

• Department of Geology

15 October, 2019

Dr. Eric Edlund,  
Assistant Professor  
Physics Department  
SUNY Cortland, P.O. 2000  
Cortland, NY 13045-0900

Dear Eric:

I am happy to share this written summary of my classroom observation with you. I hope that my observations and suggestions are helpful and constructive.

I attended your *Classical Mechanics* class in room 1113 Bowers on 14 October, 2019. Of the 19 students that I counted all except two were there when you began class at 1:50 pm. You started the lecture by letting students know that gravitation was going to be covered in lecture today. Then you took attendance and subsequently collected homework assignments from your students. A few students didn't have the assignment completed, so you asked them to turn it in as soon as they could.

After this, you began talking about the definition of stiffness with specific physical parameters and equations and used the blackboard effectively. During the discussion you 1) demonstrated good command of the classroom, 2) spoke in a clear and easily heard voice, 3) had excellent eye contact with the students, and 4) called on them by their first name. I think your delivery was for the most part at the right speed but occasionally a little fast. I would suggest embedding some pauses during your instruction. This gives the students a chance to complete their notes (to their satisfaction) but more importantly, it gives them time to absorb and think about what they are learning for the first time.

During the lecture you discussed the path of a projectile in a rotating cage and all of the forces acting upon it. Your use of the blackboard and the associated equations was very effective and resonated with your students. These are complex equations with complex derivations, so I admired the times when you stopped class to ask "Are you with me, Chris? Are you with me, Joe? I found myself taking notes at critical times just to see if I could fill my notebook and understand it at the same time. For the most part I could, but there were a couple of times when I thought to myself: "I'm going to need some homework examples to reinforce my understanding," which I know students receive.

A number of students asked questions in the lecture, which demonstrated that there was active engagement going on. You answered their questions respectfully, clearly, and with care. I might suggest that you offer praise for some of the questions if warranted. For example, while you were demonstrating the *Python* script (next section), one student asked if you could play with both variables to get a different outcome. I thought this was a very insightful question from an undergraduate student, so I thought it deserved some recognition. Such praise coming from you will only foster more questions and therefore more overall student participation. The praise doesn't always have to be "That's a great question, Susan," it could be "You are thinking about it the right way, John, but you may want to consider this instead." In my own teaching, I am

always mindful to be respectful to students even if the question isn't exactly a good one or worse yet something we just covered!

Toward the end of the rotating cage model discussion, you introduced a short *Python* script that you wrote to test various scenarios with the projectile in the rotating cage. This was a very effective tool in your demonstration. As we discussed after class was over, I would encourage you to embed and make available such small computer programs to augment your homework assignments. Such programs will encourage greater interest in and foster a better understanding of the topic.

With about 10 minutes remaining in the lecture, you introduced the topic of the universal law of gravitation with Johannes Kepler's observations of planets, an excellent place to start! You went over the data collected by Kepler and mentioned that Isaac Newton was able to formulate his gravitation law using Kepler's data. Although the details of the derivation were postponed to the next lecture because of time constraints, the fact that your students will learn this most important law starting with fundamental observations and data collection is very powerful. Such an approach will help students to foster a better mental model of the universal law of gravitation.

I very much enjoyed my visit to your *Classical Mechanics* classroom. I think that the atmosphere was very conducive to student learning. From what I could see, most of the students were engaged in the discussion. My only recommendation would be to try to make an effort to call on students who are normally quiet. The best professors I've seen at Cortland purposely call on every student at least once in the class and often more than once. Consequently, those students know that when they come to class, they had better be ready to answer questions about the material. When I ask my students questions, I have to fight the urge to call on the first hand I see. Instead, I force myself to say "Who haven't we heard from yet, oh, Kristen, what you think?"

Overall, I think you are an effective instructor and your presentation style will only get more refined with time and experience. I was reminded that the Physics Department is very fortunate to have you among its faculty.

Sincerely,

A handwritten signature in black ink that reads "Robert S. Darling". The signature is written in a cursive style with a large, stylized 'D' at the end.

Robert S. Darling  
Distinguished Teaching Professor