Teaching Reflections - CIS 410 Computer Networks

CIS 410 is a 3-credit senior-level required course for computer science students. I have taught this course every spring semester since 2017 at SUNY Potsdam.

Computer Networks is one of my fields of research expertise and I have redesigned the course significantly from its past offerings.   To learn Computer Networks, students need to be able to "visualize" communications between devices. This is possible by tracking "packets" through real networks or by probing packet traffic through a virtual network system. As part of this course, initially I introduced a NSF-funded virtual network lab called Global Environment for Network Innovations (GENI) for students to apply theoretical concepts learnt in class by creating their own network topology.

During my latest offering in Spring 2020, the pandemic forced the course to move online in March and that created a problem for our lab with the GENI platform. The remote connections to GENI platform were affected because they could not maintain the network on their side. To overcome this problem, I introduced wireshark, a network protocol analyzer that can be locally installed on personal computers. This change allowed us to smoothly continue with the lab associated with the course without disruption. This experience helped me recognize the importance of having alternate choices of tools for our critical labs.

I also taught my course at a slower pace in the latest offering to address a concern about the fast pace of the course in previous years. There were some comments that the course was quite packed with material and challenging. There was also a request for more examples and homework assignments related to exam questions. For Spring 2021, I'm looking at modifying the course to address these comments.