University of Pittsburgh

# Spring 2020 - Matthew Barry MEMS 0051 - INTRODUCTION TO THERMODYNAMICS - 1060 - Lecture

Project Title: **2204 - Teaching Survey Spring 2020**

Courses Audience: **51**
Responses Received: **49**
Response Rate: **96.08%**

| Subject Details | |
|---|---|
| Name | MEMS 0051 - INTRODUCTION TO THERMODYNAMICS - 1060 - Lecture |
| DEPARTMENT_CD | MEMS |
| CAMPUS_CD | PIT |
| SCHOOL_CD | ENGR |
| CLASS_NBR | 14587 |
| SECTION_NUMBER | 1060 |
| TERM_NUMBER | 2204 |
| COURSE_TYPE | Lecture |
| CLASS_ATTRIBUTE | |
| First Name | Matthew |
| Last Name | Barry |
| RANK_DESCR | Assistant Professor |
| TENURE | NT |

## Report Comments

**Student Opinion of Teaching Survey – Instructor Report**
**Report Guidelines for Spring/Summer 2020**

Provost Cudd has provided guidelines for Student Opinion of Teaching Surveys for Spring and Summer 2020.

No copy of this report will be released to anyone other than the individual faculty member. If you choose to provide a copy of this report to your dean, chair, or other administrator, you may download a PDF copy to send.

Additional questions were added at the request of the Office of the Provost to surveys completed after March 23rd in order to gather student input about the remote learning experience.

**Included in this report:**
- Responses to Remote Instruction and Learning Questions
- Numerical results to Likert scaled items - Summary and Detailed Result
- Responses to Comments or Open-ended Questions
- Responses to additional School or Department Questions (if applicable)
- Responses to additional QP/Custom Questions (if applicable)

**Collect student feedback early next term.**
**Read more about Midterm Course Surveys and the OMET option.**

Creation Date: **Wednesday, June 03, 2020**

## Remote Instruction and Learning Questions

### Students were asked to provide feedback about the move to remote instruction and learning as part of the University's response to the COVID-19 pandemic.

#### Instructor Interaction - Scale: Strongly Disagree (1) to Strongly Agree (5)

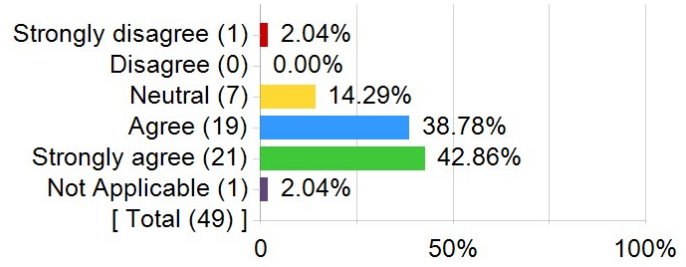
| Question | Results | | |
|---|---|---|---|
| | Response Count | Mean | Standard Deviation |
| I was able to interact effectively with the instructor after the course changed to remote instruction. | 48 | 4.23 | 0.86 |

#### Course Resources - Scale: Strongly Disagree (1) to Strongly Agree (5)

| Question | Results | | |
|---|---|---|---|
| | Response Count | Mean | Standard Deviation |
| I had the resources I needed to finish my coursework when the course was changed to a remote instruction format. | 49 | 4.10 | 0.94 |

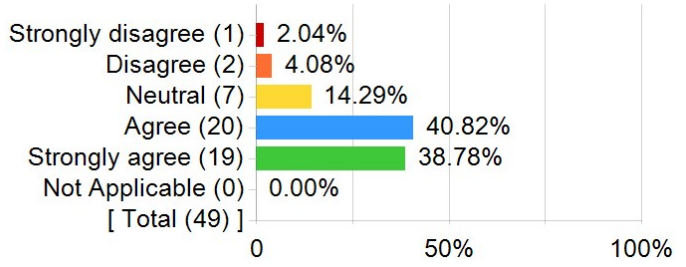
#### Instructor and Course Details

1. I was able to interact effectively with the instructor after the course changed to remote instruction.




| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 4.23 |
| Median | 4.00 |
| Mode | 5 |
| Standard Deviation | 0.86 |

