

6.728 Applied Quantum and Statistical Physics

Survey Window: Fall 2013 End of Term

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Aiello, Clarice Demarchi, Teaching Assistant - Overall rating: 6.6

Teaching in Lecture

Quality of Teaching	<i>Rating Scale: 1=Strongly Disagree, 4=Neutral, 7=Strongly Agree, N/A=Not Applicable (7 is best)</i>							RESPONSES	MEDIAN	STDEV
	AVG	1	2	3	4	5	6			
Stimulated interest	6.6							19	7.0	0.77
Displayed thorough knowledge of subject material	6.5							19	7.0	0.96
Helped me learn	6.6							19	7.0	1.01

Overall rating	<i>Rating Scale: 1=Very Poor, 7=Excellent, N/A=Not Applicable (7 is best)</i>							RESPONSES	MEDIAN	STDEV
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Comments on teaching (strengths, areas for improvement)

[Student 4617](#) - Clarice is definitely the best TA that I have had at MIT. She was not only knowledgeable, but asked all of the right questions during tutorials so that students figured out the problems by themselves. She also provided great intuitive explanations for many of the phenomena discussed in class.

[Student 4665](#) - Homework tutorials were very helpful in working on the problem sets but sometimes took too long. It would be good to manage the time better by avoiding tangential discussions and issues that took away from the material.

[Student 4869](#) - Clarice often had trouble answering my questions - she was nice, but often a little unknowledgeable.

[Student 13589](#) - She spent tons of hours per week helping the students with the homework so that we didn't fail. An amazing TA. The best of any class in all my years of college.

[Student 14664](#) - I was really surprised and delighted to find I had such a helpful TA. Clarice was very well prepared for discussions and was really knowledgeable of the material (and therefore able to give good answers to many unexpected questions). Clarice was really encouraging with students and made herself easily available. I am really impressed by and grateful for her work this semester.

[Student 18891](#) - Best TA I've had for a class. Although the assignments for this course were very difficult, Clarice really put them into perspective and was determined for students to understand the material. Gave so much of her time. Thanks!

[Student 21736](#) - Excellent TA, committed to making sure students learn the material. Was quick to respond to emails and answer any questions. Posted very detailed pset solutions and useful notes.

[Student 29880](#) - Great help on the understanding of quantum mechanics. I have to say thanks to my TA. She really did an incredibly great job in finding the useful material for us and clarifying the concepts. I cannot appreciate more for her spending so much time on the tutorials. Also, I learnt a lot from her opinions. Thank you so much :)

[Student 30255](#) - Fantastic teacher - most dedicated T.A. I have ever had!

[Student 31610](#) - Amazing, Good at responding to emails with questions, and helps us through (very patiently) tough pssets. Class would not be possible without her.

[Student 31840](#) - Great TA; really wants us to understand ideas behind the math; takes time to explain things even by following up with emails

[Student 32940](#) - Clarice was very clear in explaining concepts and outlining solutions. She welcomed every question and was extremely patient in answering them. She went through the problem sets very thoroughly, and really helped me understand the course materials better.

[Student 42917](#) - Clarice was by far the most committed, first-rate, and enthusiastic TA I've ever had. Couldn't have asked for more.

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6.728 Applied Quantum and Statistical Physics



Survey Window: Fall 2013 End of Term | [View Current Catalog Entry](#) | [Print Report](#)

Report Includes Data for:

Students: For credit

Subjects: 6.728 Applied Quantum and Statistical Physics - Lecture L01

[\(filter data\)](#) 

Eligible to Respond: Total # of Respondents: 29  **Response rate:** 69%  **Overall rating of subject:** 6.2 out of 7

Download Set of Individual Student Responses: PDF raw data

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INSTRUCTORS

Quality of Teaching	<i>1=Strongly Disagree, 4=Neutral, 7=Strongly Agree, N/A=Not Applicable (7 is best)</i>			<i>1=Very Poor, 7=Excellent, N/A=Not Applicable (7 is best)</i>
	Stimulated interest	Displayed thorough knowledge of subject material	Helped me learn	
Hagelstein, Peter L. , Lecturer (LEC)	6.3 (20)	6.9 (20)	6.2 (19)	6.5 (20)
Aiello, Clarice Demarchi , Teaching Assistant (LEC)	6.6 (19)	6.5 (19)	6.6 (19)	6.6 (19)

