University of Michigan
Office of the Registrar - Evaluations
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Winter 2017 Final

29 students responded out of the total enrolled 42

Instructor with Comments Report

2017-04-05 - 2017-04-19   Report ID: MSR04734

Thank you!

Instructor: Deotare,Parag Bhaskar

EECS 334 001

		5 SA	4 A	3 N	2 D	1 SD	NA	Your Median	75% Above	50% Above	25% Above	75% Above	50% Above	25% Above
		Responses from your Students**							**University Wide**			**School/College**		
4	I had a strong desire to take this course.	9	15	2	3	0	0	4.13	3.71	4.17	4.64	3.75	4.14	4.55
891	As compared with other courses of equal credit, the workload for this course was (SA=Much Lighter, A=Lighter, N=Typical, D=Heavier, SD=Much Heavier).	3	5	21	0	0	0	3.19	2.80	3.10	3.40			
1631	This course advanced my understanding of the subject matter.	16	13	0	0	0	0	4.59	4.10	4.40	4.75			
1632	My interest in the subject has increased because of this course.	18	8	2	1	0	0	4.69	3.79	4.20	4.64			
1633	I knew what was expected of me in this course. (SA=Almost Always, A=Frequently, N=Sometimes, D=Occasionally, SD=Hardly Ever).	17	10	1	1	0	0	4.65	4.00	4.35	4.67			
230	The instructor seemed well prepared for class meetings. (SA=Almost Always, A=Frequently, N=Sometimes, D=Occasionally, SD=Hardly Ever)	23	5	1	0	0	0	4.87	4.50	4.79	4.91			
199	The instructor explained material clearly. (SA=Almost Always, A=Frequently, N=Sometimes, D=Occasionally, SD=Hardly Ever)	21	7	1	0	0	0	4.81	4.25	4.67	4.87			
217	The instructor treated students with respect.	25	3	1	0	0	0	4.92	4.67	4.83	4.94			
1	Overall, this was an excellent course.	20	7	2	0	0	0	4.78	3.88	4.30	4.73	3.83	4.10	4.54
2	Overall, the instructor was an excellent teacher.	25	4	0	0	0	0	4.92	4.33	4.73	4.90	4.11	4.50	4.82
3	I learned a great deal from this course.	16	11	1	0	0	0	4.63	4.00	4.38	4.71	4.00	4.25	4.56
16	I increased my ability to design and conduct experiments.	8	8	5	6	0	2	3.81	3.75	4.10	4.44			
19	I increased my ability to design a system, component, or process.	10	10	5	4	0	0	4.05	4.03	4.27	4.50			
21	I gained valuable experience working in teams in this course.	7	6	4	8	1	3	3.50	3.89	4.17	4.50			
23	I increased my ability to formulate, and solve engineering problems.	10	15	3	1	0	0	4.20	4.00	4.25	4.50			
25	I developed a greater understanding of my responsibilities as a professional.	12	10	4	1	1	1	4.30	4.00	4.49	4.80			
28	Course improved my ability to communicate technical information, designs, and analyses.	12	12	1	1	1	1	4.38	3.92	4.17	4.39			
29	I developed a greater understanding of the impact of engineering on society.	17	11	0	0	1	0	4.65	3.85	4.01	4.31			
32	This course increased my desire to learn more about this subject in the future.	17	8	4	0	0	0	4.65	3.88	4.25	4.63			
33	I now have a greater understanding of the contemporary issues in this field.	17	11	1	0	0	0	4.65	3.93	4.15	4.50			
35	I increased my ability to apply engineering tools and methods.	12	15	2	0	0	0	4.33	4.05	4.25	4.54			
61	Prerequisites provided adequate preparation for this course.	12	14	2	0	0	1	4.36	4.00	4.31	4.50			
374	I developed confidence in my ability to work in the subject area of this course.	11	15	3	0	0	0	4.27	3.92	4.27	4.38			
183	The instructor used examples that had relevance for me.	20	7	2	0	0	0	4.78	4.20	4.50	4.71			
201	The instructor gave clear explanations.	20	8	1	0	0	0	4.78	4.14	4.60	4.83			
216	The instructor acknowledged all questions insofar as possible.	23	6	0	0	0	0	4.87	4.41	4.71	4.88			
229	The instructor used class time well.	22	6	1	0	0	0	4.84	4.20	4.63	4.83			
232	Work requirements and grading system were clear from the beginning.	17	10	1	0	0	0	4.68	4.00	4.33	4.63			
239	The amount of work required was appropriate for the credit received.	15	12	1	0	0	0	4.57	3.92	4.17	4.50			
340	The textbook made a valuable contribution to the course.	15	8	4	2	0	0	4.53	3.25	4.00	4.42			
896	My expected grade in this course is (SA=A, A=B, N=C, D=D, SD=E).	18	10	1	0	0	0	4.69	4.43	4.75	4.88			

Written Comments

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Instructor: Deotare,Parag Bhaskar

EECS 334 001

900 Comment on the quality of instruction in this course.

Student 1
Amazing instructor. Best I've ever had at this University.