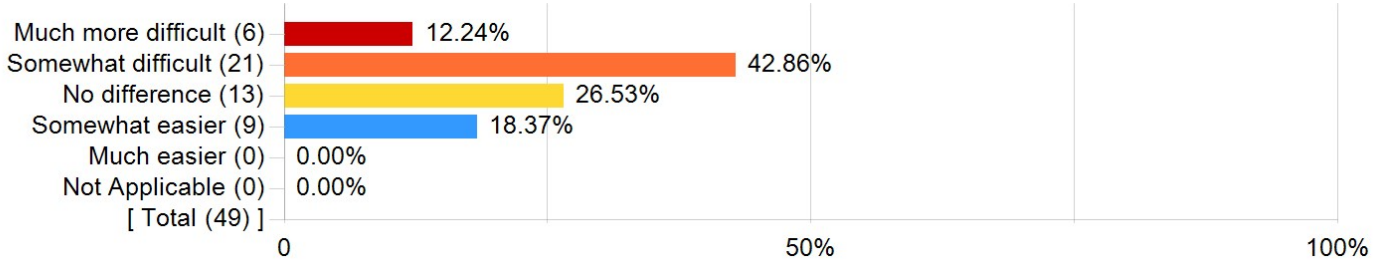
2. I had the resources I needed to finish my coursework when the course was changed to a remote instruction format.




| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 4.10 |
| Median | 4.00 |
| Mode | 4 |
| Standard Deviation | 0.94 |

## Move to the remote environment - Scale: Much more difficult (1) to much easier (5)

Moving to the remote environment made it (blank) for me to learn.



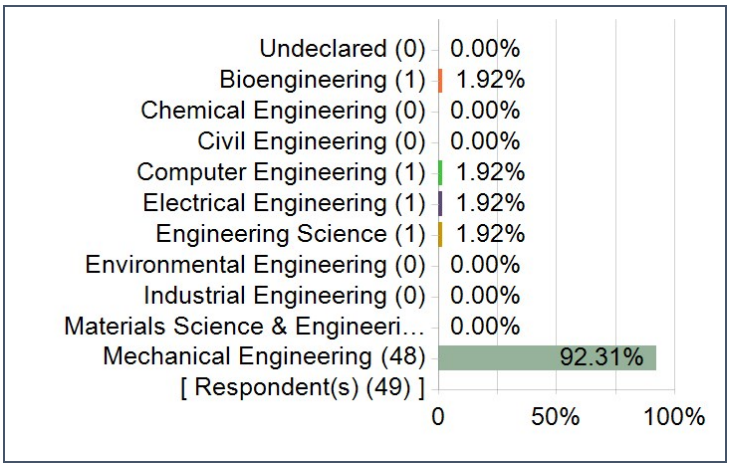

| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 2.51 |
| Median | 2.00 |
| Mode | 2 |

**What do you think the University should know about your experience as a student in the current remote learning situation?**

