

Virginia Tech
Fall 2021 VT Student Perceptions of Teaching (SPOT)

Course: ME4524: Robotics & Automation-ME_4524_91094_202109
 Instructor: Dylan Patrick Losey *
 Response Rate: 38/44 (86.36 %)

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%		5.76	5.20	4.98						
Disagree	(2)	0	0.00%										
Somewhat disagree	(3)	1	2.63%										
Somewhat agree	(4)	0	0.00%										
Agree	(5)	6	15.79%										
Strongly agree	(6)	31	81.58%										
					0	25	50	100	Question	College	Department		
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median		
38/44 (86.36%)	5.76	0.59	6.00	22610	5.20	1.12	6.00	2355	4.98	1.30	5.00		

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%		5.54	4.98	4.69						
Disagree	(2)	0	0.00%										
Somewhat disagree	(3)	2	5.41%										
Somewhat agree	(4)	1	2.70%										
Agree	(5)	9	24.32%										
Strongly agree	(6)	25	67.57%										
					0	25	50	100	Question	College	Department		
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median		
37/44 (84.09%)	5.54	0.80	6.00	22465	4.98	1.28	5.00	2331	4.69	1.51	5.00		

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%		5.35	4.94	4.66						
Disagree	(2)	0	0.00%										
Somewhat disagree	(3)	1	2.70%										
Somewhat agree	(4)	5	13.51%										
Agree	(5)	11	29.73%										
Strongly agree	(6)	20	54.05%										
					0	25	50	100	Question	College	Department		
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median		
37/44 (84.09%)	5.35	0.82	6.00	22445	4.94	1.30	5.00	2332	4.66	1.50	5.00		

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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%		5.75	5.32	5.08						
Disagree	(2)	0	0.00%										
Somewhat disagree	(3)	1	2.78%										
Somewhat agree	(4)	0	0.00%										
Agree	(5)	6	16.67%										
Strongly agree	(6)	29	80.56%										
					0	25	50	100	Question	College	Department		
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median		
36/44 (81.82%)	5.75	0.60	6.00	22424	5.32	1.06	6.00	2326	5.08	1.29	5.00		

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%		5.58	4.97	4.69						
Disagree	(2)	0	0.00%										
Somewhat disagree	(3)	0	0.00%										
Somewhat agree	(4)	3	8.33%										
Agree	(5)	9	25.00%										
Strongly agree	(6)	24	66.67%										
					0	25	50	100	Question	College	Department		
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median		
36/44 (81.82%)	5.58	0.65	6.00	22321	4.97	1.31	5.00	2314	4.69	1.53	5.00		

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

Dylan Patrick Losey

Response Rate 25/44 (56.82%)

