

COMPSCI 229R

Topics in Theoretical Computer Science: Interactions between Physics and Computation

Term/Year: Fall 2018
Department: Computer Science

Enrollment: 46
Number of Responses: 21
Percent Response 45.65%

Unless otherwise indicated in the question text, the following scale is used for responses:
 1=unsatisfactory; 2=fair; 3=good; 4=very good; 5=excellent.

GENERAL QUESTIONS

	na	1	2	3	4	5	Tot.	Response Rate	Mean
Evaluate the course overall.		0	1	5	4	11	21	45.65%	4.19
Course materials (readings, audio-visual materials, textbooks, lab manuals, website, etc.)	0	0	2	5	3	9	19	41.30%	4.00
Assignments (exams, essays, problem sets, language homework, etc.)	7	0	0	0	4	8	12	26.09%	4.67
Feedback you received on work you produced in this course	0	0	0	4	6	9	19	41.30%	4.26
Section component of the course	16	0	0	0	0	3	3	6.52%	5.00
On average, how many hours per week did you spend on coursework outside of class? (1=<3; 2=3-6; 3=7-10; 4=11-14; 5=>14)		1	15	1	0	0	17	36.96%	4.06
How difficult did you find this course? (1=very easy; 2=easy; 3=moderate; 4=difficult; 5=very difficult)		0	3	12	5	1	21	45.65%	3.19
What was/were your reason(s) for enrolling in this course? (Please check all that apply)	Elective						15	32.61%	
	Concentration or Department Requirement						8	17.39%	
	Secondary Field or Language Citation Requirement						3	6.52%	
	Undergraduate Core or General Education Requirement						1	2.17%	
	Expository Writing Requirement						0		
	Foreign Language Requirement						0		
	Pre-Med Requirement						0		
How strongly would you recommend this course to your peers? (1=definitely not recommend; 2=unlikely to recommend; 3=recommend with reservations; 4=likely to recommend; 5=recommend with enthusiasm)		0	1	5	5	10	21	45.65%	4.14

Unless indicated in the question text, the following scale is used for responses: 1=unsatisfactory; 2=fair; 3=good; 4=very good; 5=excellent.



EVALUATION OF INSTRUCTORS

Name	Q1	# Responses for Q1	Q2	Q3	Q4	Q5	Q6	Q7
Instructors Overall	4.41	39	4.35	4.29	4.83	4.59	4.42	4.56
Barak, Boaz	4.35	20	4.18	4.00	4.88	4.57	4.09	4.50
Schramm, Tselil	4.47	19	4.47	4.60	4.77	4.62	4.69	4.60

- Q1:** Evaluate your Instructor overall.
- Q2:** Gives effective lectures or presentations, if applicable
- Q3:** Is accessible outside of class (including after class, office hours, e-mail, etc.)
- Q4:** Generates enthusiasm for the subject matter
- Q5:** Facilitates discussion and encourages participation
- Q6:** Gives useful feedback on assignments
- Q7:** Returns assignments in a timely fashion



EVALUATION OF INSTRUCTORS

Barak, Boaz

	na	1	2	3	4	5	Tot.	Response Rate	Mean
Evaluate your Instructor overall.		0	1	2	6	11	20	43.48%	4.35
Gives effective lectures or presentations, if applicable	7	0	0	3	3	5	11	23.91%	4.18
Is accessible outside of class (including after class, office hours, e-mail, etc.)	2	0	2	3	4	7	16	34.78%	4.00
Generates enthusiasm for the subject matter	1	0	0	0	2	14	16	34.78%	4.88
Facilitates discussion and encourages participation	3	0	0	0	6	8	14	30.43%	4.57
Gives useful feedback on assignments	5	0	2	0	4	5	11	23.91%	4.09
Returns assignments in a timely fashion	8	0	0	0	3	3	6	13.04%	4.50

Unless indicated in the question text, the following scale is used for responses: 1=unsatisfactory; 2=fair; 3=good; 4=very good; 5=excellent.