| Comments |
| --- |
| this class is too hard to be taught online |
| It can be beneficial if the lectures are recorded. |
| Overall the professors within the Swanson School of Engineering were extremely prepared and did an excellent job of transitioning learning. |
| The experience is very dependent on the professor's ability to deliver content in an organized and consistent way, and be available to their students. Dr Barry was very effective, although not all were. |
| I've had to work 30 hours a week on top of school. Makes it stressful |
| Though I was able to continue as normal with the remote format, I believe the in person lectures are better. |
| I think in general, being remote and out of the school environment made it definitely more challenging to focus on school and classes. Being at school provides a structure that allows students to both focus on school and outside activities that bring them joy. Taking away both but still being needing to learn and study makes a difficult and new experienced that takes time to adjust to. |
| It sucks |
| My classes had a pretty good transition. Although working at home definitely makes me less efficient with my time and I miss the in–person interaction with my TAs, peers, and friends. |
| I miss the structure provided by lectures; many of my classes were available at my leisure, but I think scheduled lectures would have been a better solution for me. |
| The class felt slightly less organized after going to remote instruction |
| Transition was relatively smooth. Teacher gave us a revised schedule after moving to remote learning but didn't completely follow it, and was a little behind on getting resources out, which was a bit annoying, but understandable. All things considered, it was a solid experience. |
| It is hard to access resources especially being in a different time zone. I do not think that the University has any part to play in this but I do believe it makes learning more difficult. |
| nothing |
| I haven't seen the light of day in weeks. It is much more difficult without peer interaction. Motivation is dwindling. |
| Online learning is much more difficult. If Pitt decides to do online classes in the Fall I will not be attending. |
| It kind of felt like an inordinate amount of pressure was put on the professors to figure out a way to move to online learning. I'm not really sure but maybe the administration could have figured out some ways to help |
| Not having face to face instruction makes learning very difficult |
| this class is almost impossible using remote learning. |
| I struggle to Concentrate |
| recorded videos is the move instead of in person lectures |
| It didn't really affect this class much |
| Everyone I have spoken to who is currently taking online classes all says how hard it is to engage with the coursework and stay motivated. I'm very glad that the University has allowed for some flexibility with the optional pass/fail grading scale. |
| The remote learning situation at Pitt was treated like it was a work–from–home initiative instead of working through a pandemic. Many teachers were unyielding and even made school more difficult by holding students to the same standards in substandard conditions. Professor Barry did his best to alleviate the stress of his students and offering plenty of office time, for which I am thankful. |
| I didn't have any issues |
| Hopefully this doesnt become a full time thing as having a space dedicated to learning was helpful for me to focus on learning, and performing work on campus made it easier to do so. |
| It's unfortunate that there are so few alternatives from the given situation, but I truly believe that it would be inappropriate to consider the current remote delivery as near equal to traditional classes in terms of quality of learning. |
| made office hours difficult to attend due to a time difference. |

## Swanson School of Engineering Major/Program Area

**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).**




## University Questions

### Instructor Summary of Results - Scale: Strongly Disagree (1) to Strongly Agree (5)

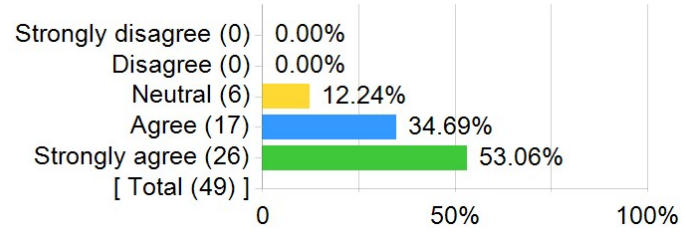
| Question | Results | | |
|---|---|---|---|
| | Response Count | Mean | Standard Deviation |
| The instructor stimulated my thinking. | 49 | 4.41 | 0.70 |
| The instructor was enthusiastic about teaching the course. | 49 | 4.27 | 0.84 |
| The instructor presented the course in an organized manner. | 49 | 4.31 | 0.92 |
| The instructor maintained an environment where students felt comfortable participating. | 49 | 3.94 | 1.01 |
| The instructor maintained an environment where students felt comfortable seeking assistance. | 49 | 3.98 | 0.88 |
| The instructor provided helpful feedback. | 49 | 4.06 | 0.88 |
| Assignments contributed to my understanding of the subject. | 48 | 4.31 | 0.75 |
| Overall | - | 4.18 | 0.87 |

### Instructor's overall teaching effectiveness

| Question | Results | | |
|---|---|---|---|
| | Response Count | Mean | Standard Deviation |
| Express your judgment of the instructor's overall teaching effectiveness. | 49 | 3.96 | 0.98 |

