

Virginia Tech
Fall 2023 VT Student Perceptions of Teaching (SPOT)

Course: ME_4524_87348_202309: Robotics & Automation-ME_4524_87348_202309
 Instructor: Dylan Patrick Losey *
 Response Rate: 45/49 (91.84 %)

1 - Please indicate the extent to which you agree or disagree with each of the following statements:

1A - The instructor was well prepared.

Dylan Patrick Losey

Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%		5.89	5.23	5.20					
Disagree	(2)	0	0.00%		Question	College	Department					
Somewhat disagree	(3)	0	0.00%		Mean	STD	Median	Department	Mean	STD	Median	
Somewhat agree	(4)	0	0.00%		45/49 (91.84%)	5.89	0.32	6.00	25753	5.23	1.09	6.00
Agree	(5)	5	11.11%		6.00	1877	5.20	1.12	6.00			
Strongly agree	(6)	40	88.89%									

1 - Please indicate the extent to which you agree or disagree with each of the following statements:

1B - The instructor presented the subject matter clearly.

Dylan Patrick Losey

Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%		5.56	5.06	5.02					
Disagree	(2)	1	2.22%		Question	College	Department					
Somewhat disagree	(3)	2	4.44%		Mean	STD	Median	Department	Mean	STD	Median	
Somewhat agree	(4)	0	0.00%		45/49 (91.84%)	5.56	0.89	6.00	25573	5.06	1.23	5.00
Agree	(5)	10	22.22%		5.00	1861	5.02	1.21	5.00			
Strongly agree	(6)	32	71.11%									

1 - Please indicate the extent to which you agree or disagree with each of the following statements:

1C - The instructor provided feedback intended to improve my course performance.

Dylan Patrick Losey

Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%		5.11	5.03	4.94					
Disagree	(2)	2	4.44%		Question	College	Department					
Somewhat disagree	(3)	5	11.11%		Mean	STD	Median	Department	Mean	STD	Median	
Somewhat agree	(4)	6	13.33%		45/49 (91.84%)	5.11	1.27	6.00	25560	5.03	1.25	5.00
Agree	(5)	5	11.11%		5.00	1865	4.94	1.24	5.00			
Strongly agree	(6)	27	60.00%									

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Response Rate: 45/49 (91.84 %)

1 - Please indicate the extent to which you agree or disagree with each of the following statements:												
1D - The instructor fostered an atmosphere of mutual respect.												
Dylan Patrick Losey												
Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%			5.71	5.35	5.38	Question	College	Department	
Disagree	(2)	1	2.22%									
Somewhat disagree	(3)	0	0.00%									
Somewhat agree	(4)	2	4.44%									
Agree	(5)	5	11.11%									
Strongly agree	(6)	37	82.22%									
					0	25	50	100	Question	College	Department	
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	
45/49 (91.84%)	5.71	0.76	6.00	25533	5.35	1.03	6.00	Department	1858	5.38	0.94	6.00

1 - Please indicate the extent to which you agree or disagree with each of the following statements:												
1E - Overall, the instructor's teaching was effective.												
Dylan Patrick Losey												
Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%			5.53	5.04	5.03	Question	College	Department	
Disagree	(2)	1	2.22%									
Somewhat disagree	(3)	1	2.22%									
Somewhat agree	(4)	2	4.44%									
Agree	(5)	10	22.22%									
Strongly agree	(6)	31	68.89%									
					0	25	50	100	Question	College	Department	
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	
45/49 (91.84%)	5.53	0.87	6.00	25412	5.04	1.27	5.00	Department	1856	5.03	1.23	5.00

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Instructor: Dylan Patrick Losey *

Response Rate: 45/49 (91.84 %)

2 - 2A - What did the instructor do that most helped in your learning?

