Classroom Observation Form

Observation Completed by David Smith

Instructor: **Christopher Tralie** Date/Time: **4:40 – 5:55 PM Thursday 2/18/2016**
Location: **Link Classroom 005** No. of Students: **31**
Course Title: **Digital 3D Geometry**
Topic(s) of Day: "Procrustes Distance" and "Iterative Closest Points," which are statistical techniques to align two shapes in 3D

Evaluation Topic and Criteria: Organization and Clarity

Organization

I found your presentation well-organized and easy to follow. Your lecture had several discrete sections, which you indicated clearly at the beginning and moved through steadily. These sections were obviously related to one another, and your lecture elucidated both the relation of Procrustes Distances and ICP's within the larger aims of 3D geometry, as well as the rationale for tackling them in that order. You were organized yourself with a clear sense of the concepts you intended to communicate and a clear plan for how to work through the material. When, at one point, you decided for the sake of time to skip over a section of the presentation, you were clear-headed in your sensitivity to time and helpfully decisive in your judgment. The fact that you could refer students to the web to access the information you were skipping was helpful and further demonstrates the attention you have given to making material for a complicated subject matter available to students in an organized fashion.

I found your use of Power Point particularly helpful for helping the listener see and understand where this lecture fits in to the larger aims and process of the course. The fact that you began with some slides that addressed some of the "housekeeping" aspects of the course—homework sets, upcoming events, etc.—showed your careful concern for these important but mundane details and effectively placed them in front of students, who often need help with their own organization of these details.

I also found the pace of your lecture helpful. The material is difficult conceptually (though you clearly have some very bright students), and I thought your transition from lecturing to having students solve small problems in groups worked very effectively for encouraging their engagement with the material and simply giving them something different to do than listen to the lecture. Similarly, a little over half-way through the lecture you showed them some of your work, which was both visually and audibly stimulating and provided a bit of fun in the midst of what might seem, to the less motivated student, a fairly dry topic.

Clarity

You clearly have a mastery of the material you were presenting, and I take this to be a major reason you were able to respond to students' questions so nimbly. As you had to think on your feet to reformulate your articulation of complicated ideas, you seemed able to do so in a way that was helpful to students. The back and forth conversational style you employed to guid

students through the process of solving problems was easy to follow, even for someone who is not trained in this advanced subject. When one student was confused and stuck on a particular point relating to matrix notation, you spent a minute or so engaging his question and helping him catch up with where you were in the lecture, even though it forced you to pause the lecture in an unanticipated way. I think this was an excellent way to handle this situation. You could have just kept going proceeded and told him to review the material he may not have previously grasped, or else you could have told him to talk to you after class for an explanation. But I could tell that either of these options would have left the student lost for the remainder of the lecture. You were able to slow things down long enough to get him back on board, and that is a real "win" as a teacher. As he may not have been the only student struggling to keep up with you (perhaps he was just the most vocal), your explanation to him was likely helpful to others.

Questions

I wonder how many other students, who didn't speak up in class, were grasping the difficult material you were presenting. In my own experience, only some students are courageous enough to stop the lecturer and say "I don't understand." Perhaps you have a sense of this already from their work, but the question lingered with me, particularly as only a few students did most of the responding to your questions, while most were silent.

I was not sure about this, but it seemed like you noticed a few errors on your slides a you were working through them. If so, it seemed that you quickly corrected these errors verbally, but it may be worth making sure they are corrected on Sakai or whatever website you use, since students may not be able to remember which notations they need to correct (or may have missed class altogether).

I believe there was also some difficulty at one point with one of your slides, in which you were showing a 2D geometric shift while discussing a 3D shift. Although there is a clear connection between these ideas, if there were a way to simply show the 3D shift visually, that might help students grasp things more easily. I at least found it difficult to match the visuals on the slide with the more complicated idea you were discussing (but perhaps that doesn't mean much!).

In terms of classroom maintenance, I noticed that students (as often happens) were not all on time to class. Some students, in fact, came in after missing important announcements. Others were talking to one another as you were beginning class and took a few moments to stop. I don't know if this is typical or if you find it problematic. These matters are always something of a balance between treating students like adults and asking them to conduct themselves as such.

General Comments & Summary

Overall, this was a very fine class in which you demonstrated, to my mind, your ability to lecture energetically about a very difficult mathematical topic, respond readily and effectively to students questions, and engage students on several important levels. You know their names,

you have built the class to encourage their active learning, and you have gone to impressive lengths to create resources to help them not only master the subject matter but enjoy it. Bravo!