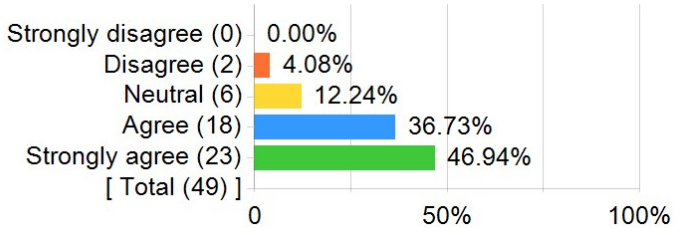
### Instructor Items: Detailed Results

## 1. The instructor stimulated my thinking.



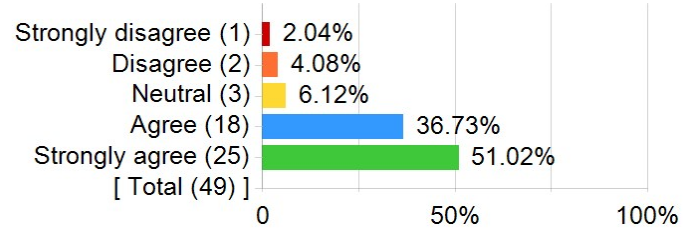

| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 4.41 |
| Median | 5.00 |
| Mode | 5 |

## 2. The instructor was enthusiastic about teaching the course.



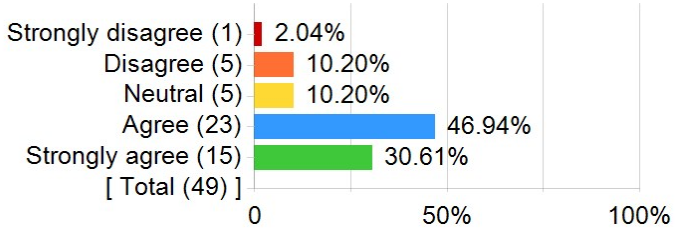

| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 4.27 |
| Median | 4.00 |
| Mode | 5 |

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



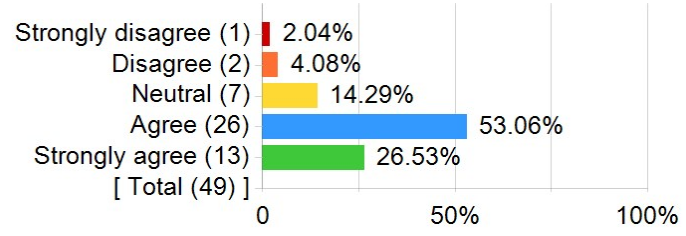

| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 4.31 |
| Median | 5.00 |
| Mode | 5 |

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



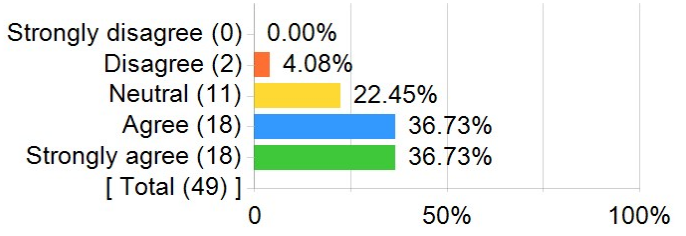

| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 3.94 |
| Median | 4.00 |
| Mode | 4 |

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



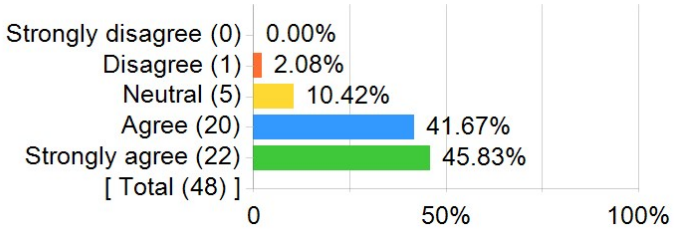

| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 3.98 |
| Median | 4.00 |
| Mode | 4 |

## 6. The instructor provided helpful feedback.




| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 49 |
| Response Ratio | 96.08% |
| Mean | 4.06 |
| Median | 4.00 |
| Mode | 4, 5 |

