Teaching Reflections - CIS 201 Introduction to Computer Science

CIS 201 is a 4-credit course with 3 credits of lecture and 1 credit of lab. This is an introductory course and is a prerequisite for all other courses in computer science. The students have to get a minimum of 2.0 to move to the next class in the computer science degree program. This is a critical course for both recruiting and retaining computer science students. I have taught this course almost every semester during my time in SUNY Potsdam.

Offering this course during pandemic has posed significant challenges and a major effort to convert this course to an online one. This is because the course requires students to use a special software (Java) for their homeworks and labs and we had focused our effort in configuring the computer lab in Dunn Hall to handle this requirement. With the switch to online offering, the setup of the software on their personal laptops created several issues. Students had a variety of hardware (Chromebooks, old PCs, Macs, etc) and for many of them this was the first introduction to computers and they were unable to follow setup instructions on the Moodle page. I worked with many of them individually to solve this problem. Students with Chromebooks did not have an option to install the software and so I finally created an online version of the lab that was platform independent.

In Spring 2020, when we moved to online teaching on short notice, I offered the course as an asynchronous one. I posted recorded videos, associated quizzes, and related homeworks on a weekly basis. At the end of the semester, though the students had very positive feedback for the course, I was personally dissatisfied with the lack of direct interaction with students during the class. For Fall 2020, I moved to synchronous lectures and labs, with breakout rooms to ensure that I can provide personalized help during the lab. This revised organization of the class worked better for both me and the students.

With the aim of enhancing students' understanding of introductory programming concepts, we recently expanded our curriculum from two to three courses. Our first course, CIS 201, underwent significant updates to align with current industry needs and advancements in the field. The curriculum now includes new and relevant content, making it a more comprehensive and up-to-date introduction to the subject.

To improve student engagement and retention, I have implemented weekly pop-up quizzes in class. To better prepare students for internship interviews, where they need to program solutions on the spot, I have divided our exams into two parts: written and programming. The Fall 2022 offering of the course features updated assignments and labs that utilize real-world examples and analogies to make the abstract concepts of object-oriented programming more relatable. This approach has proven successful, as I have received positive feedback from both students and peers. The changes I have made are based on evaluations from students and faculty.

Overall, I believe that this reflection process has helped me identify areas for improvement and develop a more effective teaching approach. I am committed to continuously refining my teaching style to better support my students' learning and success