Dylan Patrick Losey

Response Rate	36/49 (73.47%)
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- All lecture videos, slides and practice problems were posted to review.
- Examples.
- Very organized. Prepared useful videos that we can watch before and after classes to reinforce knowledge
- Something about the way the information was presented and the examples used to demonstrate or explain the topic were very helpful.
- Conveyed the material in easy-to-follow slides and gave practice problems that helped to reinforce the material being taught in the lecture.
- Everything, this is one of the best classes I have ever taken. The course content was interesting, had videos relating the topics to real world examples, had well constructed assignments, had a good level of challenge, the teacher was engaging and I learned exactly what I hoped to going into the course. I also greatly appreciated the recorded lectures and class examples in case I had to miss a lecture.
- Presented the class's material via slides and went through example problems with us.
- By posting videos, notes, and practice examples to look back over while completing the homework I was able to follow through problems and learn that way.
- His slides are amazing. He shows the practical use of what we are learning before each lecture. He answers any and all questions extremely well. He is really good at lecturing and making sure all students understand the content and have fun in class.
- Lots of in class examples. This was super helpful. In addition, taking the time to derive the relevant equations really helped in understanding how concepts connected to each other.
- Losey has been a great professor to learn from in class, I have thoroughly enjoyed this course as a strictly mechanical engineer. He really brings a lot of energy and passion to the course/class which translates to the students desire to learn. I will be honest, I have struggled at times with attendance in this class, as there was a point in the middle-late part of the semester I was sick and never fully healthy, but his videos posted on CANVAS were a tremendously great resources to keep up with lectures. In addition to this, rewatching a lecture is beneficial if a certain topic doesn't make sense the first time around in class.
- Providing real life examples that are easy to understand & practice questions that can test if I understood the topic
- Some of the examples were extremely helpful, though others felt lacking in their depth of coverage of the subject matter.
- Having both in-person lectures and then having the videos to fall back on when my understanding was lacking, as well as the practice sets,
- The practice problems that we do in class are extremely helpful. A lot of the time I understand the material that we cover pretty well, but have a hard time figuring out how to implement it. Thankfully by going over practice problems this issue is addressed.
- The professionalism of his lectures and videos made it feel like a world class lecture.
- He recorded videos that I could continuously watch.
- Loved the online videos
- Strong mixture of visual examples and mathematical examples, as well as real-world application. Organized presentation with clear explanations/reasoning. Content is extremely key to learning the theory underlying robotics. Moreover, the skills can be translated into other forms of engineering problems.
- Amazingly formatted slides
- Challenging homeworks we're helpful. Also the videos are nice to introduce concepts
- Provided real world examples of the concepts that we are learning about.
- He encouraged us to ask questions and participate in class.
- He explained things very clearly and had very organized slides
- The slides that Professor Losey used were immaculate, well organized, and interesting. The practice problems all had full solutions.
- Dr. Losey used real world examples of robots to help explain the subject matter. I also found the his recorded lectures helpful in reinforcing the material discussed in the actual lecture.
- Dr. Losey was prepared and organized, his lectures were clear, and he always answered questions in a way that encouraged enthusiasm and learning.
- Power points were very well put together and working through the practice problems as a class helped
- Having the supplementary videos was very helpful
- The instructor introduced and discussed one piece of information at a time to ensure that the students understood each piece of information before moving on to the next one.
- Slide decks are immaculate. Best I've ever seen. Had a clear format every lecture, spoke clearly at a good pace, pretty much the perfect professor. Course organization was spectacular and incredibly clear and easy to follow. Homeworks were tough but effective at having us dive in and learn the material without being overwhelming. All material including practice code and videos being online was awesome. Honestly one of the best instructed courses I've had.
- Gave thought provoking homework and assigned interesting labs, as well as making all videos and modules available from day 1
- Explanations and going through practice sets was helpful.
- I really liked the companion videos for each lecture. They helped me when I was struggling through the homework.
- Pre-recorded lecture videos. He recorded every topic before the semester started, and it helped me not only when I had to miss classes, but also to go back to the topic when I'm stuck on the homework.
- The supplementary lecture videos posted on canvas was extremely helpful. The organization was also extremely helpful.

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3 - Please indicate the extent to which you agree or disagree with each of the following statements:

3A - I have a deeper understanding of the subject matter as a result of this course.

Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%			5.71	5.14	5.12	Question	College	Department	
Disagree	(2)	0	0.00%									
Somewhat disagree	(3)	1	2.22%									
Somewhat agree	(4)	0	0.00%									
Agree	(5)	10	22.22%	█								
Strongly agree	(6)	34	75.56%	██████████								
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	
45/49 (91.84%)	5.71	0.59	6.00	21974	5.14	1.09	5.00	1860	5.12	1.08	5.00	

3 - Please indicate the extent to which you agree or disagree with each of the following statements:

3B - My interest in the subject matter was stimulated by this course.

Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%			5.61	4.92	4.86	Question	College	Department	
Disagree	(2)	1	2.27%									
Somewhat disagree	(3)	0	0.00%									
Somewhat agree	(4)	2	4.55%	█								
Agree	(5)	9	20.45%	█								
Strongly agree	(6)	32	72.73%	██████████								
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	
44/49 (89.80%)	5.61	0.78	6.00	21856	4.92	1.31	5.00	1859	4.86	1.31	5.00	

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4 - 4A - What could you have done to be a better learner?

Response Rate	32/49 (65.31%)
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- Started the homework earlier.
- Done more practice.
- Gone to more office hours
- Read the lectured before class so I could have even more thought-out questions.
- Start the homework earlier in the week.
- Taken better notes, went to office hours
- Pay more attention to the Matlab codes and save my files in a more organized way
- I wish I participated more in class and asked more questions earlier on.
- I could've started the assignments earlier. Many times, I started the homework after the last office hour before the due date, which made it hard to ask questions and refine my understanding.
- Reviewing the notes and presentations, go over test and practice problems
- I could've learned to tolerate useless, leading questions like this one.
- Taken all the practice more seriously instead of only the ones I had a harder time understanding
- I could've paid more attention in class and taken better notes so that i wouldn't be as confused when I got home to try and complete the homework.
- I could have engaged more in class by asking questions and stopping Dr Losey when I didn't understand. However it is more difficult to do in a larger classroom.
- Unknown.
- Come to class more
- Made sure to attend office hours more, handled time management better
- paid attention more
- Went to office hours. Worked with peers more often. Learned lab before going to them
- I could have gone to office ours more.
- Read the textbook more
- I could have formulated a group of classmates to study and do homework together instead of tackling problems on my own.
- I could have paid better attention in class and watched the lecture videos beforehand.
- I could given myself more time to work on the homeworks since they were all pretty heavy
- Been more active in the class.
- I could have listened to the prerecorded lectures in addition to attending the in-person lectures and reading the lecture slides.
- I could have asked more questions.
- I could have come to more classes
- Should have tried harder
- I wish I spent more time reading the book, that would have helped me prepare for class and lecture.
- Come to office hours
- I could have gone to more office hours.

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5 - 5A - Please add any additional comments regarding the course and/or instructor here:

Dylan Patrick Losey

Response Rate 23/49 (46.94%)

