Spring 2023 - Matthew Barry MEMS 0051 - INTRODUCTION TO THERMODYNAMICS - 1060 - Lecture

Project Title: **2234 - Teaching Survey Spring 2023**

Courses Audience: **64**
Responses Received: **54**
Response Rate: **84.38%**

Report Comments

Included in this report:

- Summary of responses to scaled questions
- Response breakdowns
- Student comments
- Results to instructor added custom questions (if applicable)

Understanding and using student feedback:

- We have resources that can help with interpreting your teaching survey report.
- Schedule a meeting with a teaching consultant who can help you interpret your results and develop a course of action if necessary.
- In the future:
  - Discuss, teach, and model giving meaningful feedback with your students.
  - Request a midterm survey of your course and give students multiple opportunities to practice giving feedback.

Contact OMET

Creation Date: **Monday, June 05, 2023**

University Questions

Summary table

Scale: strongly disagree (1), disagree (2), neutral (3), agree (4), strongly agree (5)

	Invited Count	Response Count	Response Rate	Mean	Mode	Median	SD
The instructor stimulated my thinking.	64	53	82.81%	4.25	4	4.00	0.62
The instructor was enthusiastic about teaching the course.	64	53	82.81%	4.49	5	5.00	0.64
The instructor presented the course in an organized manner.	64	53	82.81%	4.40	5	5.00	0.82
The instructor maintained an environment where students felt comfortable participating.	64	53	82.81%	4.34	5	4.00	0.68
The instructor maintained an environment where students felt comfortable seeking assistance.	64	53	82.81%	4.51	5	5.00	0.58
The instructor provided helpful feedback.	64	53	82.81%	4.21	4	4.00	0.77
Assignments contributed to my understanding of the subject.	64	53	82.81%	4.34	5	4.00	0.73
Overall of All Questions	448	371	82.81%	4.36	-	-	0.70

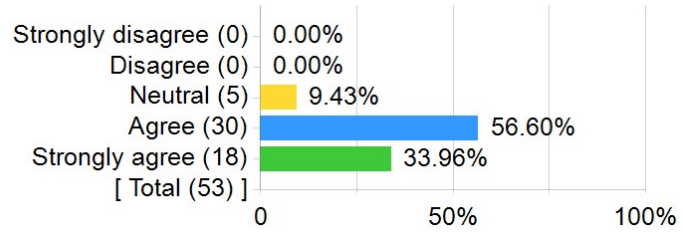
Overall effectiveness

Scale: ineffective (1), only fair (2), competent (3), very good (4), excellent (5)

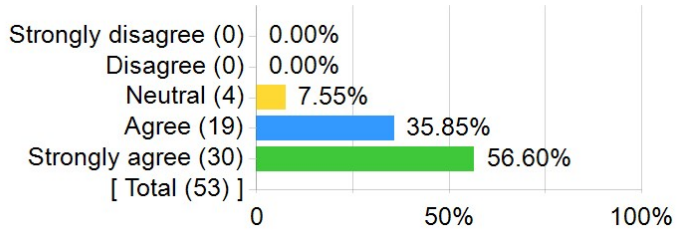
Question	Invited Count	Response Count	Response Rate	Mean	Mode	Median	SD
Express your judgment of the instructor's overall teaching effectiveness.	64	53	82.81%	4.15	4	4.00	0.74

Response breakdown

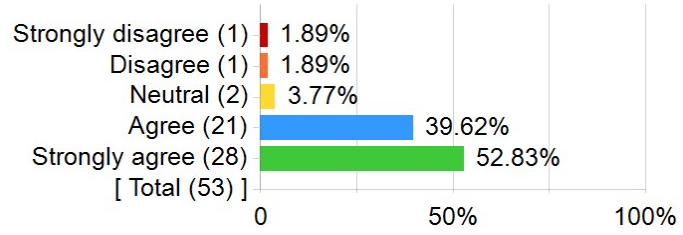
1. The instructor stimulated my thinking.