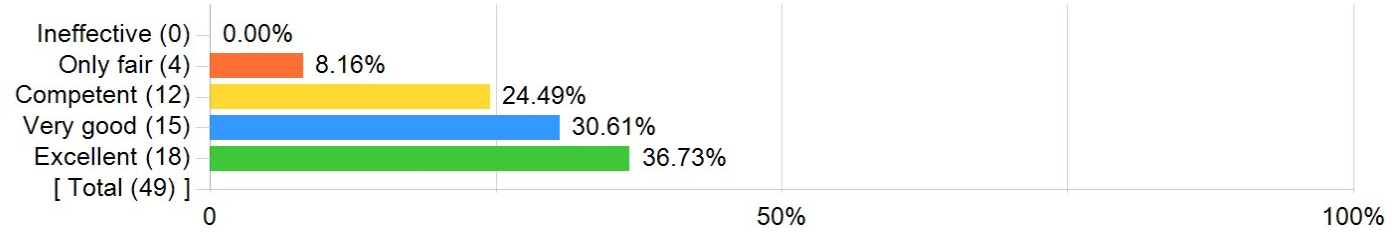
7. Assignments contributed to my understanding of the subject.




| Statistics | Value |
|---|---|
| Invited Count | 51 |
| Response Count | 48 |
| Response Ratio | 94.12% |
| Mean | 4.31 |
| Median | 4.00 |
| Mode | 5 |

## Instructor's overall teaching effectiveness:

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



## Comments

### What did the instructor do to help you learn?

| Comments |
| --- |
| the homeworks were very educational |
| The instructor presented information in an organized manner. |
| Overall I feel like I have an in–depth understanding of thermodynamics that is much better than my peers in other sections of similar classes. |
| Dr. Barry is extremely knowledgeable. He is consistent and organized, and his classes are very rewarding to those who are highly motivated. The way he structures his compels his students to try that much harder. |
| examples |
| Made homework's similar to exams |
| Gave challenging homework to help prepare for midterms |
| He would willingly go above and beyond to ensure you understood the material. |
| I really like the structure of the class. Dr. Barry explains things very well and in great detail. |
| He provided examples that allowed us to understand the concepts fully. Also, he provided us with far, stimulating homework that pushed us to learn more beyond the basics. |
| I dunno |
| Very available for help, showed interest in the subject |
| The organized manner in which information is conveyed, as well as methodical practice problems were very helpful. |
| Linear interpolation, P–v T–v and T–s diagrams, thermo processes, various steady–state devices, how to read a steam table, and various thermo formulas |
| Motivated me to not be a crappy engineer. |
| Gave real life examples to help us understand how the concepts and the homework was very relevant to our understanding of the subject. |
| He spoke with me whenever I needed him to, and his explanations of the content made it seem simpler. |
| Provided a lot of resources to help out during assignments and prepare for exams. Posted everything online so we were able to go back/go ahead to look at material for the course. |
| Numerous Lectures and Office Hours that were accessible and easy to learn. |
| Challenged me |
| Homeworks were difficult but manageable. Doing the homeworks and going to office hours helped the most, as well as doing old homeworks and exams. |
| Provided assignments and exams from previous years. |
| Making the homework hard really helps me to learn the material. |
| The professor explained material clearly and effectively, and provided material to reinforce understanding of course topics. |
| Explains concepts very well, assignments were usually good |
| He goes a lot deeper than other professors do into the subject. He also challenges students with the homework. |
| made homeworks very long and difficult. |
| The fundamentals of thermodynamics |
| HW problems were very challenging and although they made me frustrated sometimes, it helped me a lot. He held a crap ton of office hours |
| Challenge my thinking with complicated problems |
| Going through all of the examples in class allowed me to apply the numerous equations to many different situations. |
| Dr. Barry is great at challenging his students. I think a lot of his assignments and exams are challenging, which is a good thing in my opinion because it forces students to work really hard to fully understand the course content. |
| It's ok to go to office hours frequently. This was one of the first classes I needed to go to office hours frequently. |
| He gave us hard homework and quizzes and had faith in his students to do well and try hard. |
| The homework was tough and helped me prepare for exams |
| Dr. Barry gave us intense never–before–seen homework problems. I spent hours on these problems and many of them were very frustrating but I most definitely grew from all of the problem solving and critical thinking. |

