

## Capstone Teaching Demonstration – Peer Feedback Form

**Instructor Name:** Ana Maria Estrada

**Observer Name:** Alyssa Pybus

**Course:** ISyE 3133 – Engineering Optimization

**Topic:** Solving Linear Programs (LPs) Graphically

**Date and time:** October 15, 2020 – 9:30 am to 10:20 am

**Class type:** In person, synchronous through Bluejeans, asynchronous recording

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### LEARNING GOALS AND ASSESSMENT

*Does the instructor provide specific, clear learning objectives? Does the instructor then teach towards these objectives? Has the instructor gathered evidence of student learning?*

Course Objective: Know what standard techniques are out there to solve them

By the end of the studio session, students will be able to:

1. Sketch LPs feasible regions
2. Identify unbounded regions
3. Solve LPs using the graphical solution method
4. Define half-space, hyperplane, polyhedron, polytope

**Formative assessment:** For the first learning goal, I am going to ask students to share with the class their sketches of the feasible region. Ideally, I would be able to use one of their sketches to provide the right answer. For the remaining learning goals, I will use polls. The first one will ask if each of the two regions is bounded. The second one would ask if the LPs have an optimal solution. The last one is going to test their knowledge on half-spaces, hyperplanes, polyhedrons, and polytopes.

**Summative assessment:** Students will have a quiz asking them to sketch LPs feasible regions and to solve the LPs using the graphical solution method.

I may have missed this, but I don't recall a learning objectives slide in the start of the presentation (I may have been distracted by looking into Pear Deck). Nonetheless, your effective use of formative assessments during the class made it obvious what your expectations were of the students and allowed you to gather real-time feedback on what their level of understanding was.

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### INSTRUCTIONAL STRATEGIES

*Do the chosen instructional strategies seem to support the learning objectives and assessment? Are there areas where slides, handouts, explanations, student interaction, etc. could be improved?*

Excellent use of technology. I liked your use of Pear Deck to share slides with the students tuning in on Bluejeans. This let us check back on the slides when you switched away from them to solve problems on the virtual whiteboard. I loved that we were able to work on problems separately and share them anonymously! I will definitely try to use this tool in my second class this semester. (Sorry I forgot to draw  $y=0$  and  $x=0$ , but feel better that it wasn't one of your actual students that messed it up!) The only drawback I can think of for Pear Deck is that it might be confusing for students to switch back and forth from Pear Deck to Bluejeans, but you mitigated this by announcing when they should switch to one or the other.

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One huge advantage of Pear Deck (that you used very effectively) was to identify misconceptions and areas where the students didn't quite understand key concepts yet. You mentioned this during the class, and I agree- you should have a third option for "I don't know," which would make it even easier to know when students aren't following along. They have a 50% chance of guessing correctly on Yes/No questions so this leaves the chance that they'll guess right and you'll think they're good to go when they're not (especially with so few synchronous bluejeans students).

I also really liked that you used different colors on the whiteboard and graphs on your slides to make it clear which equations you were plotting and mark important spaces. I also really liked your use of both typed information on slides and using the marker to write out information.

The chosen instructional strategies certainly support the learning objectives.

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### CLASSROOM CLIMATE

*Does the instructor create a positive learning environment in which all students are comfortable participating?*

You handled student questions very well. When Justin was confused about the yellow lines on slide 8, you did a great job realizing there was still confusion and explaining the solution in a different way. You then asked if your explanation was clear, which let him know that you cared about his understanding. This lets students know you care and encourages them to speak up when they don't understand.

I appreciated that you went over all the student's responses to the Pear Deck problems. It made me feel like I really was part of the class, because my responses mattered and were shown to everyone (but were anonymous so I wasn't afraid to fill it out). I think this tool is excellent for active learning and definitely encourages participation! It makes class more fun too.

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### PRESENTATION

*Do the structure, pace, transitions, visual aids, and verbal/nonverbal communication support learning?*

You had a great structure and pace throughout the presentation. Your transitions from topic to topic were also well presented.

The students were a bit confused on the polyhedron question when it came up. I think this could've been a little smoother if you had reintroduced the topic (learning objective 4) before asking the question on it, but it worked out fine anyway. Maybe your strategy was effective in its own right, since their confusion on the question motivates them to find the answer.

Were there any in-person students in class? We couldn't tell from the video. If so, it might've been better to use a webcam as your video feed if one was available. This would allow us to see you a bit better for more personal interaction. This is a small note, since I don't think it would've made a big difference.

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### Prioritized Feedback

1. What do you think was the one most effective aspect of the teaching demonstration?

You had excellent student interaction. I absolutely loved Pear Deck and you've convinced me to use it in my teaching. I enjoyed working on each problem and seeing my solution up on the screen. It allowed you to see where students needed further explanation on important concepts.

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It was a great idea to hold announcements until after the survey. This ensures the students take the time to fill it out, since they have to stick around for the extra few minutes anyway.

2. What do you think is the most important consideration for the presenter's future teaching?

I really enjoyed the interactive problems during your class and I bet the students did too. I think you should continue using Pear Deck and crafting example problems that touch on key concepts covered in your lecture.