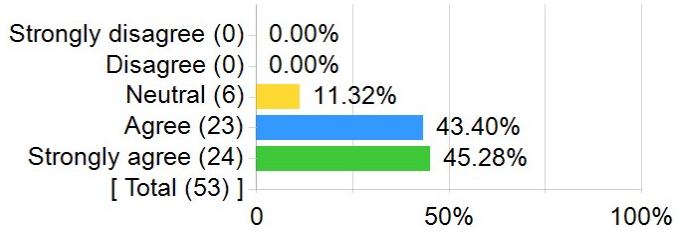
2. The instructor was enthusiastic about teaching the course.



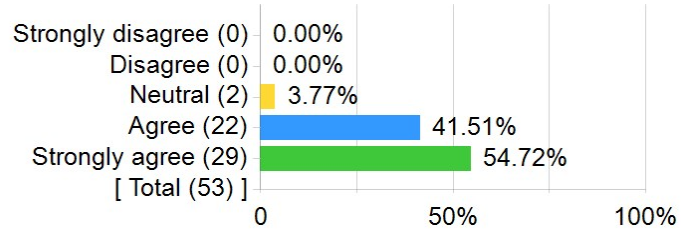
3. The instructor presented the course in an organized manner.



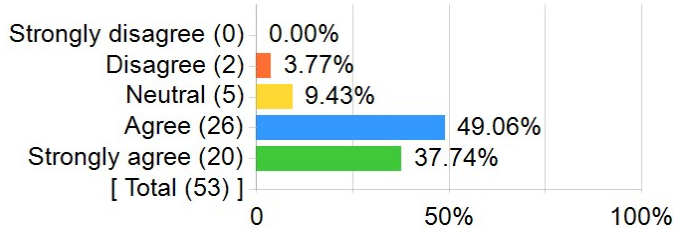
4. The instructor maintained an environment where students felt comfortable participating.



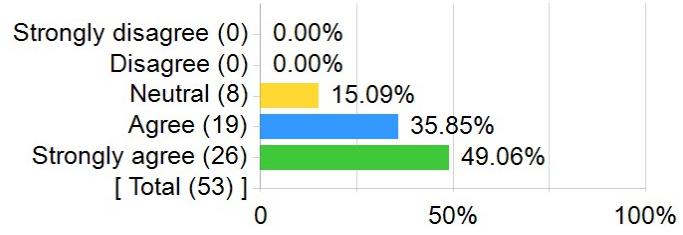
5. The instructor maintained an environment where students felt comfortable seeking assistance.



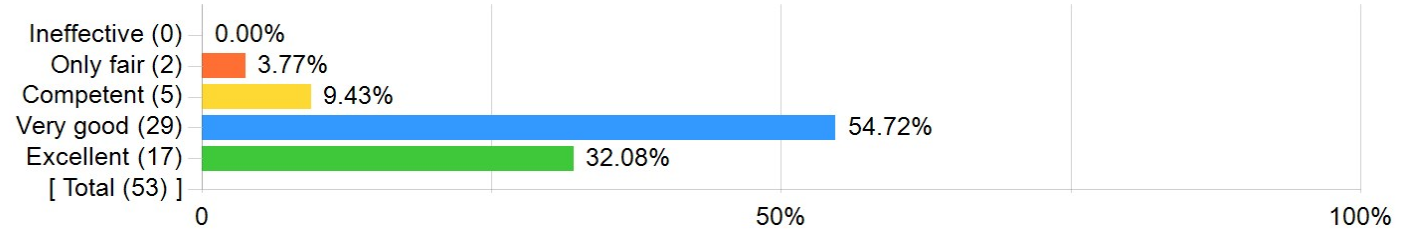
6. The instructor provided helpful feedback.



7. Assignments contributed to my understanding of the subject.



Express your judgment of the instructor's overall teaching effectiveness.



Comments

What did the instructor do to help you learn?