- Great professor. HW was graded harshly.
- Great professor.
- The only thing I was this class did better was have more office hours or some form of tutoring to get additional help in understand the class material and homework.
- Dr. Losey made this course's material really simple and easy to learn. His slides and lectures provided us with everything we had to know for the homeworks and tests. He often paused his lectures to make sure we understood the material and give us a chance to ask questions. He is REALLY good at answering questions. His lectures were very engaging. At the beginning of each class, he would show us how the theory we were about to learn applies to actual robots. Sometimes he flipped through slides too fast and I couldn't write down all the notes I wanted. I also think some of the homeworks were way too hard, especially for how much of the grade they're worth.
- The grading on the homework was intense but with very little feedback on why points were taken or not given
- Dr. Losey is by far one of the best professors I have ever had in my undergraduate career.
- I really enjoyed this class! I feel like I learned a lot and had fun learning the material.
- This class was helpful to acquire basic knowledges of robotics
- I found this course to be very interesting. The information was presented in a way that anyone who wanted to learn could easily do so if they put in the effort. One thing I would prefer though, would be more office hours.
- He's an impressive instructor and you can tell he has worked on his presentation skills however, he tends to revert to rapid speech during lecture and can breeze through concepts unintentionally sometimes. Dr Losey does an amazing job with the slides breaking down the concepts as he presents it but sometimes the pace of his presentation does not match the pace of content that he is covering.
- The course was rough. Homeworks were extremely lengthy, had some of the same stuff as the lectures, but would throw stuff at us that we didn't know how to do. Graders didn't explain why points were taken off.
- Wish there were more professor office hours, or at least TA office hours
- Very receptive to questions. Gave help for students to succeed.
- Nicely related subject matters to the real world (especially enjoyed the videos in the slides), overall one of the best and most interesting classes I have taken at Tech!
- Sometimes, I feel like Professor Losey rushes and speaks very fast. During these moments, concepts become difficult to digest.
- I personally really like Dr. Losey's teaching style. I had fun in class.
- The aspects of this class taught later in the semester could have used more time going over practice problems and helpful code
- The problems in the lectures did not reflect the problems in the homework.
- Awesome professor. Please pay him more so he can train others to teach like him.
- Overall a great course and instructor.
- The homeworks were graded too strictly. The homework is where you learn and make mistakes, so it should have been graded more leniently.
- Professor Losey was very good, I could have done more to be a better student.
- The office hours during the semester were only for one hour per week. I wish there was more office hours opportunities since the class is so big the office can get crowded in that hour

6 - 6A - How would you rate the physical environment in which you took this class based upon your ability to see, hear, concentrate, and participate?

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Very Bad	(1)	0	0.00%		5.53	5.23	5.15				
Bad	(2)	0	0.00%								
Poor	(3)	0	0.00%								
Fair	(4)	3	6.67%								
Good	(5)	15	33.33%								
Very Good	(6)	27	60.00%								
					0	25	50	100	Question	College	Department
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	5.53	0.63	6.00	21701	5.23	0.94	5.00	1854	5.15	0.96	5.00

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7 - 7A - Please add any comments about the physical environment here:

Response Rate	12/49 (24.49%)
<ul style="list-style-type: none"> • fine • The lecture room was great, spacious and it was easy to ask questions during the lecture. • Room was perfect for lecture. • Students concentrating on the class, and asking different questions , answering the question that the instructor is asking • The physical environment of this course was very good. The students were respectful and the professor did a great job getting the students to interact with the informaiton being learned. • N/A • No comment needed • N/A • The room where lectures were held was larger than the rooms I am used to being in for lectures. I needed to sit further away from the instructor than I normally do in order to see the presentation screen for the lecture slides. • It was fine. • Why have the class so far away from everything. • N/A 	

8 - Please indicate the extent to which you agree or disagree with each of the following statements:

I improved my ability to problem solve.

Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	0	0.00%									
Disagree	(2)	0	0.00%									
Somewhat disagree	(3)	0	0.00%									
Somewhat agree	(4)	7	15.56%	█								
Agree	(5)	12	26.67%	██								
Strongly agree	(6)	26	57.78%	██████								
					0	25	50	100	Question	College	Department	
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	
45/49 (91.84%)	5.42	0.75	6.00	21863	5.08	1.07	5.00	1857	5.08	1.03	5.00	

8 - Please indicate the extent to which you agree or disagree with each of the following statements:

The textbook or course readings made a valuable contribution to my learning.

Response Option	Weight	Frequency	Percent	Percent Responses	Means							
Strongly disagree	(1)	2	4.55%									
Disagree	(2)	6	13.64%	█								
Somewhat disagree	(3)	7	15.91%	██								
Somewhat agree	(4)	4	9.09%	█								
Agree	(5)	8	18.18%	███								
Strongly agree	(6)	17	38.64%	██████								
					0	25	50	100	Question	College	Department	
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	
44/49 (89.80%)	4.39	1.66	5.00	21725	4.66	1.41	5.00	1849	4.56	1.40	5.00	

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8 - Please indicate the extent to which you agree or disagree with each of the following statements:

The objectives of the course were clearly explained.