EVALUATION OF INSTRUCTORS

Schramm, Tselil

	na	1	2	3	4	5	Tot.	Response Rate	Mean
Evaluate your Instructor overall.		0	1	2	3	13	19	41.30%	4.47
Gives effective lectures or presentations, if applicable	2	0	1	1	3	10	15	32.61%	4.47
Is accessible outside of class (including after class, office hours, e-mail, etc.)	2	0	0	0	6	9	15	32.61%	4.60
Generates enthusiasm for the subject matter	2	0	0	0	3	10	13	28.26%	4.77
Facilitates discussion and encourages participation	3	0	0	0	5	8	13	28.26%	4.62
Gives useful feedback on assignments	3	0	0	1	2	10	13	28.26%	4.69
Returns assignments in a timely fashion	5	0	0	1	2	7	10	21.74%	4.60

QUESTIONS FOR GSAS STUDENTS

	na	1	2	3	4	5	Tot.	Response Rate	Mean
Included discussion or assignments that pointed to a potential dissertation topic, or, in the sciences, a potential research lab	2	0	0	3	3	3	9	19.57%	4.00
Included assignments that helped to develop necessary research skills for a potential dissertation topic	2	0	1	1	4	3	9	19.57%	4.00
Included assignments that could be developed into professional talks or potential publications	4	0	1	1	2	3	7	15.22%	4.00
Helped directly or indirectly in preparation for generals	6	0	0	0	2	3	5	10.87%	4.60



COMPSCI 229R

Topics in Theoretical Computer Science: Interactions between Physics and Computation

Comments



What were the strengths of this course? Please be specific and use concrete examples where possible.

Course

Evaluate the course overall.: **4 (very good)**

Cool material at the interface of computation and physics.

Evaluate the course overall.: **3 (good)**

variety, exciting visiting speakers, interesting material

Evaluate the course overall.: **5 (excellent)**

Really cool survey on topics in physics and computation, leaning towards a quantum focus in the latter half of the semester

Evaluate the course overall.: **4 (very good)**

The course had a very broad variety of interesting topics. Some of the invited speakers gave very high quality talks.

Evaluate the course overall.: **5 (excellent)**

The topics were very interesting, diverse, and flexible. The presentations were well-done and having notes/blog post is great for reference. Interacting with computer scientists, physicists, and mathematicians was constructive.

Evaluate the course overall.: **4 (very good)**

This was a cool way to learn some of the connections between Physics and Computer Science. Boaz and Tselil were always very enthusiastic and responsive to any help that presenters/scribers needed.

Evaluate the course overall.: **4 (very good)**

Fascinating topics

Evaluate the course overall.: **5 (excellent)**

- Presentations were overall nice. - I imagine the final blog posts would be good also.

Evaluate the course overall.: **3 (good)**

It was good when the lectures were good

Evaluate the course overall.: **3 (good)**

Learning, presenting on, and writing about an advanced topic was interesting.



Evaluate the course overall.: **3 (good)**

Material was interesting.

Evaluate the course overall.: **3 (good)**

It was pretty far-ranging.

How could this course be improved? Please use concrete examples where possible and provide constructive suggestions.

Course

Evaluate the course overall.: **4 (very good)**

Lectures, both from professors and from students, were always very hard to follow. I found myself frequently getting lost near the beginning of class, and then would stop paying attention.

Evaluate the course overall.: **3 (good)**

there was a huge range of necessary background knowledge for the various weeks (some weeks very little or the reading was enough, some weeks a lot was necessary) and a lot of the background reading was not helpful (or not provided)

Evaluate the course overall.: **5 (excellent)**

I think three hours for a series of lectures is just a really long time. I had a couple random conflicts which came up because blocking out three hours on a Friday afternoon is inconvenient because of the new Harvard schedule

Evaluate the course overall.: **4 (very good)**

This course can be improved by better coordinating the speakers so that each week builds off the previous one more smoothly.

Evaluate the course overall.: **5 (excellent)**

Having more of a schedule (presentations running on time, preparations more in advance) could help, but given the seminar nature of the course I think it already worked very well.

Evaluate the course overall.: **4 (very good)**

I think it would have been nice if there was more structure to the course. I understand that to some extent this a survey course, but it was hard at times to see the connections between different lectures. Perhaps the course could have been improved if we followed some textbook or a preselected order of papers by Boaz.

Evaluate the course overall.: **4 (very good)**

Please ensure student speakers come prepared. Their job really isn't to bore everyone as soon as possible. Instead, they should actively make talks interesting and fun so that learning from them is a joy. I found the first 1/3 of the seminar to be incredibly dull (not in terms of topics covered) but the quality picked up towards the end. Else, great selection of speakers and topics!