| Comments |
| --- |
| I noted that Dr. Barry took the time to get to know all of his students and made it a point to check in on our understanding of the material. This showed that he really cared about our education and progress as engineering students. |
| He made himself very available to ask questions. |
| Provided resources for more practice problems with solutions going through step by step for similar problems. |
| Provided lots of assistance at office hours and took the time to explain things in detail |
| Kept expectations high and assigned complex problems that required me to think about new ways to approach a problem. Homeworks were comprehensive and exams were challenging to say the least. Provided abundant resources and opportunities to get help and understand the material better. The lecture videos were concise and covered most of the necessary material. I would like to emphasize the dramatic change that occurred with the online shift. The exams were still challenging, but not having the time limit of a traditional exam I feel was much more reflective of my ability. The test was longer, but it tested everything to some extent, which a fifty minute exam struggles to do. I felt that having the time to thoroughly check my work before submitting put my mind at ease, and I think my score better reflected how well I actually knew the material in its entirety. |
| Gives challenging homework assignments. |

### What could the instructor do to improve?

| Comments |
| --- |
| nothing this guy is an excellent teacher |
| Reduce the amount of homework. |
| More examples that are closer to the difficulty of homework problems. Sometimes there were (what felt like) drastic jumps in difficulty to the point where I struggled to learn from the assignment and was more focused on just getting through the problem set. |
| Less sarcasm, and less of a sink–or–swim approach to grading. |
| Make everything not as long. More time doing homework than studying |
| More examples |
| The occasional demonstration or project would be nice. |
| I think he could be a little more transparent with the class. Sometimes, I feel like he says he will do something and then fails to do it. While this could be due to something completely reasonable and understanding, he leaves all of the students simply waiting for him. I think if he could communicate a little better with students, he would be able to form better relationships with more of his students, even though I think he does a good job already. |
| I dunno |
| Make it more apparent that reading the textbook is highly necessary from the start. |
| Honestly, thermo was probably one of the better structured courses I've taken yet. Keep it as is |
| I don't think the material is hard, but your courses are always intimidating, and overcoming that is a challenge. |
| Make sure kids know how much you actually care about us and our well being throughout the course. |
| Reduce the difficulty of the class. It's ok to make a class challenging, but when an exam average is a 50% and the homework takes hours upon hours to complete, and is then graded strictly, it makes the class stressful, especially considering nothing is curved |
| Some of the vocabulary and terms used by the instructor were a little confusing at times and maybe spending some time giving an introduction to regularly used terms may make the course clearer to understand. |
| Organization would be helpful |
| More Shadow! |
| Be nice to students. |
| More in class review before a exam. |
| it felt like the homework hadn't really prepared us for some of the questions on the first exam |
| Not give exams where the average is under 50% |
| He teaches a lot of the concepts through math derivations and i think sometimes after a lengthy math proof the concept could get lost. I think emphasizing what things conceptually mean would help in the learning. |
| do more challenging in class problems that are on par in difficulty with homework problems. |
| give more time on tests like in the second midterm |
| nothing |
| If I'm really confused about something, it would be better to give a direct answer to a question, putting me on a good track rather than confusing me more |

| Comments |
| --- |
| The MatLab assignments were kind of difficult since we had not covered the program in almost a year so it would be helpful to teach some of the basics over again. |
| I both love and hate Dr. Barry's exams. He usually picks out a few very challenging problems, which is good because students really need to learn the content or they will bomb the exam. However, as someone who studies like crazy and still winds up with a 55% on the first midterm because I ran out of time, it can be crushing. I wish the exams were more forgiving with partial credit or were slightly curved to take some of this pressure off. |
| Some of the earlier concepts, such as reading steam tables and understanding P–v and T–v diagrams need to be emphasized more. The entire course is based off these concepts and should be explained more thoroughly at the beginning. |
| I can't think of anything right now. |
| It would be nice to have grades back a little quicker |
| At the beginning of each lecture that introduces another machine, maybe show a video or picture that describes its function. Im a visual learner so that would make concepts a lot easier. Most are self explanatory but it would be a nice refresher.<br>Also, maybe try the flipped classroom for thermodynamics as well because that is my favorite style of learning. |
| I can't think of anything |
| I know sarcasm is kinda your MO but I think it discourages students from asking questions in class |
| Felt like the in class instruction/examples wasn't sufficient to prepare for the difficulty of the homework and exams |
| When homework problems were unsolvable (thinking of one where the temperature of the fluid was over 200000 Kelvin), it caused me to agonize unnecessarily about something that didn't contribute greatly to my understanding. The lecture videos were a bit too fast at times. |
| Make the first mid–term more realistic for the level of understanding we have in this class. |

