Work-in-Progress: Building an Accessible Engineering Course through Asynchronous Online Teaching

Yang Victoria Shao
University of Illinois at Urbana-Champaign
yangshao@illinois.edu

In the paper, we will discuss an asynchronous learning manage system built upon our teaching experience for undergraduate Electromagnetics. Due to the COVID-19 pandemic, the frontal in-person learning has been largely replaced by distance and online option. In this undergrade engineering course, two out of the three instructors choose the synchronous teaching sessions with the original class time; and the author offered an asynchronous session for 20% of the students.

During the semester, we designed a centralized learning manage system for the asynchronous session. One key ingredient is to create a centralized access point for students to easily access all course materials, which include the course announcements, lecture notes and handouts, topic outlines, embedded lecture recordings, and quizzes, etc. We will discuss the methods to make the lecture recordings more effective. Another effort is placed on promoting student participation to get the timely feedback and dynamically adjust the teaching materials. Since interactive teaching and classroom discussion are not possible in this semester, we utilized the online discussion form embedded in Webtool. We will look at the asynchronous session students' grades change during the three mid-terms and the final exam, compared with the other two synchronous sessions. The asynchronous session students got a mean grade of 79.27%, 73.34%, 83.11%, and 72.09% for the three mid-term exams and the final exam, while the synchronous session students got a mean grade of 75.71%, 71.91%, 83.09%, and 74.29% respectively. We will also report the students' early informal feedback about the course difficulty and teaching effectiveness as well as the course evaluation. We conclude that the instructor requires additional effects in making the asynchronous session more effective.