Comments
Dr. Barry provides his students with multiple ways of learning the topics of the course. This especially helps me when I can go over and review what is going to be taught the next lecture, and feel more prepared and engaged in class.
Basics of Thermodynamics and an understanding of the formulas involved
Ample materials to learn the material alongside frequent office hours
Gave detailed homework solutions
In depth examples of lecture material and willingness to answer all questions.
The homework/solution format was good
Flipped format is very effective and was always available for office hours.
Flipped format is great. Tophat is a great resource, and the way in which the material is presented certainly contributes to the ease with which learning occurs.
Provided in–class problems that were similar to the homework
The online lecture videos paired with the in–class examples and homework with the solutions were helpful in reinforcing topics and learning
The flipped lecture format is very helpful. It doesn't help students who don't use it but I always learn much more when I see the instructor explaining example problems instead of presenting the information.
The combination of good lecture videos and engaging class lectures helped a lot. I learned a lot through the examples covered in both the lecture videos and class lectures. The Top Hat lecture worksheets were very helpful both in reinforcing concepts and preparing for quizzes and exams.
Went through example problems.
Lecture videos were extremely helpful, and so were the top hat questions when reviewing the multiple choice for the quizzes
The flipped class helped me learn more.
Did examples in class, and provided homeworks that were good for reenforcing my understanding of the homework
Provided homework with solutions so when I was studying it was more guided practice. Provided videos so I was able to rewatch them at a later time to understand the subject. Had open office hours
1. Did example problems in class 2. Assigned weekly quizzes so that students are incentivized to stay on top of the content 3. Provided homework solutions so students could identify knowledge gaps 4. Held review sessions before the midterms and final exam 5. Had many practice problems on TopHat 6. Provided access to previous exams, homeworks, and quizzes on GitHub
The flipped lecture format worked perfectly. Having familiarity with concepts before seeing them in lecture greatly increased the effectiveness of the examples in class. The TopHat questions made sure I paid attention to the lecture videos and were very effective. The TopHat worksheet questions were also great, but I wish there was more of them. The weekly quizzes were also very fair.
example
Dr Barry presented the material using the flipped format. While I struggle with completing the prereading/video lectures, I did find that when I completed them, I had a very high understanding of the material. Additionally, having the homework and the quizzes line up really helped.
Tophat video lectures and worksheets were very helpful for compounding knowledge and studying for exams. In class lectures were quite helpful as well, but could've been more open to what we needed help with/allow students to do it themselves. Completion based homework with solutions was also very helpful as it gave motivated students ability to learn through the homework rather than just do things wrong and lose points for it.
I preferred the flip format and the extra in class examples it enabled. The lecture video questions and top hat questions were very helpful with increasing understanding of a topic and preparing for quizzes/exams I preferred having the hw solutions because it increased my understanding since i had more time to review them with the hw than i would otherwise to immediately correct false assumptions i may have on concepts

Comments
Weekly quizzes were fair and mostly helpful in overall preparation for exams
provide lots of resource to learn
Dr. Barry's teaching style helps me learn generally, as he goes over helpful class examples that correlate to the lectures.
Lots of examples available
Thermo
I've been burnt out since November, and this class has suffered the most because of it. So to answer the question, I don't know.
I really enjoyed the flipped class style. Having homeworks assigned from various lecture problem sets allowed me to always have practice problems to go back and practice on. Having the answers to the homeworks readily present also was very helpful. I was able to check my answers on the spot and see if what I was doing was wrong and was able to consistently submit my best work. Very helpful to have resources posted on the github, utilized them frequently. Furthermore, Dr. Barry also was very willing to help. After I bombed a quiz I came to office hours and we walked through the quiz and Dr. Barry told me how to appraoch the problems and waht I was doing wrong. My grades afterwards drastically improved.
thermodynamic systems, enthalpy entropy, how to find work based on a variety of situations.
Gave good example problems during class time to demonstrate the use of multiple ideas for one problem
Went through examples in class and present real world applications.
lectures were great to attend and TopHat helped immensely
The worked example problems were effective.
Recorded lecture videos allowed me to take detailed and organized notes on course content.
The quiz setup kept me studying material without exam cramming.
The homework assignments made it very clear how to use the material and concepts given in the lecture videos. The concepts building on each other were easier to understand as well. I thought the flipped learning with the short videos and engaging top hat questions really helped build a solid foundation to build on. I thought the quizzes were fair and appropriate difficulty.
The flipped classroom with examples in class was nice
Basic concept of Thermo
Flipped lecture format is very useful for information retention plus Dr. Barry understands the subject matter completely, so it's easy to ask questions.
thoroughly answered questions, went over examples in class
Dr, Barry is very thorough when teaching his courses. In most cases what he teaches goes into depth and application of the subject.
Honestly it was the office hours. Shoutout Gabe
The instructor helped me to learn the problem solving methods I needed to tackle thermo problems. The right words to look out for in problem statements and setting up the solution.
He taught very effectively in class and is amazing at breaking down a subject that is digestible to all.
Presented the material in an organized manner.
He helped me improve on finding the most optimum methods for each problem.
I feel the flipped format helped me catch up quickly after falling behind.