- He explained everything thoroughly. He made sure the class was on board before moving on.
- The most helpful technique used in lectures was the detailed breakdown of math that goes into things like forward kinematics and finding Jacobians. I'm sure that Professor Losey understands that we have been taught these mathematical techniques in prior classes, but the helpfulness of going through these derivations in a clear manner cannot be understated. Also, the "robotics asides" that were often 5-minute "breaks" in the middle of class to explain practical issues in robotics or interesting areas in the topic were well-timed and great as a "break" between regular lecture time.
- The slide decks were well-prepared and served as a great addition to the lecture. After learning Dr. Losey's teaching style, the slides could be easily followed in the event of a missed lecture. Of course, attending lectures was always enjoyable and filled with information. I never felt a reason to consult the text, as all material was taught quickly and effectively.
- I wish he had PowerPoint lecture slide available instead of pdf. It was hard to concentrate on so many pages of pdf having minor change. it would be easier to study using PowerPoint slides instead.
- I liked how you asked questions. It helped me to pay attention.
- I really liked his PowerPoint style of teaching. I felt that going step by step on all the slides really helped my understanding of the material. I also really liked how he would always check if we were understanding the material and how willing he was to backtrack and re-explain some things.
- Provided helpful examples in class which led to better understanding of the theory.
- answering doubts during office hours, and after class and in discussion forum.
- The examples in the class are explained in great detail
- Honestly, just the fact that he cared about the subject and made an active effort to engage his students. One of my favorite profs thus far (tied with Galitz, Rodger, and Alsbeck).
- Professor Losey was an amazing teacher. He was patient and knowledgeable about the subject with excellent skills at transmitting it to the students. I felt like I have obtained a lot of knowledge in this class from Professor Losey's teaching ability and his excellent PowerPoint slides. The labs also helped solidify the knowledge learned in class.
- Professor Losey was super thorough in his teaching and payed attention to his class
- I think that going through examples and showing how the theory is applied to actual problems is one of the most helpful things a professor can do. That said, Professor Losey is one of the best professors at this. He cares about the topics and it shows.
- Explaining the conceptual aspects while going through an example was really helpful.
- Professor Losey is a great professor and I wish I had more like him. He explains things clearly and in a way that is easy to understand, he is very engaging with the class, and is very responsive to the students' questions and needs. Probably the best professor I've had at this school.
- Multiple times has related why and how the topics learned in class are related to industry.
- The lectures were really good and helped a lot in my understanding.
- Dr. Losey has been one of the best professors I've had the pleasure of taking a class with. It also helps that I love the subject matter. Dr. Losey presented the material in a clear and concise manner with logically progressing slides that guided the listener from known questions to unknown answers. Additionally, right when everyone's attention would wain, he gave us a brain break with fun and engaging "robot asides" that showed us why we were learning what he was teaching. He was also very effective at welding silence by waiting for people to answer instead of giving the answer to everyone, forcing people to make conclusions. Often, this would expose some misunderstanding that people would have or restate what he just said in a more colloquial way. Overall, Dr. Losey is a very effective professor and made this class very enjoyable.
- Prof Losey is quite possibly one of the best professors to be teaching this course. He posses a lot of background experience in the subject of learning algorithms and manipulator arms that allows him to effectively convey concepts to us. I really enjoyed how he is able to bring in real world examples and relate them to the concepts we learn.
- The information is dense and hard to grasp but I think the information was presented in the best possible way. There was interspersion of real life examples and other fun items to keep the students attentive.
- Powerpoints were clear and easy to follow.
- Gave plenty of examples that made the material more clear.
- The robotics aside sections of the lectures were very much appreciated and interesting. It helped break up the long lectures.
- 1. Each slide and note made in class will be uploaded on canvas. 2. Homework set up efficiently helped me to catch up the class content.
- He kept the lectures interesting and relatable by explaining the topics very clearly. Also, going through the equations and code step by step helped build my basic understanding of the content.

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%		5.44	5.08	4.83					
Disagree	(2)	1	2.78%		Question	College	Department					
Somewhat disagree	(3)	0	0.00%		Mean	STD	Median	Department	Mean	STD	Median	
Somewhat agree	(4)	1	2.78%		36/44 (81.82%)	5.44	0.81	6.00	2077	4.83	1.32	5.00
Agree	(5)	14	38.89%		19815	5.08	1.14	5.00	2077	4.83	1.32	5.00
Strongly agree	(6)	20	55.56%									

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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%		5.40		
Disagree	(2)	1	2.86%			4.82	
Somewhat disagree	(3)	1	2.86%				4.55
Somewhat agree	(4)	3	8.57%	■			
Agree	(5)	8	22.86%	■			
Strongly agree	(6)	22	62.86%	■			

Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
35/44 (79.55%)	5.40	0.98	6.00	19707	4.82	1.37	5.00	2071	4.55	1.55	5.00

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

Response Rate 24/44 (54.55%)