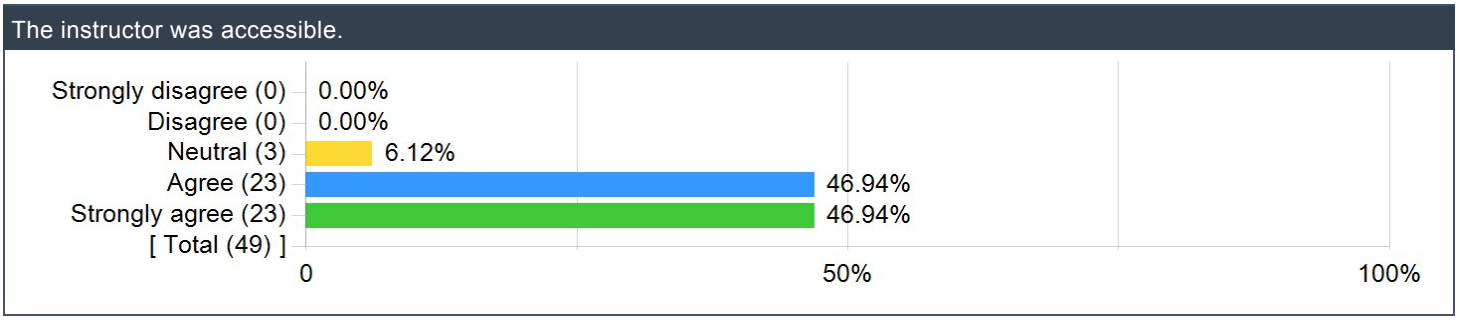
### Do you have any other information that you would like your instructor to know?

| Comments |
| --- |
| You're awesome, hard but awesome |
| no. |
| I only ever heard negative things about Doctor Barry from students that had him last semester, I think the hate and negative comments are unwarranted. I've definitely learned the most from Dr. Barry and feel prepared for future courses. He does an excellent job teaching Thermodynamics as well as being an approachable figure who I enjoy interacting with both during and outside of class time. |
| Dr. Barry is an exceptional professor. I just wish that opting to take his classes didn't mean a massively larger time commitment for a much less satisfactory grade. |
| No |
| He makes the classroom setting more enjoyable. |
| I really enjoyed the class and really pushed myself to learn the topic. |
| Nope |
| Nah |
| I respect your attitude towards the class. |
| no |
| When half the class fails the exam and is failing the class towards the end of the semester, we as students get very stressed and it has a negative effect on our work. |
| No. |
| no |
| N/A |
| none |
| Thank you for providing me the ammunition to make hot thermodynamics memes |
| lecture examples should have solutions for a basis for homework/studying. |
| not really |
| the class is really tough |
| The lectures and examples in the second half of the class were much better than in the first half. |
| You are my favorite professor at Pitt. I'm really glad my other MechE friends didn't convince me to run for the hills after statics 1. Thank you for challenging us to make us all better engineers in the future. |
| I understand you make this course tough to simulate the real–world but I think it is more important for students to understand concepts than it is to be able to widely apply them. That is what applied thermo is for. |
| Is matlab that important? |
| I’m not sure if I completely appreciated your style of teaching, but you care about us learning, which is nice and not that common among professors |
| n/a |