Student 2
NA

Student 3
Great professor. I really appreciated the examples he did in the slides as well as discussing the real life applications of what we were learning. He always is prepared and really took the time to help students understand the concepts. I also really appreciated how he took the feedback from the first teaching evaluation and made a change. Definitely one of my favorite professors.

Student 4
Good feedback from the professor.
Nice and clear lecture

Student 5
NA

Student 6

Student 7
Parag Deotare is one of the best professors I have had in EECS - he cares about his students' learning, and it shows.

Student 8
NA

Student 9
Parag is very enthusiastic about what he is teaching. I was able to feel his passion for trying to help the students understand.

Student 10
Great

Student 11
This was a really well organized course. The professor always came to class prepared, and had a good mix of theory and application in every lecture.

Student 12
Really good the first half of the semester, died off after the eye lecture. Was far less prepared and was flying through the material that became way more mathy that i was lost most of the time. Then picked up again at lasers.

Student 13
I like how you don't wanna let the class be exam oriented, but you weight the homework 40% which is all about problem solving, so it's kinda confusing whether we should focus on problem solving and exams.

Student 14
NA

Student 15
lectures were well-prepared and thought out. Material was very interesting and engaging

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Student 16   → *Thank you for taking the time to write such a detailed response. It is very helpful.*

Before the first day of class, I did not want to take this course. My primary area of interest is math and signal processing. I feel much more comfortable in a class where a lot of math is used. I'm not much of a physics person; however, after taking the course, my interest in optics has increased greatly. Professor Deotare did a great job of motivating what we were learning with real world examples.

Overall, the instruction was very clear. At certain times, the derivations of equations were rushed, however. When one is taking notes from a derivation on the board, the instructor should pause after each step so the student has time to digest the step. The instructor is thinking and writing in real time, while the student must look, comprehend, write, then look up again. This is a much longer process than just thinking in real time. Please take time during derivations so the student doesn't feel lost for the rest of lecture.

The student-instructor interaction was outstanding. Professor Deotare took ample time to answer questions and frequently would ask for the class to answer a question.

I was amazed my peers' knowledge of physics. Like i said previously, I am a math person. I really like mathematical analysis and linear algebra, but have little background in QM. The project at the end of the course offered students a great way to show off their background knowledge and pull from other areas of engineering to answer an optics question. This is a great component to the course and should NOT be removed.

I think that more in-class demonstrations would be very helpful. Many students said that working out problems was a good use of class time - I disagree. I think that the homework sets were fairly straightforward, especially because you can check if your answer is correct in the back of the textbook (which is an excellent textbook). After you see that your answer is incorrect, merely looking for what you missed fixes the issue and no further thought is required. Rarely were the homework problems SO conceptual that a difficult nuance was present. Spending class time going over conceptual questions, however, would be a great use of time.

Additionally, doing a quick 2-3 minute review of the major results covered in the previous lecture - targeted specifically toward difficult concepts - would be very helpful. Sometimes we reviewed the last lecture hastily and in its entirety. This could be replaced with a more focused review on the main conceptual results of the previous lecture. Sometimes as students we zone out during lecture due to fatigue and we miss things (for example, I didn't know about the pi phase shift on external reflection for at least 2 lectures, so I was confused when we talked about Lloyd's mirror). It would be helpful to review such concepts at the beginning of lecture. My math professor will talk about the major theorems covered in the previous lecture, for example - their claims and implications, but not about their proofs.

The exams in the course were great. They were focused on concepts and applying these concepts to scenarios (like placing polarizers over Young's DS). I am glad that these exams didn't contain many calculations, because applying equations is tedium. Forgetting what one variable in an equation is doesn't show that you misunderstand the fundamentals (For example, I thought that the microscope question with "L" wasn't a good question, as many students misconceived what "L" was. On the homeworks, one can just look up what L is, so this is purely memorization and requires no thinking. It would be unreasonable to ask for a derivation of the formula to really know what L is on a 1.5 hour exam. This would show understanding, but it is unreasonable.)