What could the instructor do to improve?

Comments
The one thing I would say was posting the quiz solutions a little closer to after the quiz is taken, I understand there are make ups, but the solutions are beneficial to studying for exams.
post the inclass lecture notes, so students can review if they missed a slide or class altogether
Bring shadow more
Course organization mainly surrounding hw broke down a little in the last couple of weeks
Drop the flipped class structure and teach in person.
N/A
The lectures felt kind of useless because all of the material was in the videos already
Given more example work besides homework and tophat work.
Have more lectures related to the project

Comments
The homework could have definitively been shortened, a lot of it was doing the same basic problem over and over again without gaining much
I did really really bad on the quizzes throughout the year. This is because the homework was due after the quiz on Friday and I would wait until Friday night to do the homework. I didn't even just turn in the homework for credit for the most part I would actually attempt it, but I would do it after the quiz. Having the homework due on Thursday night, the day before the quiz, would have vastly increased my grade. Obviously, this problem is my fault, I could have just done the homework on Thursday, this is just a suggestion on how to nudge some people in the class to get a higher grade.
My two minor suggestions would be to post the lecture slides and in–class example slides on Canvas ahead of time or on time and to make the syllabus more clear in terms of quizzes and homeworks. There were a few times this semester when the lecture slides and in–class example slides were posted a week late, and though the lecture slide contents are available in the videos, it is very helpful to have a pdf. With regard to homeworks and quizzes, the syllabus states that we were having 11 of both this semester when we only had 8.
Explain what format theexam is going to be like.
It’s a pretty challenging class with a lot of information, I think more in class reviews before exams would benefit students.
I would rather have in person lectures rather than the lectures online because I feel like I can focus better on what the lesson is and I often forgot or was too lazy to watch the online lectures.
Not sure. I feel like he provides a generous amount of resources.
1. Publish the annotated lecture slides after each lecture so that students who miss a lecture can see how the example problems were completed 2. Ask questions on TopHat during lecture so students are incentivized to attend and participate
I really disliked having the answer keys to the homework. I feel like I would have got a lot more out of them if I worked through them without the keys. Also, every semester I've had you, it feels like your effort kind of tails off as the semester continues, which kind of stinks. If there were more tophat worksheets and consistently posted homeworks/quizzes, I think students would perform better in the class overall, especially because that is where the concepts are most difficult.
More examples.
I think attaching a small completion grade to the video lectures and worksheets would help incentivize completion, similar to statics 1 last semester. I also wasn't the hugest fan of having the homework solutions attached with the assignment. I felt like it made me want to just transcribe the solution to get the credit.
Not much, if students want to learn and do well, Dr. Barry has set up the class to enable success and true learning.
I think it would be really cool if you introduced the project at the beginning of the semester so people could work on it more (but you can say you’re not going to explain how to do parts before getting to the topics not covered yet in lecture) Along with that my thought is id love to be able to get a deeper understanding of some important concepts in thermo that lead into applied thermo through a longer more in–depth project (hence the more time) My ideal vision is something like: two project options for the students choice. 1, basically just what ours was this year with the same grade weight, or 2, a far more complicated topic like “design a scramjet” or something, that we will probably get completely wrong but will further stimulate thought. This second option will be worth a good bit of bonus if students put in substantial effort and time
post the solved in class example
I think the instructor could improve by being more consistent in the difficulty of his exams. The first exam felt extremely easy, while the second very difficult and too long.
Include lectures at the end
The symbols used in this class do not reflect the subsequent math. Taking integrals of partial differentials and then only taking the sum of the two boundary conditions makes literally no sense and has never been discussed in any math class I've taken. I just wish that the equations had been a little more consistent with what we were actually doing. Also, we've been so behind for this entire term, that I honestly think we would benefit more from being assigned more homework over this project. We didn't get very pertinent information for the project until the week before it was due. I've talked to older students, and they've all said that the project took them several weeks. At the very least the project should have been adjusted to account for all of the missed lecture time.
Make the exam difficulty more consistent as students will have a better understanding of how to prepare.
provide more optional example problems to be done on own time
Not make the exams so hard. The 2 exams were somewhat unrealistic in my opinion. I didn't even get to finish a fourth of the second exam
For many of the modules, just watching the lecture videos did not seem to help my understanding, and I quickly started to get lost.