Aiello, Clarice Demarchi, Teaching Assistant in Lecture L01 - Overall rating: 6.6

Quality of Teaching	<i>Rating Scale: 1=Strongly Disagree, 4=Neutral, 7=Strongly Agree, N/A=Not Applicable (7 is best)</i>										
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	AVG	1	2	3	4	5	6	7	RESPONSES	MEDIAN	STDEV
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SUBJECT

SUBJECT QUESTIONS

Rating Scale: 1=Strongly Disagree, 4=Neutral, 7=Strongly Agree, N/A=Not Applicable (7 is best)

	AVG	1	2	3	4	5	6	7	RESPONSES	MEDIAN	STDEV
Subject expectations were clearly defined	6.4								20	6.0	0.75
Subject's learning objectives were met	6.3								20	6.5	0.8
Assignments contributed to my learning	6.6								20	7.0	0.69
Grading thus far has been fair	6.5								19	7.0	1.02

Rating Scale: 1=Too Slow, 4=Just Right, 7=Too Fast, N/A=Not Applicable (4 is best)

	AVG	1	2	3	4	5	6	7	RESPONSES	MEDIAN	STDEV
The pace of the class (content and assignments) was:	5.3								20	5.0	0.86

	AVG	RESPONSES	MEDIAN	STDEV
Average hours you spent per week on this subject in the classroom	4.6	20	4.0	1.1
Average hours you spent per week on this subject outside of the classroom	12.5	20	12.0	4.74

Rating Scale: 1=Very Poor, 7=Excellent (7 is best)

AVG	1	2	3	4	5	6	7	RESPONSES	MEDIAN	STDEV
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Comments on the subject (strengths, areas for improvement)

[Student 4617](#) - This class is beautifully designed. I feel very prepared for all of the other 6.7XX classes and I have a true appreciation for quantum mechanics. I really would like to explore the material further and learn more. I cannot think of ways to improve the course; it is very well designed and very well run.

[Student 4665](#) - Problem sets were helpful in learning but sometimes had time consuming algebra/calculus. This may not be avoidable but was sometimes frustrating.

[Student 13589](#) - Tough course that requires a lot of time and energy but you learn a lot and can apply to research if you deal with any sort of quantum level problems.

[Student 18891](#) - This course is fast and the work is challenging, but ultimately it is extremely rewarding. Keep it the way it is.

[Student 25905](#) - Fantastic course. Very different perspective than traditional classes in Quantum. Only concern would be for someone who hasn't seen quantum before - the class very quickly introduces higher level concepts/notation.

[Student 28600](#) - Sometimes the Psets are time-consuming. But the lectures are great.

[Student 29880](#) - The subject covers a lot of interesting topics including quantization of EM field (basic QED, which is awesome!) and treatment for H₂⁺ ion and H₂ molecule. Such topics are usually not touched in an introductory quantum class.

[Student 30255](#) - This class was a great way for me to get into QM and stat mech without taking several semesters to do so. It seemed like most students had had previous exposure to QM. For those who didn't have this background, more motivation for why a particular approach is being taken to solve a problem may be helpful. Also more explanation of intermediate steps in solutions and in the textbook could have been helpful.

[Student 31610](#) - So much information.

[Student 31840](#) - The best introductory quantum mechanics I ever had; nice analogy with classical mechanics, which is often not done even in most textbooks

[Student 32940](#) - A very challenging course but incredible learning experience.

[Student 42917](#) - Many homework problems did not give much intuition.

[Student 46780](#) - I think the class should be split into two semesters. Too much material was crammed in to go into any depth.

QUESTIONS USED FOR THE HKN UNDERGROUND GUIDE

What's Cool?

[Student 4617](#) - Professor Hagelstein Clarice Aiello Excellent textbook Very thoughtfully designed problem sets Broad understanding of quantum mechanics for both pure physics as well as electrical engineering applications.

[Student 4869](#) - Learn 8.04 + 8.05 + large chunks of 8.044 and 8.03 in one semester. Lenient grading Professor Hagelstein

[Student 13589](#) - Clarice's Tutorials Lectures are informative

[Student 21736](#) - Material Applications

[Student 29880](#) - The teaching is associated with a lot of interesting real phenomena, and the simple derivation could lead to results that agree with the experiments.

[Student 30255](#) - Subject material, Clarice's teaching, novel approach to QM, Prof Hagelstein's quips ("the Hagelstonian", general musings on theory vs experimental physics)

[Student 31610](#) - Quantum mechanics Applications

[Student 32940](#) - You really learn a lot about Quantum Mechanics.