Student 17
Very thorough and engaging lecture

Student 18
Very good instruction. I very much like the style of writing on slides on the projector.

Student 19
I really enjoyed all of the lecture and discussion sessions. I feel like the discussions without practice problems were more worthwhile, since they gave me some real world context to relate the class to.

Very well prepared and very willing to take the time to help students out in need.

I like the question section of the summary sheets. I think you should try to recommend they write 1-2 questions down just so it makes them try to relate it to something at the end.

↳ *great suggestion*

Student 20
NA

Student 21
NA

Student 22

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The instruction was high quality for this course. A lot of material was presented and summary sheets were a great way to keep track of this.

Student 23
NA

Student 24
Professor Deotare was helpful and engaged. It was clear that he cared a lot about the class and his students.

Student 25
Parag is fantastic and he is one of the few professors who seems to really care about his students and tries his hardest to have them understand. He puts in so much time for us, it's amazing! He is really one of the best EECS has to offer. Also the project idea with the one minute speeches was a great way to talk about all the cool things happening in optics! Before this class I didn't really like optics but now I want to take more classes in it.

Student 26
I greatly appreciated the care you took in lecturing material that was not directly related but related to applications. However, you infrequently failed to understand someone's detailed question, or offered an answer to a question they did not answer. You are not the only professor to do this though.

Student 27
NA

Student 28
Professor Deotare was phenomenal. He genuinely wants students to learn the material, and does whatever he can to help them. He is always very friendly and eager to help.

Student 29
Professor Deotare does a wonderful job teaching! His energy and excitement about the material is infectious, which really improves the overall learning process.

Written Comments

911 Please comment on the quality of the course as a whole.

Student 1
NA

Student 2
NA

Student 3
This course is a great course. I learned so much and want to explore more. The textbook was super helpful. Maybe in the future we could actually visit an optics lab?

Student 4
NA

Student 5
NA

Student 6

Student 7

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Course was interesting, well-taught, and well-run.

Student 8
NA

Student 9
Great class, the structure of the class is bit different from other classes I have taken, but I enjoyed it. Also I think it works pretty well as well

Student 10
Great

Student 11
Good, having a great professor makes such a huge difference in the quality of the course. Not only was he enthusiastic about the subject, but was able to use examples to make difficult concepts tangible which is very valuable.

Student 12
Could use work on explaining more clearly double slit experiment and other interference phenomena. I mainly watched Kahn Acadamy on double slit and thin film to understand it, they have a really good string of videos you may want to check out and try to incorporate.

Student 13
NA

Student 14
NA

Student 15
This class was amazing

Student 16
Great course. Would highly recommend for somebody outside of emag/physics side of EE to take. It is very interesting and I was motivated to learn more about it without dreading the subject.

Student 17
Interesting material that kept me interested all semester

Student 18
Top quality. Makes me wish I had another year to take more optics classes

Student 19
The course was very straightforward, and the homework prepared for the exams well.

Great course, but the quizzes give me high anxiety, and I believe I would have done better with more time.

Student 20
NA

Student 21
NA

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Student 22
The material presented the theory and how to solve problems in addition to applications of what we learned to the world/workplace. I really enjoyed having a final project and being able to apply what I learned to a tangible device.

Student 23
NA

Student 24
I would have liked to have a lab for this course.
I came in expecting an easy and boring course, but I was pleasantly surprised by the energy and passion Professor Deotare brought.

Student 25
The first half of this course, where we did ray optics, I enjoyed more than the wave optics. Ray optics were a little easier to see applications for, but the professor did his best to show the applications of wave optics as well.
Overall, I think the course was great and would recommend it to EE students.

Student 26
NA

Student 27
NA

Student 28
This was a great course. The homeworks were challenging, however there wasn't as much pressure as some other eecs classes, which allowed students to really learn and understand the material.

Student 29
NA

Written Comments

931 Please give any other comments on this course as a whole.

Student 1
NA

Student 2
NA

Student 3
NA

Student 4
NA

Student 5
NA

Student 6

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Student 7
The second exam was much more example based than our review session led us to believe / making it cumulative without the advantage of a study period (such as in final exam week) to study for it made it feel like too much information to cover in one midterm exam.