Comments
Maybe a different textbook would help, because the one currently being used was not helpful at all.
Nothing
Just more in–depth examples.
Potentially, more consistency through the exams. I understand that Exam 1 was likely too easy, but there was a large jump on Exam 2. Also, some of the homework sections were a little too based on coding and EES rather than learning how to use the equations on paper. Although learning to use EES is helpful for the project there is a sufficient amount in class. Maybe have separate homework sheets for EES coding and paper.
The lecture videos are so bare bones and in my opinion too dense. Saying something important more than 1 time is generally helpful. Putting specific emphasis on the most important stuff and highlighting places where students make mistakes also goes a long way.
Nothing
Maybe reduce some of the tophat worksheet questions. I followed along for a week answering the questions before I become too busy to do it with thermo and other classes (18 credits).
i think giving the opportunity for corrections on exams for partial credit would be very helpful. this would give especially me a bigger incentive to actually learn the information rather than not knowing on an exam and then just forgetting about it once it's over. learning from my mistakes and making corrections will greatly help me learn
NA
I don't know
I think the instructor could maybe not dim the lights in the classroom as it made it somewhat hard to fully wake up early in the morning with them being dim.
Reduce the difficulty of the exams
Not really his fault, but I wish we had a more hands–on project. Designing a Rankine Cycle on EES is not very invigorating.
Nothing really

Do you have any other information that you would like your instructor to know?

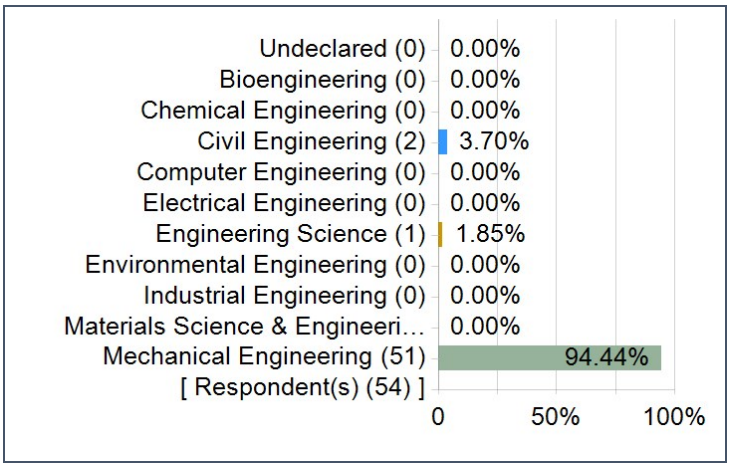
Comments
The github was extremely helpful when preparing for exams because it helps you to understand the types of questions that could possibly be asked on the exam and the depth in which they will be asked.
I might fail the class, but that's my fault alone (I just still haven't really learned how to study for the class). You're a good and very passionate teacher. Also thanks for bringing shadow sometimes.
The flipped lecture format was beneficial in some ways and detractive in others. The online videos allowed students to go through the material at their own pace and pause when needed but they were overall less engaging than an in–person lecture. Lecture video and tophat questions were helpful in preparing for quizzes and should stay included in the course. They should also remain ungraded. Having the solutions sets to the homeworks is a great format. Being able to work through the problems with a reference to what I should be doing was extremely beneficial to my understanding of course concepts. Without the solutions it would have been very difficult to ensure that I was taking the correct approach to the problem. However, I believe there was a huge problem with how the grading of the homeworks was handled. From the beginning we were told that we could simply submit the solution sets by themselves and receive full credit for the assignment, but students who did not do this and instead worked through the homeworks and submitted their own solutions would often face a significant loss of points on the assignment if something was slightly incorrect. Ultimately this meant that students were punished for actually working through the homeworks instead of just submitting the answer sheet. I believe it should have been a completion grade. The quizzes were very fair and kept students responsible for being up to date on course material on a week to week basis. I think including a project in the course is a good idea and beneficial to students understanding of concepts, but it adds a great deal of work to the busiest time of the semester. I believe that a large project should take the place of either the second exam or the final, having all three within a short period is a bit excessive considering other sections do not have a project.
I liked the weekly quiz format. I didn't do any of the Top Hat worksheets
I appreciate all the help I received this semester.
Flipped was nice, I thought Tophat was very useful in prepping for class and quizzes. Having homework solutions was way nicer than not having them. Highly recommend it for the future, although I don't know the impact on the grades versus not having the

