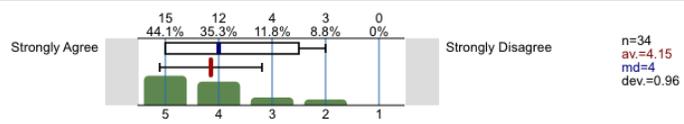


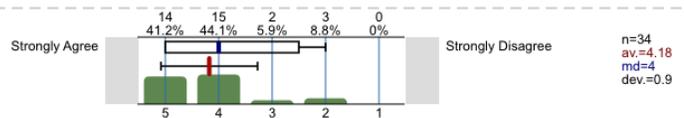
From Cal Poly course evaluations 31 out of 40 students, you rated me and the course about a 4.16/5, or about what the physics department averages.

2. Summary Evaluation

2.1) Overall, this instructor was educationally effective.



2.2) Overall, this course was educationally effective.



Comments:

- I love the lens teaching concept, it allows student to know what is actually going on before a bunch of wacky numbers are thrown at us
- I do not mind the flipped classroom style, some days I wish we would've done a little bit more in class with the homework to better follow the idea of a flipped classroom
- I do not think the first project was very educationally benefitting
- pete is great at what he does, he makes students think about the big idea before understanding the small ones, sometimes I wish he would be more direct answering questions
- cares about students beyond just in the classroom, cares about their well-being as well
- Pete is very smart and a great professor
- Classes seemed a little unstructured so maybe a better prepared lesson plan would help
- Continue to stress that this particular class with this professor will have more writing words and discussions rather than formulas and numbers to provide a strong conceptual understanding of basic mechanics. Provide more than a minute for students to discuss a problem we are solving in class.
- Flipped classroom method, could work for some, didn't work for me.
- He is a really great professor who aims to teach physics by doing every experiment and make students think before experiment by using the conceptual steps which he developed. I really like this class and highly recommend this class
- How do you change the classroom then? It has been the same for hundreds of years, preparing students for factory 9-5 life in which creativity is something pushed aside to be sought out after dinner or during a brief walk around the block. Instead, Peter Schwartz brings it all together. Not only does he know how to kick a brain into gear, he can settle it down or leave it altogether. He can enrich any understanding without arrogance, change any understanding without judgment, and make an example out of himself without compromising honor or dignity. He could use a classroom in which it is easier to displace desks into groups.

-I did not experience any hiccups in the curriculum. Admittedly, I did not put 100% of myself into the class and thus I do not believe I can have any valid complaints. Any lack of understanding that I have can be easily fixed by having a discussion with the students around me and ultimately having the same discussion with Pete if other students don't have the answer. Pete was able to clearly explain the concepts we had to understand and left it to the students to put in the effort, which works wonders. I enjoyed going to the class each day.

-I get confused really easily and sometimes the in class examples of real world items helps. But when I use those to explain myself on tests, professor said it wasn't clear. I didn't really like physics coming into this class and I still don't like it coming out.

-I like that you look at thought process not numbers, but for me labeling my lens was the hardest thing to get used to for me. I think it's a good idea to categorize problems but if the work is correct I don't think you should lose points for not stating a lens.

-I like working on problems with groups. I like real world experiments/demonstrations. I like and dislike that "big exams" aren't in the gradebook. I like that they're less stressful and allows us to see what we understand and what we don't understand. I don't like that the midterms are the only thing in the grade book. I do like that the tests are focused more on concepts rather than calculations. I feel like a lot of class time is wasted.

-I liked his different teaching style but it was hard for me to adjust to it. Having to watch videos outside of class, read the text, and do homework and projects was a bit much and I often did not have time to fully try to understand what we were learning in addition to studying and doing work for my other classes.

-I liked his reversed style of teaching but I wish he systematically covers a little more of the fundamentals of each concept in class. But he does cover many types of problems and examples in class, which I really liked. Because it is hard to fully understand the examples he is doing when students have not even grasp the concept itself yet. But overall, Schwartz is very passionate and I like how dynamic the class is!

-I liked how the teaching style that was implemented made me understand the concepts fully instead of only understanding when I should plug certain numbers into a specific equation. I could suggest the improvements of possibly grading the projects more thoroughly the first time so the groups do not have to edit the project four or five times.

-I liked that the lectures were online. However, I felt that he used the same examples over and over again. Also, I did not like how the exams are very subjective to the grader. I suggest to be more prepared and organized in the class.

-I liked the real world examples and in-class demonstrations, I also feel like the group discussions helped me learn the material.

-I loved Mr. Schwartz! He honestly cared about his students and whether they were learning the material. His in-class demonstrations were very helpful and I loved that I could watch the lectures as many times as needed to understand the concepts. Though, I would love if he would solve the problems completely because I understand the concepts but I never know how to actually solve the problems.

-I really enjoyed his style of teaching. He's very active and is able to convey physics concepts very well. At first, I was skeptical of his idea of a "flipped classroom", but in the end, I thought it was very effective. One improvement I would suggest would be to try to answer student's questions more thoroughly, instead of putting them off to answer by the end of the lecture.