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Strongly disagree	(1)	0	0.00%		5.47	5.13	5.03				
Disagree	(2)	1	2.22%								
Somewhat disagree	(3)	0	0.00%								
Somewhat agree	(4)	3	6.67%								
Agree	(5)	14	31.11%								
Strongly agree	(6)	27	60.00%								
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	5.47	0.81	6.00	21804	5.13	1.11	5.00	1855	5.03	1.15	5.00

8 - Please indicate the extent to which you agree or disagree with each of the following statements:

The out-of-class assignments were educationally valuable.

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Strongly disagree	(1)	0	0.00%		5.51	5.05	5.00				
Disagree	(2)	0	0.00%								
Somewhat disagree	(3)	0	0.00%								
Somewhat agree	(4)	4	8.89%								
Agree	(5)	14	31.11%								
Strongly agree	(6)	27	60.00%								
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	5.51	0.66	6.00	21677	5.05	1.17	5.00	1843	5.00	1.19	5.00

9 - The instructor related theories and concepts to practical issues.

Dylan Patrick Losey

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Strongly disagree	(1)	0	0.00%		5.73	5.24	5.32				
Disagree	(2)	0	0.00%								
Somewhat disagree	(3)	0	0.00%								
Somewhat agree	(4)	0	0.00%								
Agree	(5)	12	26.67%								
Strongly agree	(6)	33	73.33%								
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	5.73	0.45	6.00	25104	5.24	1.04	6.00	1837	5.32	0.96	6.00

10 - At the end of this course, how do I rate my ability to:

Determine the number of degrees of a robotic system

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Poor	(1)	0	0.00%		3.69	3.69	3.69				
Fair	(2)	1	2.22%								
Good	(3)	12	26.67%								
Excellent	(4)	32	71.11%								
N/A	(0)	0	0.00%								
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	3.69	0.51	4.00	45	3.69	0.51	4.00	45	3.69	0.51	4.00

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10 - At the end of this course, how do I rate my ability to:
Describe and sketch the common manipulator configurations

Response Option	Weight	Frequency	Percent	Percent Responses	Means																										
Poor	(1)	1	2.22%			3.53	3.53																								
Fair	(2)	3	6.67%																												
Good	(3)	12	26.67%																												
Excellent	(4)	29	64.44%																												
N/A	(0)	0	0.00%																												
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Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median																				
45/49 (91.84%)	3.53	0.73	4.00	45	3.53	0.73	4.00	45	3.53	0.73	4.00																				

10 - At the end of this course, how do I rate my ability to:
Use the rotation and transform matrices to describe link positions and orientations

Response Option	Weight	Frequency	Percent	Percent Responses	Means																										
Poor	(1)	0	0.00%			3.69	3.69																								
Fair	(2)	2	4.44%																												
Good	(3)	10	22.22%																												
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Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median																				
45/49 (91.84%)	3.69	0.56	4.00	45	3.69	0.56	4.00	45	3.69	0.56	4.00																				

10 - At the end of this course, how do I rate my ability to:
Solve the forward kinematics of any serial manipulator

Response Option	Weight	Frequency	Percent	Percent Responses	Means																										
Poor	(1)	0	0.00%			3.67	3.67																								
Fair	(2)	3	6.67%																												
Good	(3)	9	20.00%																												
Excellent	(4)	33	73.33%																												
N/A	(0)	0	0.00%																												
<table border="1"> <thead> <tr> <th>Response Rate</th> <th>Mean</th> <th>STD</th> <th>Median</th> <th>College</th> <th>Mean</th> <th>STD</th> <th>Median</th> <th>Department</th> <th>Mean</th> <th>STD</th> <th>Median</th> </tr> </thead> <tbody> <tr> <td>45/49 (91.84%)</td> <td>3.67</td> <td>0.60</td> <td>4.00</td> <td>45</td> <td>3.67</td> <td>0.60</td> <td>4.00</td> <td>45</td> <td>3.67</td> <td>0.60</td> <td>4.00</td> </tr> </tbody> </table>					Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	45/49 (91.84%)	3.67	0.60	4.00	45	3.67	0.60	4.00	45	3.67	0.60	4.00			
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median																				
45/49 (91.84%)	3.67	0.60	4.00	45	3.67	0.60	4.00	45	3.67	0.60	4.00																				