Comments
solutions.
I think if we had more guided lectures pertaining to the project the class would overall be more enjoyable
N/A
I've never understood or enjoyed Top Hat's interface so I rarely use it as much as I should in any class. That's a me problem so I have no comment on the format. The flipped lecture videos were helpful and the quiz afterwards did help cement the ideas presented. The format of the weekly quizzes were fine.
Thanks for a great semester. I learned a lot. Was fun to see Shadow often too.
none
No.
Nah
–
No. Thank you
This class was great and you were truly the best engineering professor I have had yet. Class was set up so well to allow student to actually learn and retain material, even if it was a bit harder than most classes.
Tbh i don't understand why you get harassed so much on ratemyprofessor. From what ive heard, your expectations for students are a decent bit more relaxed than a few years ago, which could be why, but i genuinely think you are the best and most competent professor ive had yet in the engineering school. Compared to some of my other professors this semester — that im honestly not even sure how they got a phd — i think you have been the best by far. I appreciate the apparent effort you put in to helping your students learn and your research sounds neat, so tell William to give you tenure!
no
I like the flipped lecture format for this class. The video lengths are perfect and the class examples kept me on track for exams. The lecture video questions were definitely useful to ensure that I was gathering the more important points from each lecture. The tophat worksheets closely reflected homework problems, which I found to be very useful. I definitely enjoyed having homework solutions to make sure I am on the right track with my answers. Also, sometimes I solved problems a different way than the homework and it was useful to see alternative methods. The weekly quizzes were definitely fair, as they closely resembled tophat questions and we were never quizzed on material we hadn't seen/didn't have access to.
NO
Open door office hours worked for me. Was able to stop by when I had time, Dr. Barry was typically there. This format of Dr. Barrys classes works better for me as compared to statics. Although both classes were flipped, having in persion quizzes, exams, and other assignemts in Thermo and both circuits and actually gave me the motivation to adequately familiarize myself with the material. Unlike in statics where I would complete the quizzes at home and then really forget about the material until the next quiz, in thermo and circuits I found myself actually coming back to the material multiple times and actually having to learn and familiarize myself with the material. I feel that as a result I have a much greater grasp of the material in both thermo and circuits. I found the format of the weekly quizzes to be fair and they increased my understanding all around.
He is a great professor but just give us questions on the exams/quizzes that are something that you have taught us
No
not at this time
Shadow boosts class morale! More Shadow!
slaughter's flipped classroom model is better
No
Having homework solutions with the homework sort of helped. The homework without referencing the solutions takes an extremely long period of time drawing away from other classes. I feel like it helped more short term than long term (career wise).
n/a
no
You did great!