- Attended more frequently
- Read the textbook more.
- If possible, attended all lectures. A scheduling conflict with our client (Senior Design) required skipping a few lectures, which I wish I could have been present for.
- Keep up with materials more effereently.
- Spent more time on the homework. I always put it off to the last minute.
- I could have paid more attention in class and read the textbook more.
- Gone to office hours, started homework further ahead of the deadlines, taken better notes in class
- Have a bit more background knowledge.
- Maybe I need to ask more questions about topics that are not clear
- Less procrastination and attended more office hours
- I felt like I was lost in the middle of the semester. There was a lot of work outside of this class and I did not have the time to finish some of the assignments. It was due to my own time management problems, but costed part of my grade.
- Taking notes was hard when the slides were so long and weirdly formatted.
- I became more fixated on different topics in the class which leads to not caring enough about particular topics. I should have spent more time with some of the topics.
- been to more office hours
- The tests are a bit harder than the homework problems so I could have studied more for them.
- Content is extremely math-heavy which is difficult for me.
- I could have attended class and office hours more when I was struggling with homework.
- Take more time to do homework, attend office hours and start homework earlier to make use of said office hours.
- Honestly ask more questions! Prof Losey posses a wealth of knowledge and will go out of his way to make sure that you understand it. Never hurts to ask more questions that you may need.
- Classes were hard to learn from so I studied on my own but I could not find any effective material to study from so that was a challenge for me.
- Attend office hours. Review power points prior to class. The course builds on itself and can be difficult to keep up with in the later part of the semester.
- Taken more notes.
- I could expand more on the Internet after class to learn about things related.
- Utilized office hours when stuck on homework questions.

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

Dylan Patrick Losey

Response Rate 22/44 (50%)

- Have a Recorded lecture, or zoom room that you could have for people to watch after the fact.
- Very professional and well-prepared. Lectures quickly but I don't think it's a problem and more of a necessary effect of having to condense such large topics into relatively small amounts of time. Will consider taking his tech elective he is offering next semester.
- Best instructor here at Tech! I thoroughly enjoyed this class and the energy that Dr. Losey brought to each lecture. I appreciated his genuine concern for teaching, not just lecturing. The emphasis on having the class understanding the material was noted, and made for a great learning environment. There's several professors in the department that could learn something from Dr. Losey.
- Please make PowerPoint files available to make it similar to your lecture presentation when reviewing. I could not play slideshow in pdf.
- Some of your slides and homework questions required us to be mind readers. For a specific example, in Hw 2, problem 3.2, I don't know if the motion is taking place in the body frame or not. It was not explicitly stated. My main suggestion for improving the course is to include subscripts on every vector, rotation, and translation matrix. You often dropped the subscripts to make the formulas 'look neater', and the textbook may do that as well, but a formula's meaning becomes ambiguous if we don't know what basis its parts are expressed in. Even when you write a general formula, the vectors and matrices should have arbitrary subscripts like {a} and {b}, so we know the relationship between its parts, e.g. which frame a rotation matrix in the formula is represented in.
- I really like the presentation style, however it's a lot of slides to scroll through when I'm trying to review. If maybe you have lecture notes, it would be helpful to post those for reference.
- Overall, I felt that his teaching style was excellent and he showed a very strong understanding of the subject matter.
- I found that the lecture slides were cumbersome to look through when reviewing lecture notes because of the use of powerpoint animations. This resulted in each slide having multiple pages in pdf form. If there had been a condensed version of the slide pdf's that would have saved me time on homework and while studying for exams.
- Dr. Losey is a very good and kind instructor. He made the material easier through his teaching.
- I think the teaching is very good
- Thanks for the course was genuinely enjoyable
- Great Professor.
- Homework was a total struggle. While the topics in class were engaging, they didn't seem to apply to the homework very well.
- Professor Losey is one of the best out there. He cares about the students, the material, and he is a down to earth person.
- Great professor at engaging class and teaching material. Post lecture slides before class that have detailed solutions and work sections for later revision.
- One thing that is a little inconvenient is the length of the slides on PowerPoint. I think it's because of the animations, the slides are extremely long and it can be hard to find things.
- Thank you! Your lecture style is accessible and interesting! Everyone looked forward to the robot asides, those were very engaging and useful to get people interested in the lecture again after ~45 minutes of concentration.
- This class is one of the most interesting classes I have taken. Prof Losey does an great job of bringing a balance between teaching new concepts and drawing parallels to real world ideas. I really like how breaks down concepts into visual ideas to help improve understanding (being a visual learner helped me get more out of this course). The content you learn in this course is very much applicable to the current field. Homework plays a big part in the course (both in your grade and in learning). My only gripe is that I wish the final answers were provided with the homework's or some sample calculations. With some of the later assignments that heavily involve matlab, it can be difficult to diagnose bugs in your code when you don't know if your intermediate steps are correct.
- I wish there were more examples similar to the homework. This caused the homework to be extremely difficult.
- Did a very good job of keeping the material interesting, in fact this was one of my favorite classes I've ever taken and I sad I am graduating before I can take the next level course.
- The slides are too long end difficult to navigate when looking back on them for homework and studying. I wish the homework was due on Sunday.
- Dr. Losey is really a wonderful instructor, he really knew how to make knowledge understandable for us. He is also a very kind person to talk with, the atmosphere in his class is relaxing and interesting, I am so glad to be in his class for the past semester.