Student 8
I often found that I was confused because the notation used for various things (e.g. the equation for an electromagnetic wave) was different in this course than it had been in previous courses (specifically, in EECS 230 and Physics 240). However, I don't think it's fair to attribute this problem to any specific one of these courses because after one notation is learned, any new notation will be confusing. It would be very beneficial if there was a standard and consistent notation used every single time. Otherwise, it feels like I am re-learning everything every time a new notation is used. And if these courses are not going to use the same notation, then I think that more time/emphasis needs to be spent on clarifying exactly what the equation and variables represent. Alternatively, if these classes placed less emphasis on learning these numerical equations and solving for variables, and instead focused on intuitively understanding the concepts that the equations represent, then this issue wouldn't even exist. All of this being said, I believe that Professor Deotare is trying as hard as possible to teach the importance of intuitive understanding, but is limited by the fact that assigning a grade to intuitive understanding is difficult and assigning a grade to correctly solving an equation is simple.

Student 9
NA

Student 10
NA

Student 11
I wish it had a lab component as well, since a lot of the later topics are a bit abstract and it would be helpful to visualize
I think having the reading quizzes was good because I would thoroughly read the section assigned rather than just skimming, which then made me understand the topic better when it was covered in lecture.

Student 12
NA

Student 13
NA

Student 14
NA

Student 15
10 out of 10 would recommend to a friend

Student 16
More in-class demonstrations (or just videos). The Michelson interferometer video was very helpful.

Student 17
NA

Student 18
Very good

Student 19
NA

Student 20

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NA

Student 21
NA

Student 22
As a whole, this course very complete. The guest speakers really helped in understanding how the material relates to real world work that is currently happening and what is expected for us to know.

Student 23
NA

Student 24
The demos were good. I would have like to have a lab, but I guess that's what 438 is for.
I didn't feel challenged very much in this course. I probably wouldn't have liked for it to have been harder or more work, but maybe we could have covered more material.
Also, I liked using discussions to talk about applications and technology. It would have been cool to have students present on some topics, maybe as a real assignment instead of just calling up random people. That would maybe get people more involved in discussion, as well.

Student 25
NA

Student 26
NA

Student 27
NA

Student 28
One suggestion for the course that I have is to slow down occasionally. Sometimes we went quickly through the mathematics and I wasn't able to completely follow. Additionally, it would be helpful if the homework questions were more conceptually based, like the exam question. This would allow students to better prepare for exams. It would be helpful if we could use the exam formula sheet on homeworks so that we could become more familiar with it and know where the formulas we need are located. Also, discussion could be used as a weekly review session to go over the important concepts we learned during the week.

Student 29
This is a wonderful class that I kind of stumbled into. I think a lot of students miss out not knowing what this class is/how important it is/the wide array of applications for their field.

Written Comments

1098 Among the courses you have already taken, which proved the most (or least) effective in preparing you for this course, and why?

Student 1
Physics 390, EECS 330
Because optics is in quantum and electromagnetics

Student 2
NA

Student 3
NA

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Student 4
NA

Student 5
NA

Student 6

Student 7
ENG 100 because of the project-based work

Student 8
EECS 230 was the most effective, and Physics 240 also helped.

Student 9
NA

Student 10
NA

Student 11
Electromagnetics (didn't take Physics 240 in college but i assume it would have been helpful preparation too)

Student 12
EECS 230, was really helpful for E-Mag waves.

Student 13
NA

Student 14
NA

Student 15
EECS 230 and PHYS 240 were the most effective in preparing for this course since they both deal with EM

Student 16
EECS 230/216. Superposition of travelling waves and Fourier theory was very helpful in understand a lot of the course topics toward the end. Other than that, I don't think too much knowledge is required prior to entering the course.

Student 17
EECS 230 because it dealt with some of the same material

Student 18
Physics 240
We learned about lenses and polarization and a lot of other geometric optics

Student 19

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NA

Student 20
NA

Student 21
NA

Student 22
Physics 240 learning the basics of images and electric and magnetic fields

Student 23
NA

Student 24
Physics, probably, or 230, because I learned about light and wave propagation.

Student 25
At the end of EECS 230, we did a bit of optics, but it was just basics of refraction and polarization. The majority of the topics in this class were new to me.

Student 26
I felt that this course was relatively easy to take without prerequisites, but EECS 230 proved useful.

Student 27
NA

Student 28
Physics 240, because we began to look at ray optics and lenses and mirrors.

Student 29
EECS 230 talks about electromagnetic waves, and touches on snells law, and Physics 240 teaches electromagnetic waves, and polarization. These helped give a basis to work off of.

* The quartiles are calculated from Winter 2017 data. The university-wide quartiles are based on all UM classes in which an item was used. The school/college quartiles in this report are based on upper division classes with an enrollment of 16 to 74 students in College of Engineering.

** SA - Strongly Agree, A - Agree, N - Neutral, D - Disagree, SD - Strongly Disagree, NA - Not Applicable.