Comments
Somehow switch to Matlab (superior program) because EES is horrible. Both the virtual EES lab and the downloadable EES lab.

Swanson School of Engineering Questions

Please select the major you are enrolled in. Check at most 2 programs. If you are currently a freshman or an undeclared major, select your anticipated major from the list (or select Undeclared if you are unsure).



The instructor was accessible.

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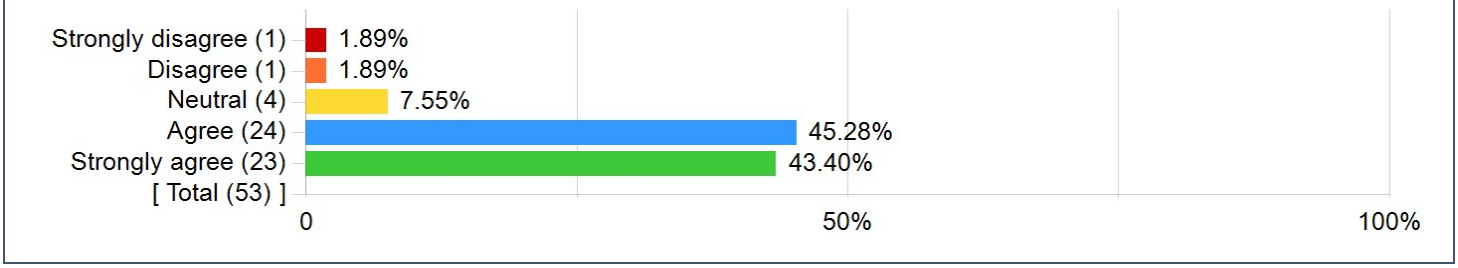


Please provide advice to future students: What could you have done to improve your learning in this course?

Comments
In order to improve my learning in this course, I could have managed my time better with the project instead of waiting until the week before to do it.
Have an understanding of the week's homework assignment, so that you are more prepared for the Friday quiz
Go to office hours and watch the lecture videos
Watch lecture videos
N/A
Gone to more office hours, study a bit more, and used the textbook.
Go to office hours
Do all of the homework without the assistance of the answer key first
Give Shadow back scratches instead of head scratches, I think he enjoys them more. Also go to office hours.
The most important thing is to stay up to date with the lecture videos and, even though homework solutions are provided, start the homework early so you can figure out the problems on your own. Secondly, as soon as you have any confusion, seek help in office hours.
studied more
Do the top hat lectures and worksheets!!!!!!! Also ask for help the TA's are more than willing to help
Actually watch the videos and do the homework
Make sure you try to do the homework by yourself without the help of the answer sheet, and go to office hours once things get

Comments
confusing and do not bank on the fact that you will understand it later on. Also, look at the Github because I am pretty sure that our midterm 2 was literally up there before we took it.
Go to office hours. Have restrained when doing homework and don't just look at the solution and attempt every problem. Retry problems multiple time till you can do them quickly
I should have attempted the homeworks as soon as they were published. It was very tempting for me to simply submit the solutions out of convenience.
Stay on top of the lecture videos and go to class!
Practice more examples and homework.
Do the homework, show up to class and pay attention , and do all of the top hat before the exams and you can easily get 100% exam average. Also do the homework before the quiz
Go to class and office hours
prepare for class by doing the tophat
I think I did a fairly good job of learning in this class, as the flipped format worked well for me this semester.
go to office hours if anything is not making sense and also utilize the resources (tophat, github, texbook)
Study more
Don't burn out before you're allowed.
Study for thermo by solving a variety of textbook and homework problems.
spend more time working on problems outside of class time
Attend class and pay attention. Most of the information makes sense in class.
do the homework problems thoroughly and study the problems he does in class
Don't take it if you're not mechanical, it does not make a good elective.
Make sure to study. Dr. Barry is not easy but his teaching style is effective.
Go to office hours to help get started with the homework. The TA's are very helpful explaining how to start problems and its easier the more you practice them.
once a week take what you know and think about how it fits into the general narrative of the class. I think i got too hyperfocused on subtopics and didn't put enough effort into relating them
Do Top–hat videos and hw before going to class.
Do not study to earn a good grade, study to truly absorb the material.
For God sakes, use the flipped lecture videos, it will dramatically improve retention. Additionally read the fine print in questions (use critical thinking) and don't be afraid to ask questions.
paying more attention to the lecture videos before class so I could be more engaged during class and using the top hat more to my advantage
Attempt the homeworks early in the week, so any questions that arise can be asked in class or office hours
I don't know
To make sure you get the most out of this course, do all the optional work. Thermo is math and the best way to get better at math is with practice.
Always go to class and ask questions even if you feel like a fool
More work
Don’t overcomplicate the problems. It’s not as difficult as it seems. Just focus on what is needed.
Go to office hours and ask questions.