Evaluate the course overall.: **3 (good)**

A lot of the lectures really should have narrowed their scope drastically and given the audience a lot of intuition for what it was they were even talking about.



Evaluate the course overall.: **3 (good)**

It was very boring and inaccessible for every lecture besides your own.

Evaluate the course overall.: **3 (good)**

Some of the lectures were pretty bad / not engaging.

Evaluate the course overall.: **3 (good)**

The students could be given more training about how to lecture well. The lecture quality was inconsistent, which I suppose is to be expected in a class of this course.



Course materials (readings, audio-visual materials, textbooks, lab manuals, website, etc.) — Add Comments?

Course

Evaluate the course overall.: **5 (excellent)**

Course materials (readings, audio-visual materials, textbooks, lab manuals, website, etc.): **5 (excellent)**

The pdf notes and blog post are great!



Assignments (exams, essays, problem sets, language homework, etc.) — Add Comments?

Course

Evaluate the course overall.: **5 (excellent)**

Assignments (exams, essays, problem sets, language homework, etc.): **5 (excellent)**

I enjoyed the flexibility in picking and preparing for the presentation, as well as writing the blog.



Feedback you received on work you produced in this course — Add Comments?

Course

Evaluate the course overall.: **5 (excellent)**

Feedback you received on work you produced in this course: **5 (excellent)**

Explicit feedback on the presentation would be helpful.

In your opinion, what preparation or background is necessary to take this course?

Course

Evaluate the course overall.: **4 (very good)**

Understanding of algorithms and basic complexity theory; understanding of quantum mechanics and statistical mechanics (physics 143a and 181).

Evaluate the course overall.: **3 (good)**

some background in statistical physics and quantum mechanics would have been helpful

Evaluate the course overall.: **5 (excellent)**

Should be really comfortable with basic quantum mechanics and a smattering of topics in math

Evaluate the course overall.: **4 (very good)**

Mathematical maturity. Prior exposure to theoretical computer science to have a better appreciation of the topics discussed in the course.

Evaluate the course overall.: **5 (excellent)**

Maturity in CS. Some exposure to statistical and quantum physics.

Evaluate the course overall.: **4 (very good)**

complexity, some exposure to quantum/statistical mechanics

Evaluate the course overall.: **3 (good)**

Be good at math and advanced CS theory. Every week except the week you presented required 0 hours of work.

Evaluate the course overall.: **5 (excellent)**

TCS and physics

Evaluate the course overall.: **3 (good)**

Background in CS or Physics.

Evaluate the course overall.: **3 (good)**

Familiarity with theoretical computer science



What would you like to tell future students about this class?

Course

Evaluate the course overall.: **4 (very good)**

The course is pretty low work and is very chill (we have pizza before lecture!) The only assignment is preparing a lecture and/or writing lecture notes for a lecture. However, often lectures can be really difficult to follow.

Evaluate the course overall.: **5 (excellent)**

This is a good course, although it does run a little long (three hours). Boaz is clearly very well-versed in whatever topics people come with presenting. You get to do a little research on whatever topic in the physics/computer science realm you are interested in, which is neat.

Evaluate the course overall.: **4 (very good)**

It is important to identify your presentation topic early on and slowly work on it, instead of trying to put together the talk the week before.

Evaluate the course overall.: **5 (excellent)**

This class is a seminar where students present on interesting and current topics. I learned a lot from doing the presentation and listening to the others. In addition, writing a note/blog post is required, which is also educational and provides a good reference. If you are interested in the topic, this class is a valuable experience.

Evaluate the course overall.: **4 (very good)**

This course is a unique blend of connections between Physics and Computer Science. If you are interested in understanding how the theoretical parts of these two disciplines complement and inspire each other, then consider taking this class. Taught in a seminar style, there are no concrete graded assignments and students take turns presenting lecture-style. Prof. Barak is a computer scientist, so naturally, the computer science taught is usually much deeper than the physics. Topics are certainly interesting, but you will need a good understanding of computational complexity to get a lot out of the course.

Evaluate the course overall.: **4 (very good)**

Great course and a lot of learning involved. Make sure to do readings before class in order to ask substantial questions to speakers. Overall, a fascinating range of topics covered!

Evaluate the course overall.: **5 (excellent)**

Great topic this semester (physics and computation). Very accomplished teaching staff, and some very bright students.