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%		5.47	5.16	4.96				
Bad	(2)	0	0.00%								
Poor	(3)	0	0.00%								
Fair	(4)	3	8.33%								
Good	(5)	13	36.11%								
Very Good	(6)	20	55.56%								
					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
36/44 (81.82%)	5.47	0.65	6.00	19663	5.16	0.98	5.00	2068	4.96	1.17	5.00

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

Response Rate 8/44 (18.18%)

- Classes in Lavery are sometimes tough as it is a combined lecture hall and dining hall, so sometimes it is loud.
- Lavery's not bad, one of the better spaces for classrooms.
- Classroom was fine. No complaints
- If video recordings were available, it would help to revise the class in a better way.
- The classroom environment is very good, with interaction and breaks
- Not much to put, good classroom and labs were fine.
- Professor fostered an environment of mutual respect and a atmosphere of learning for all of the students.
- Nothing special.

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%			5.34	5.03	4.83	Question	College	Department	Mean	STD	Median
Disagree	(2)	1	2.86%											
Somewhat disagree	(3)	0	0.00%											
Somewhat agree	(4)	4	11.43%	■										
Agree	(5)	11	31.43%	■										
Strongly agree	(6)	19	54.29%	■										
					0	25	50	100						
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median			
35/44 (79.55%)	5.34	0.91	6.00	19758	5.03	1.10	5.00	2079	4.83	1.26	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)	0	0.00%			4.23	4.54	4.32	Question	College	Department	Mean	STD	Median
Disagree	(2)	5	14.29%	■										
Somewhat disagree	(3)	4	11.43%	■										
Somewhat agree	(4)	11	31.43%	■										
Agree	(5)	8	22.86%	■										
Strongly agree	(6)	7	20.00%	■										
					0	25	50	100						
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median			
35/44 (79.55%)	4.23	1.31	4.00	19631	4.54	1.44	5.00	2073	4.32	1.53	5.00			

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%			5.49	5.05	4.75	Question	College	Department	Mean	STD	Median
Disagree	(2)	0	0.00%											
Somewhat disagree	(3)	1	2.86%											
Somewhat agree	(4)	1	2.86%											
Agree	(5)	13	37.14%	■										
Strongly agree	(6)	20	57.14%	■										
					0	25	50	100						
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median			
35/44 (79.55%)	5.49	0.70	6.00	19709	5.05	1.16	5.00	2075	4.75	1.41	5.00			