## ENGINEERING

### Swanson School of Engineering Items

**The instructor was accessible.**



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

| Comments |
| --- |
| Make sure to do practice problems from the book. |
| I could have spent more time in office hours and started some of the assignments earlier. I also could have started studying for the first exam earlier. |
| Stay organized, utilize the resources available to you and try hard all semester long. |
| Dedicate every second outside of other classes to this class |
| Do more practice problems |
| Book problems |
| Make sure your instructor knows who you are. |
| Read the textbook and ENGAGE IN OFFICE HOURS and with other students. Both of those tools provide resources that make learning much clearer. |
| Don’t take him |
| Get over your fear of Barry. He's very helpful and nice if you show the initiative to learn and show him that you're putting in effort. Don't be afraid to ask him how best to succeed in his class, he'll make a learning plan for you for your best chance at success. |
| Do book problems whenever you feel uncomftorable with a subject |
| Spend more time in office hours. |
| Read the book more when I got confused on specific concepts. |
| It's a difficult course. The professors will do what they can to help you, but in the end you have to be the one to put the work in. |
| Do every single difficult practice problem in the book. It still won't fully prepare you for the exams, but you may be able to get above the average grade of a 50%. |
| Go to Barrys office hours |
| Attend Lectures and Office Hours regularly, start homework assignments much before the deadline. |
| Go to office hours more |
| Go to office hours a lot. Put effort into homework. Read ahead of time. |
| Studied harder, |
| Study hard and do lots of practice problems. |
| Don't take it at 9am if at all possible |
| Do more practice problems |
| Barry really challenges you but go an talk to him and he will help you. |
| do the homework in groups, they are very difficult on your own. |
| Don't overthink things |
| read the textbook its insane how much it helps |
| Done more problems |
| Do more problems from the textbook, as they are similar to the homework problems. |
| Study like crazy. Don't stress out about the exams, if you are close to the average you will be fine. |
| Go to office hours and ask lots of questions |
| Pay attention. He teaches fast and is there to help you learn what you want to know, but he won't hold your hand. |
| Use all of the materials provided, eg last years homeworks and exams |
| I read the book but I should have done some problems from the book. |
| Practice more difficult example problems |
| Go to office hours if you’re struggling. Some of the questions on homeworks rely on assumptions and intuition that aren’t that obvious and will leave you struggling for hours if you don’t seek help. It’s probably the best way to learn efficiently in this class |
| Office hours for every homework |
| Just work hard. Read the book when you need to, take the homeworks seriously and start them early, and don't be afraid to ask for help. Exams will be rough, but keep your head on straight and you'll be fine. |
| n/a |

## ENGINEERING UNDERGRAD

**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. | 48 | 4.17 | 0.78 |
| Your ability to identify, formulate, and solve complex engineering problems by applying principles of science. | 48 | 4.06 | 0.84 |
| Your ability to identify, formulate, and solve complex engineering problems by applying principles of mathematics. | 48 | 3.96 | 0.85 |
| Your ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare. | 47 | 3.26 | 0.92 |
| 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). | 47 | 2.83 | 1.03 |
| Your ability to apply engineering design to produce solutions that meet specified needs with consideration of environmental and economic factors (i.e., sustainability principles). | 48 | 3.13 | 1.00 |
| Your ability to effectively communicate verbally with a wide range of audiences. | 48 | 2.75 | 1.06 |
| Your ability to effectively communicate in writing to a wide range of audiences. | 48 | 2.81 | 1.10 |
| Your ability to recognize ethical and professional responsibilities in engineering situations. | 48 | 3.06 | 0.95 |
| Your ability to make informed judgments that consider the impact of engineering solutions in global and societal contexts (i.e., sustainability principles). | 47 | 2.94 | 0.94 |
| Your ability to make informed judgments that consider the impact of engineering solutions in economic and environmental contexts (i.e., sustainability principles). | 48 | 3.04 | 1.01 |
| Your ability to function effectively on a team whose members together provide an inclusive environment, collaboration, and leadership. | 48 | 2.90 | 1.24 |
| Your ability to function effectively on a team whose members together establish goals, plan tasks, and meet objectives. | 48 | 2.98 | 1.25 |
| Your ability to develop appropriate experiments. | 48 | 2.90 | 1.26 |
| Your ability to conduct appropriate experiments. | 48 | 2.83 | 1.36 |
| Your ability to analyze and interpret data and use engineering judgment to draw conclusions. | 48 | 3.81 | 0.89 |
| Your ability to embrace new learning strategies to independently acquire and apply new knowledge to solve engineering problems. | 48 | 4.10 | 0.88 |