Evaluate the course overall.: **3 (good)**

Only take this class if you are very good at understanding advanced topics presented dryly over a long period of time (>3 hours). the project was a lot of fun to work on, but once you're done presenting you mostly just idle the rest of the semester.



Evaluate the course overall.: **3 (good)**

Topics were interesting, but lecturers were crowd-sourced, and so there was a wide range in quality.

Evaluate the course overall.: **3 (good)**

This class was very free-ranging and somewhat disorganized. We covered many interesting topics in the intersection of physics and theoretical computer science. Lectures were mostly given by students in the class, which meant that the quality of lectures was highly variable.

What did you learn? How did this course change you?

Course

Evaluate the course overall.: **4 (very good)**

I was exposed to many interesting connections between physics and theoretical computer science. Moving forward, I feel that I know how to become more of an expert on the topics mentioned in this class if I wanted to.

Evaluate the course overall.: **5 (excellent)**

I learned a lot about a topic I was interested in (the one I had to present) and was introduced to many others. Hopefully, I can learn more about them on my own now. In addition, I enjoyed interacting with other students of diverse backgrounds, which might be helpful in the future.

Evaluate the course overall.: **4 (very good)**

Gained a deep appreciation for physics and CS as they may relate to each other. Never thought the two fields were that very compatible, so I liked the unique genre of this TOC seminar.

Evaluate the course overall.: **5 (excellent)**

Quantum computing (+ AI) is the future.

Evaluate the course overall.: **3 (good)**

Exposed me to some interesting material

Evaluate the course overall.: **3 (good)**

It was a lot of fun learning about an advanced CS topic.

Evaluate the course overall.: **3 (good)**

By preparing and giving a lecture (and writing a blog post afterwards), I learned a lot about one of the subjects.



Please comment on this person's teaching.

Barak, Boaz

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

Boaz clearly knows a little (or, most of the time, a lot) about whatever people present about, and so he is able to give good advice on how people might want to structure their presentations or what they might want to present about. He gave great feedback in helping us learn to be better presenters.

Evaluate the course overall.: **4 (very good)**

Evaluate your Instructor overall.: **5 (excellent)**

Professor Barak is extremely enthusiastic and does a fantastic job at moderating the discussion. He always ensures that the audience is able to follow the presentation by asking good questions and giving clear, concise explanations.

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

Professor Barak was a very enthusiastic and knowledgeable leader for the seminar. He had great intuition for all the topics and asked good questions, which led to interesting discussion. In addition, he was very helpful for preparing for the presentations.

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

Great lecturer.

Evaluate the course overall.: **3 (good)**

Evaluate your Instructor overall.: **4 (very good)**

Boaz is very good

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

Boaz is inspirational and makes me want to learn intensely for as long as I can.

Schramm, Tselil

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

Tselil clearly spends a lot of time making sure that peoples' presentations are in tip top shape. She is very attentive in lecture and very thorough in providing feedback on the presentation papers.



Evaluate the course overall.: **4 (very good)**

Evaluate your Instructor overall.: **5 (excellent)**

Tselil, like Professor Barak, does a very good job at moderating the discussion and placing the presentation in a broader context.

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

Dr. Schramm was very helpful and organized. Her great presentation/blog post started off the course on the right note. She asked good questions and kept the presentations on track. In addition, her constructive feedback on preparations, the presentation, and blog post were very much appreciated.

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

- Will be a great professor.

Evaluate the course overall.: **3 (good)**

Evaluate your Instructor overall.: **4 (very good)**

Tselil is very good

Evaluate the course overall.: **3 (good)**

Evaluate your Instructor overall.: **5 (excellent)**

This is my first time ever seeing/hearing about Tselil and I'd love to see her teach more courses in the department. She's very brilliant and dedicated to her students.

Evaluate the course overall.: **5 (excellent)**

Evaluate your Instructor overall.: **5 (excellent)**

Tselil set the tone with her presentation at the beginning of the course and was very helpful in giving feedback!



Comment on aspects of the course as they relate to professional development, including preparation for future teaching.

Course

Evaluate the course overall.: **5 (excellent)**

The presentation/blog posts were on research-level topics, and so were very helpful for professional development. I learned a lot by having to study and present results from papers. Clearly, doing a seminar presentation and writing a corresponding note is helpful for both research and teaching. In addition, I got to know people with similar interests.