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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%		5.43	4.97	4.73						
Disagree	(2)	2	5.71%										
Somewhat disagree	(3)	0	0.00%										
Somewhat agree	(4)	1	2.86%										
Agree	(5)	10	28.57%										
Strongly agree	(6)	22	62.86%										
					0	25	50	100	Question	College	Department		
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median		
35/44 (79.55%)	5.43	1.01	6.00	19564	4.97	1.23	5.00	2060	4.73	1.41	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%		5.68	5.20	5.00						
Disagree	(2)	0	0.00%										
Somewhat disagree	(3)	1	2.94%										
Somewhat agree	(4)	1	2.94%										
Agree	(5)	6	17.65%										
Strongly agree	(6)	26	76.47%										
					0	25	50	100	Question	College	Department		
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median		
34/44 (77.27%)	5.68	0.68	6.00	22134	5.20	1.08	6.00	2304	5.00	1.27	5.00		

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%		3.68	3.68	3.68						
Fair	(2)	2	5.88%										
Good	(3)	7	20.59%										
Excellent	(4)	25	73.53%										
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		
34/44 (77.27%)	3.68	0.59	4.00	34	3.68	0.59	4.00	34	3.68	0.59	4.00		

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)	0	0.00%		3.56	3.56	3.56						
Fair	(2)	3	8.82%										
Good	(3)	9	26.47%										
Excellent	(4)	22	64.71%										
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		
34/44 (77.27%)	3.56	0.66	4.00	34	3.56	0.66	4.00	34	3.56	0.66	4.00		

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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%			3.76	3.76	3.76			
Fair	(2)	1	2.94%								
Good	(3)	6	17.65%	█							
Excellent	(4)	27	79.41%	██████████							
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
34/44 (77.27%)	3.76	0.50	4.00	34	3.76	0.50	4.00	34	3.76	0.50	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%			3.65	3.65	3.65			
Fair	(2)	2	5.88%	█							
Good	(3)	8	23.53%	████							
Excellent	(4)	24	70.59%	██████████							
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
34/44 (77.27%)	3.65	0.60	4.00	34	3.65	0.60	4.00	34	3.65	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%			3.21	3.21	3.21			
Fair	(2)	8	23.53%	████							
Good	(3)	11	32.35%	██████							
Excellent	(4)	15	44.12%	████████							
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
34/44 (77.27%)	3.21	0.81	3.00	34	3.21	0.81	3.00	34	3.21	0.81	3.00

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)	1	2.94%			3.21	3.21	3.21			
Fair	(2)	4	11.76%	█							
Good	(3)	16	47.06%	████████							
Excellent	(4)	13	38.24%	██████							
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
34/44 (77.27%)	3.21	0.77	3.00	34	3.21	0.77	3.00	34	3.21	0.77	3.00

Virginia Tech
 Fall 2021 VT Student Perceptions of Teaching (SPOT)

Course: ME4524: Robotics & Automation-ME_4524_91094_202109
Instructor: Dylan Patrick Losey *
Response Rate: 38/44 (86.36 %)

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)	1	2.94%			3.26	3.26	3.26			
Fair	(2)	4	11.76%								
Good	(3)	14	41.18%								
Excellent	(4)	15	44.12%								
N/A	(0)	0	0.00%								
<p>0 25 50 100</p>					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
34/44 (77.27%)	3.26	0.79	3.00	34	3.26	0.79	3.00	34	3.26	0.79	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)	1	2.94%			3.18	3.18	3.18			
Fair	(2)	7	20.59%								
Good	(3)	11	32.35%								
Excellent	(4)	15	44.12%								
N/A	(0)	0	0.00%								
<p>0 25 50 100</p>					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
34/44 (77.27%)	3.18	0.87	3.00	34	3.18	0.87	3.00	34	3.18	0.87	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)	0	0.00%			3.38	3.38	3.38			
Fair	(2)	4	11.76%								
Good	(3)	13	38.24%								
Excellent	(4)	17	50.00%								
N/A	(0)	0	0.00%								
<p>0 25 50 100</p>					Question	College	Department				
Response Rate	Mean	STD	Median	College	Mean	STD	Median	Department	Mean	STD	Median
34/44 (77.27%)	3.38	0.70	3.50	34	3.38	0.70	3.50	34	3.38	0.70	3.50