-I really enjoyed the flipped classroom style that he used because I felt like I retained a lot more information. Sometimes I was a little frustrated with not getting a direct answer to questions but overall it was a helpful learning style.

-I really liked the attitude and energy that you brought to the class every day. It really helped me focus and want to learn what was being taught. If you provided us with the actual answers to the problems it would allow us to check and make sure that we are correctly applying and executing the concepts and lenses that you have taught us.

-I started out the year struggling with accepting the teaching method but I eventually accepted it and I believe that I understand the topics better now.

-I suppose I liked his positive attitude. However, he has a distinct "data driven" way of teaching that I simply did not follow well. I would suggest being more open to those who learn differently and not stating that all people learn the same way best.

-I thought that his flipped classroom in which we learn stuff at home was a bit confusing as some of the topics that were difficult weren't fully tackled in class. I felt as if the idea was right but the execution wasn't fully there. One thing I can see being better is that one day a week we work on the problem sets in class to get everyone talking about the actual content.

-I wish I had known about the flip classroom before signing up for the class, however I did adjust. In class we really embraced the learn by doing motto which helped encourage discussion in class. However, the professor could give more definitive answers in class because most of the time I was relying on my peers' explanations, which could have been wrong. Overall, I think this is an interesting approach to teaching this class and would like to see grade comparisons of those taking the rest of the physics series, and whether or not we are at an advantage or disadvantage.

-I really enjoyed Pete's reverse-learning teaching method. He properly utilized his time during class and he showed tons of experiments, which I think is a big part of physics.

-Pete is so enthusiastic about physics - which is definitely a plus because he radiates his enthusiasm. However, he uses a "flipped classroom" way about teaching so students are expected to watch a series of short videos each day before class. I had no problem adjusting to watching these videos and learning from them, however they were mostly demonstrating using certain

skills in a larger example. I think this method of learning is a great idea, however, should be paired with first giving out the concrete info and new material that will be covered followed by an example. Basically, I felt like the class lacked organization because there was no clear notes to take.

-The basic information we needed in order to do problems was never in a clear spot (in a typical lecture class, that info would be displayed on the board, etc. probably followed with examples.)

-The flipped classroom is really weird because we don't really do anything in class. I do like working with people though and I think that helped me a lot.

-The way class is taught provokes a lot more mental stimulation when thinking through problems than the typical way physics is taught.

-This "flipped classroom" style was rather interesting to me and I had no choice to accept it, regardless of the bad reviews that it got. I found that as the quarter progressed, I had no problem with it and found it more relaxing because I could watch the lectures on my own time when I wasn't tired or busy doing other homework. One thing I would ask for his class is that he spend more time actually showing us how to solve problems instead of asking questions, letting us talk amongst ourselves for too long, or spending too much time doing demonstrations. I'm not asking him to stop doing these things, but it'd be nice if he allocated his time more in favor of solving problems in the 50 minutes he has with his students every day.

-Went into the class thinking his method was dumb, came out liking it a lot. I liked the parallel learning in physics, but I would have liked more concrete lectures, that's how I learn.

From SurveyMonkey, 37 students out of the class of 40 students, record participation!

You can see the comprehensive survey results at this website:

<https://www.surveymonkey.com/results/SM-TGT8NXZT8/>

Q1 Parallel Pedagogy: Most students report a rather smooth transition to this new method, and claim it makes them think more about concepts.

Q2 Flipped Classroom: Most students found value in the flipped classroom, and especially found value in working relationships.

Q3 adjustment to flipped classroom got no results because I listed it as a multiple-choice question and didn't provide a "right" answer. Sorry

Q4, Q5 % of your learning: most learning came from other students. Students made use of other online resources.

Q6: Q7, Q8, Q9 Textbook: On average, students read about half the textbook, appreciated having it and appreciated receiving it chapter by chapter. Students would like solutions or answers to

exercises. I rewrote the textbook this past two weeks and I'm slowly providing more solutions/answers.

Q10 Office Hours: Most students who came to office hours found them valuable. However, most students didn't find a need because they found support elsewhere, especially in their groups. The importance of learning from each other is also demonstrated by question #4 indicating the peer learning provided the greatest amount of information.

Q11, Q12, Q17 Projects: Students found projects a valuable group experience, but many found it a tedious amount of work. There is little ambition to have more projects. I will provide more guidance and in particular explain that tracker can't be used to find speed and acceleration because it just takes absolute value and the noise goes nuts. I will guide students to take the slope of the line and make another graph. I should count projects as part of the grade. I think I will do that – each project can be 10% of the grade. There remains 20% for each midterm and 40% for the final exam. I won't add more projects to the class.

Q13, Q14: Homework Grading: There is general approval that homework not count for the final grade. Most students took responsibility for their choices in doing or not doing homework.

Q15: switching groups: There was mixed feelings about this. I'll likely keep it at one switch after MT#1.

Q16: On average, folks reported liking physics more than you thought you would.