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Dear Bahar:

This letter is a follow-up to my visit to your IEMS 315 class session on May 16, 2001. Just to summarize, I observed you presenting a 50-minute lecture on the topic of queueing processes to undergraduate students in a required IEMS course.

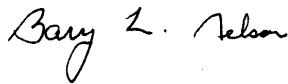
Overall I found your lecture mechanics to be very good. You started with a review of the previous class session; had nice transitions from topic to topic; made excellent use of the chalkboard by writing neatly and in an organized way; and you spoke in a clear and confident manner. Your lecture showed careful planning and was well executed. Therefore, I will focus my comments on matters of style that might aid you in improving your teaching.

1. You should endeavor to become a little less formal and a little more conversational in undergraduate classes. There are certain phrases ("Consider the following...") that strike these students as a little too stuffy. Formality tends to put distance between you and the class, and therefore to discourage discussion. Being less formal will become easier as you gain experience and confidence. This should never cross the line to trying to be just like one of the students, however. The goal is to create an atmosphere that is relaxed enough that the students feel you are approachable.
2. As you are aware, the participation by the students in your class is confined to a few students who are willing to ask questions. There are a number of things that you can do to engage the students more fully:
 - a. When you ask the class a question, be willing to wait for a response. Surprisingly, the students are more uncomfortable with an awkward silence than you are! If you wait, someone will respond, and it is particularly important to do this early in the quarter.
 - b. Get students to speculate on the solution to a problem before you proceed to solve it. Try to appeal to their intuition, and to build it. For instance, in the parking lot design problem you described in class you can ask the student to speculate about how big the garage should be given the basic data. Or you can ask them what issues should be considered in the design of a parking garage. Try to use examples like this that are familiar to get them to participate.
 - c. Use little "quiz" questions during your lecture. For instance, you could have asked them to see if they could write the balance equation for $j=2$ in their notes without your help (and you could motivate this by mentioning that it would be a good exam question).

3. In a lecture such as this one that covers a single example or topic, be sure to remind the students about the big picture (in this case, trying to design the parking lot) from time to time. As the mathematical details are presented (which is necessary) the students sometimes lose track of the overall goal.
4. You did a good job of setting up each topic in your lecture. As part of your transition to a new topic or subtopic, be sure to sum up what has just be presented or learned.
5. Because students have different interests, it can be helpful (especially in OR classes like this one) to point out that a particular model (like the $M/M/\infty$ queue you covered in the lecture) is applicable to other problems. Students who find designing a parking lot uninteresting or unimportant may be intrigued by the fact that the same model can be used to determine bandwidth for cellular telephone systems or the number of taxis needed to serve a city. Engineering students always have in mind the question "Why is this stuff useful?"
6. I suggest a somewhat less abrupt start to your class session. Students have a little trouble transitioning right into the lecture topic, so if you get their attention first by mentioning upcoming assignments, telling a story, or asking them a question they will be more engaged when you do start delivering the important material.
7. You do have a problem with student lateness, something that I believe is epidemic at NU. Telling students in the first class session that being on time is important to you can help. And it is perfectly reasonable to mention to chronically late or absent students that you notice that they are late or absent (but do this outside of class).

I think you have made a great start to being an outstanding teacher. Remember that teaching is a continuous improvement process that is never complete. If you try to get a little better each time, and retain your obvious enthusiasm, you will be one of those instructors that students remember long after they leave school. Good luck!

Sincerely,



Barry L. Nelson, Professor
Director, Master of Engineering Management Program