What's not so Cool?

[Student 4617](#) - The problem sets take a lot of time!

[Student 4869](#) - OH MY GOD I'M DROWNING IN PHYSICS

[Student 13589](#) - Time spent on Psets

[Student 21736](#) - Too Fast

[Student 29880](#) - Sometimes a little bit feel that the detailed derivation step by step is not that necessary. Maybe using ppt is kind of better

because most of those steps can be imagined immediately and are not the main parts of the story.

[Student 30255](#) - Problem sets take a lot of time - be prepared to allocate more than usual class load. Solutions and textbook sometimes left out the relevant trick to solve a problem

[Student 31610](#) - So much math Building character Psets

[Student 32940](#) - Difficult and long problem sets.

prereq

[Student 4617](#) - Having seen some amount of quantum mechanics is absolutely essential. At the very least, particle-in-a-box and the harmonic oscillator, just so that you aren't lost or left behind by the sheer speed of the material. Also experience in electromagnetism would be helpful too.

[Student 4869](#) - 18.03. 8.02. Experience with eigenvalues and eigenvectors, Prior knowledge of quantum helpful.

[Student 13589](#) - Undergrad or 1st level quantum physics Experience with MATLAB/Mathematica Thorough knowledge of calculus, diff eq, and classical physics

[Student 21736](#) - Good background in math and physics

[Student 28600](#) - basic math, complex numbers, Fourier transforms, matlab.

[Student 29880](#) - Have basic knowledge of differential equations and physics.

[Student 30255](#) - A previous Quantum background would have been helpful. Math and programming elements were tractable for a course 6 student

[Student 31610](#) - Exposure to a decent amount of quantum physics Math (i don't know what type of math?)

[Student 46780](#) - I think you need to have taken a class in quantum mechanics before taking this class in order to get much out of it

[Student 47706](#) - I had background in Quantum Mechanics and I did not have problem in it. But, I expect to have troubles if that was the first time I was encountering QM.

Is subject content theoretical or practical?

[Student 4617](#) - This class was fairly theoretical, but covered a lot of applications relevant to an electrical engineer.

[Student 4869](#) - The content is spot-on: certainly rigorous, but with plenty of intuition and practical considerations thrown in. This class goes really fast - expect to learn 3 semesters of undergraduate physics material in one semester.

[Student 13589](#) - Mostly theory with applied material that touches on real experiments conducted throughout the history of QM. Very broad topics covered at a quick pace.

[Student 21736](#) - Material was very interesting. Class covered a lot of material and went at a very fast pace. Without any background in quantum physics, it was difficult to completely master all the topics.

[Student 29880](#) - The content has very much theoretical materials, also provides with useful techniques to deal with real problems. The most important thing I get are those physical ideas that govern the phenomna.

[Student 30255](#) - Material goes fairly fast and is indeed "applied" - emphasis is on making approximations rather than pure theory.

[Student 31610](#) - Broad and mostly theoretical, though applications were tied in. Not sure about what I'm getting out of the course though.

[Student 32940](#) - Covering a whole book in one term was fast-paced.

[Student 46780](#) - Wasn't really very applied

	AVG	RESPONSES	MEDIAN	STDEV
Lab hours/week	1.2	10	0.0	1.99
Prep hours/week	13.5	13	12.0	5.94

pset

[Student 4617](#) - The problem sets were instrumental in learning the material; this is where 90% of the value of the class was. I did not

collaborate, nor did bibles exist. Tutorials were very helpful in illuminating issues with psets.

[Student 4665](#) - Good for learning Important to collaborate Often very time consuming

[Student 4869](#) - Psets are seriously hard. They took like 14 hours a week on average. My week revolved around 6.728 psets. Collaborating was helpful; so was going to tutorials, where the tutorial instructor occasionally just told us the answers. They are essential for learning the material, and for making sure you are on track.

[Student 13589](#) - Difficult but useful in learning the material. Tutorials necessary for understanding

[Student 21736](#) - Problem sets were quite difficult and unconventional. However, they were definitely doable after the TA discussed the questions in tutorial. Further, Clarice was always available via email to answer questions

[Student 28600](#) - Sometimes the Psets are time-consuming and difficult.

[Student 29880](#) - P-sets are very interesting and useful. Sometimes I have to think for quite a while to figure out the solution.

