Student Interaction and Rapport | Course Standards and Challenge | Grading and Evaluation | Student Self-Rated Learning | Other Aspects of Teaching |
| 1: A | 3: SA | 8: SA | 5: A | 2: D | 13: A |
| 7: A | 10: A | 14: SA | 17: A | 4: A | 21: A |
| 9: N | 15: A | 20: SA | 19: N | 6: A | 22: A |
| 12: N |  |  |  | 11: A |  |
| 18: A |  |  |  | 16: N |  |

## Student:6

Reason(s): Exploration of possible major or minor
Elective within major or minor
Reputation of the instructor
Interest in the course material

## Additional Reason(s):

Effort: Likely not as much as I should have, but a fairly decent amount.
Understanding \& Appreciation: Fairly well, when preparing for the final I was able to complete other university practice final exams with somewhat ease when I will likely be getting a B in the class (not MIT's exam however)
Intellectual Growth:
Quality: Professor Christensen did a great job teaching Number Theory. He was very encouraging and available and willing to stop during any lecture to answer students questions to ensure they understand.
I would give one recommendation for future classes: give even more extra problems in addition to homework. I find that when preparing for exams other than the weekly or biweekly problem set the only ways to prepare are reading through notes (which are actually quite good and generally sufficient); however, a set of problems even if they are not original to this university would be helpful.
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## Student:7

Reason(s): Exploration of possible major or minor
Additional Reason(s):
Effort: It was hard to study for this course because there was no textbook and it was very difficult to find the subject matter online.
Really the only resources available were in class notes, but if something was unclear, there's not much you can do.
Understanding \& Appreciation: It was essentially an introductory proof class, which definitely helped me to learn this skill but I have a hard time understanding the class as a whole.
Intellectual Growth: It definitely helped with critical thinking skills.
Quality: I had a hard time learning in this class due to the few resources provided by the professor, but he was definitely engaging, attentive, and helpful when you asked him to be. It was just hard for me to learn the material independently, which is mostly my learning style.
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Student:8
Reason(s): Elective within major or minor

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## Additional Reason(s):

Effort: Studied $10+$ hours a week as well as attended class daily because we do not have a course book, so attending class was a must.
Understanding \& Appreciation: This course allowed me to see math for the basis of what it is, the course focus less on the numbers and more on the equations of how we would solve to find certain numbers
Intellectual Growth: This allowed me to appreciate math more as well as think outside the box, now I know how to do proofs Quality: Professor Christensen does a great job of keeping the class involved and making this course more interesting than it actually should be. He is always available to help and does a great job of explaining the material
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## Student:9

Reason(s): Major or minor requirement
Additional Reason(s):
Effort: I completed the weekly problem sets and studied for all assessments
Understanding \& Appreciation: As an introduction to proofs, this class taught me the thought process behind proof making/writing Intellectual Growth: This class introduced a new aspect of math from what I have ever seen before in that there was no computational work. It was very interesting to work through the "why" behind math.
Quality: Professor Christensen is a great professor and made his lessons as engaging as a class about Number Theory could be. Although class periods were long, I believe Professor Christensen did a good job explaining the concepts and went through the lessons at an appropriate pace.

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| 1: SA | 3: SA | 8: SA | 5: N | 2: A | 13: SA |
| 7: SA | 10: SA | 14: SA | 17: N | 4: SA | 21: SA |
| 9: N | 15: SA | 20: SA | 19: SA | 6: SA | 22: D |
| 12: SA |  |  |  | 11: SA |  |
| 18: SA |  |  |  | 16: SA |  |

## Student:10

Reason(s): Major or minor requirement
Exploration of possible major or minor
Reputation of the instructor
Interest in the course material

## Additional Reason(s):

Effort: The course requires a lot of effort due to the quality of material. The weekly assignments can vary in difficulty greatly Understanding \& Appreciation: This course defined all understanding I have of number theory creating and nurturing appreciation of number theory.
Intellectual Growth: This course aided me with my work ethic and study habits.
Quality: The overall quality of the teaching is good. The course moves very fast at times but the teaching is consistent. My biggest complaint is the lack of a text book making it more difficult to process the material from a different perspective

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| 12: N |  |  |  | 11: A |  |
| 18: A |  |  |  | 16: D |  |

Student:11
Reason(s): Exploration of possible major or minor Core or Areas of Inquiry (distribution) requirement Interest in the course material
Additional Reason(s):
Effort:
Understanding \& Appreciation:
Intellectual Growth:
Quality:
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## Student:12

Reason(s): Major or minor requirement
Additional Reason(s):
Effort: I have tried my hardest at first but it became a major anxiety in my life to the point I couldn't put effort into class without panicking so mixed effort levels $\backslash \quad$ ( $\square$ ) $/$
Understanding \& Appreciation: It's so difficult I respect the material and logic way more Intellectual Growth: Challenged the way I think about problem solving and how to study confusing material Quality: I think it was very high quality. He was kind and seemed to enjoy teaching it the material was simply difficult to understand and explqin
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## Student:13

Reason(s): Exploration of possible major or minor Interest in the course material
Additional Reason(s):
Effort: I did all the homework on time and went to office hours a couple of times when I didn't fully understand a problem. I studied a few days in advance for exams.
Understanding \& Appreciation: I learned a lot about the integers and the relationships between numbers. I really want to take more math after this class.
Intellectual Growth: I learned how to write more clearly and concisely, especially when it came to proof-writing.
Quality: Professor Christensen did a great job teaching this class, and I always looked forward to learning new things from him. He

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handled all my questions very well, even when they were more trivial in nature. I do wish, however, that we had more practice problems to study from. I also wish that, in class, he went a little slower so that we could fully see how he was getting from point A to point $B$ in a certain proof so that we can understand it that much better.
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## Student:14

Reason(s): Major or minor requirement
Additional Reason(s):
Effort: I studied before doing homework a bit and went through everything before exam and that's it.
Understanding \& Appreciation: This class is a relately more interesting class to me in Maths, so I have always felt happy about this class.
Intellectual Growth: It teaches me how to think logically, thinking clearly about conditions and conclusions.
Quality: The Professor is relatively good at teaching what we are supposed to know. He is fun sometimes.
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## Student:15

Reason(s): Major or minor requirement
Additional Reason(s):
Effort: I attend every class, I take notes in class, I study in advanced for the tests, and I go to office hours whenever I need help with a problem.
Understanding \& Appreciation: I was very excited to take a class that is driven by mathematical proofs. I am pretty sure I want to focus on theoretical mathematics, and this class helped me appreciate what exactly that would entail.
Intellectual Growth: This course taught me how to make a logical argument. It also taught me how to question the arguments of others. I use what I learned in this class when I need to write an essay in other classes.
Quality: Professor Christensen is a very good professor. He understands what he is going to teach ahead of time, and he conveys the materials in an understandable manner. He handles questions very well. Whenever a student is lost he will slow down so that we are all on the same page. He also does not always give us the answer directly. Often times he will pause and make a student suggest how to proceed with a problem. I would happily take another course taught by Professor Christensen.
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