10 - At the end of this course, how do I rate my ability to:
Set up the inverse kinematic equations for any serial manipulator

Response Option	Weight	Frequency	Percent	Percent Responses	Means																										
Poor	(1)	0	0.00%			3.49	3.49																								
Fair	(2)	5	11.11%																												
Good	(3)	13	28.89%																												
Excellent	(4)	27	60.00%																												
N/A	(0)	0	0.00%																												
<table border="1"> <thead> <tr> <th>Response Rate</th> <th>Mean</th> <th>STD</th> <th>Median</th> <th>College</th> <th>Mean</th> <th>STD</th> <th>Median</th> <th>Department</th> <th>Mean</th> <th>STD</th> <th>Median</th> </tr> </thead> <tbody> <tr> <td>45/49 (91.84%)</td> <td>3.49</td> <td>0.69</td> <td>4.00</td> <td>45</td> <td>3.49</td> <td>0.69</td> <td>4.00</td> <td>45</td> <td>3.49</td> <td>0.69</td> <td>4.00</td> </tr> </tbody> </table>					Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median	45/49 (91.84%)	3.49	0.69	4.00	45	3.49	0.69	4.00	45	3.49	0.69	4.00			
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median																				
45/49 (91.84%)	3.49	0.69	4.00	45	3.49	0.69	4.00	45	3.49	0.69	4.00																				

Virginia Tech
 Fall 2023 VT Student Perceptions of Teaching (SPOT)

Course: ME_4524_87348_202309: Robotics & Automation-ME_4524_87348_202309
 Instructor: Dylan Patrick Losey *
 Response Rate: 45/49 (91.84 %)

10 - At the end of this course, how do I rate my ability to:
Perform velocity and force analysis for any serial manipulator

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Poor	(1)	0	0.00%			3.31	3.31	3.31			
Fair	(2)	7	15.56%	█							
Good	(3)	17	37.78%	██							
Excellent	(4)	21	46.67%	████							
N/A	(0)	0	0.00%								
0 25 50 100					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	3.31	0.73	3.00	45	3.31	0.73	3.00	45	3.31	0.73	3.00

10 - At the end of this course, how do I rate my ability to:
Determine singular configurations for common manipulators

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Poor	(1)	2	4.44%			3.16	3.16	3.16			
Fair	(2)	6	13.33%	█							
Good	(3)	20	44.44%	██							
Excellent	(4)	17	37.78%	████							
N/A	(0)	0	0.00%								
0 25 50 100					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	3.16	0.82	3.00	45	3.16	0.82	3.00	45	3.16	0.82	3.00

10 - At the end of this course, how do I rate my ability to:
Generate trajectory plans for robot motion

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Poor	(1)	0	0.00%			3.05	3.05	3.05			
Fair	(2)	10	22.73%	█							
Good	(3)	22	50.00%	██							
Excellent	(4)	12	27.27%	████							
N/A	(0)	0	0.00%								
0 25 50 100					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
44/49 (89.80%)	3.05	0.71	3.00	44	3.05	0.71	3.00	44	3.05	0.71	3.00

10 - At the end of this course, how do I rate my ability to:
Describe the operation of various types of motors and sensors

Response Option	Weight	Frequency	Percent	Percent Responses	Means						
Poor	(1)	1	2.22%			3.21	3.21	3.21			
Fair	(2)	6	13.33%	█							
Good	(3)	19	42.22%	██							
Excellent	(4)	17	37.78%	████							
N/A	(0)	2	4.44%	█							
0 25 50 100					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
45/49 (91.84%)	3.21	0.77	3.00	45	3.21	0.77	3.00	45	3.21	0.77	3.00