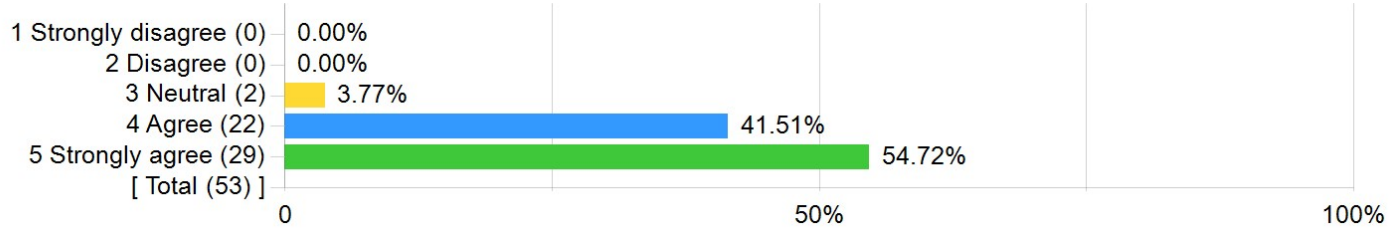
Engineering Undergrad Courses

Please rate the degree to which this course has improved...

Question	Results		
	Response Count	Mean	Standard Deviation
Your ability to identify, formulate, and solve complex engineering problems by applying principles of engineering.	53	4.30	0.75
Your ability to identify, formulate, and solve complex engineering problems by applying principles of science.	53	4.19	0.81
Your ability to identify, formulate, and solve complex engineering problems by applying principles of mathematics.	53	4.04	0.88
Your ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare.	53	3.42	1.01
Your ability to apply engineering design to produce solutions that meet specified needs with consideration of global, cultural, and social factors (i.e., sustainability principles).	53	3.32	1.05
Your ability to apply engineering design to produce solutions that meet specified needs with consideration of environmental and economic factors (i.e., sustainability principles).	53	3.40	1.04
Your ability to effectively communicate verbally with a wide range of audiences.	52	3.06	0.96
Your ability to effectively communicate in writing to a wide range of audiences.	53	3.32	0.83
Your ability to recognize ethical and professional responsibilities in engineering situations.	52	3.17	1.10
Your ability to make informed judgments that consider the impact of engineering solutions in global and societal contexts (i.e., sustainability principles).	53	3.23	1.05
Your ability to make informed judgments that consider the impact of engineering solutions in economic and environmental contexts (i.e., sustainability principles).	53	3.23	1.10
Your ability to function effectively on a team whose members together provide an inclusive environment, collaboration, and leadership.	53	3.43	1.01
Your ability to function effectively on a team whose members together establish goals, plan tasks, and meet objectives.	52	3.58	0.94
Your ability to develop appropriate experiments.	51	3.00	1.11
Your ability to conduct appropriate experiments.	53	2.98	1.15
Your ability to analyze and interpret data and use engineering judgment to draw conclusions.	53	3.92	0.92
Your ability to embrace new learning strategies to independently acquire and apply new knowledge to solve engineering problems.	53	4.08	0.81

Diversity and Inclusion

The instructor creates an inclusive learning environment for all students.



Statistics	Value
Invited Count	64
Response Count	53
Response Ratio	82.81%
Mean	4.51
Median	5.00
Mode	5
Standard Deviation	0.58