[Student 30255](#) - very useful to learn material. Bibles were pretty essential for some problems.

[Student 31610](#) - Super useful, but tough. Tutorials / Clarice were the only way they were possible to do.

[Student 32940](#) - The p-sets were difficult but they helped you understand course material better.

[Student 47706](#) - The assignments in this class were so strong and so brilliant. All of them were great questions and I could regard some of them as open problems, which could only be evaluated using approximations. I really admire this class because of those interesting problem sets. However, they were treated like the approach which were proposed in the tutorials is roughly the only answer to the questions. I was willing to spend hours and hours on solving them and devising new approaches for attacking those problems. However, this way I did not get good grades in my assignments. After that, I decided to attend the tutorials and I got very good grades. However, the whole thing turned out to be so boring to me. Firstly, because I knew the answer before I started to solve them. Secondly, I could not try my own approach on the problems. Anyways, I learned a lot in this class and through problems sets. And I am happy about it.

labs

[Student 4617](#) - n/a

[Student 4869](#) - No labs.

[Student 13589](#) - N/A

[Student 21736](#) - None

[Student 29880](#) - We don't have lab project.

[Student 31610](#) - None

textbook

[Student 4617](#) - The textbook and class notes were excellent and were complete and self-contained the entire class.

[Student 4665](#) - Textbook is very similar to the notes in class therefore not too helpful in providing alternate explanation

[Student 4869](#) - Textbook is pretty nice. Concise and a good reference.

[Student 13589](#) - Written by instructor and others. Very good and not a hard read. Notes exist for topics outside of the book but covered in class.

[Student 14664](#) - I found the required textbook to complement the course well and was fairly accessible.

[Student 21736](#) - The textbook was very useful for the class. The lectures and psets closely followed the textbook

[Student 28600](#) - Textbook is useful

[Student 29880](#) - Textbook and notes exist. They are very useful that textbook provide basic knowledge while professor's notes extend the understanding. They are also well-organized so that you can see a whole story instead of seeing two isolated parts.

[Student 30255](#) - class follows the text closely

[Student 31610](#) - Textbook is good. Class mostly follows it but professor is pretty good at uploading notes that are not in the book.

[Student 32940](#) - The textbook was extremely useful. The classes followed the chapters in the textbook, so reading the textbook really helped to clarify what was going on in class

[Student 47706](#) - The textbook was a brilliant one. But, a number of topics were not covered in it in detail.

exams

[Student 4617](#) - We haven't had any exams yet--final is still up in the air.

[Student 4869](#) - No exams so far. There will be a final. I am not looking forward to it.

[Student 13589](#) - Only a final so no comment.

[Student 29880](#) - For this semester we only have one final. So for now I cannot comment on this.

[Student 31610](#) - None except the final. This makes the final seem really scary.

grades

[Student 4617](#) - The grading is a bit of a black box--I have no idea how I'm doing, but I assume it's "grad-graded".

[Student 4665](#) - Fair

[Student 4869](#) - Grading is quite fair. Graders are lenient with partial credit.

[Student 13589](#) - Extremely fair on problem sets. Hard but grading was reasonable.

[Student 21736](#) - Very fair

[Student 29880](#) - Grading on the homework is fair. TA is very careful in checking the answers for each problem.

[Student 30255](#) - grading seemed fair

[Student 31610](#) - 60% psets, 40% final?

[Student 32940](#) - It's fair.

[Student 47706](#) - The grading policy in the assignments were so strict. I mean only those solutions alike to grader's solutions were admired.

advice

[Student 4617](#) - Advice that is not very helpful: Be Professor Hagelstein. Advice that might be more useful: The material is difficult and complex and nuanced. Be proactive in noticing where students get lost and work on correcting those errors. Additionally, make sure students see the forest for the trees--quantum mechanics involves a lot of "recreational mathematics" and sometimes, the results can be lost amongst calculations.

[Student 4869](#) - Keep up the good work!

[Student 13589](#) - Really emphasize material that is currently hot or related to those areas. Numerical simulations are neat to learn as well.

[Student 29880](#) - Cannot appreciate this class more. But if insist on giving some suggestions, I would say that it will be better if some lengthy derivation on the blackboard could be outlined instead of going through, which will make more time for more interesting topics.

[Student 31610](#) - I feel like I've had my hand held the entire way through the class...

[Student 32940](#) - Advertise this subject as incredible learning!

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