ECE 402 - Electronic Music Synthesis

Instructors:

This class is taught exclusively by Professor Haken, inventor of the Continuum Fingerboard. Prof. Haken is fairly laid back. He wants you to enjoy the class and appreciate computer music, and students always do. He enjoys teaching the class, presents material in a very understandable way, and often reminds students that anyone who put forth a decent amount of effort will get an A or B.

Prerequisites:

The official prerequisites for this class are MUS 103, ECE 120, and ECE 310, but they are not all necessary. If you have any musical background at all (i.e. took piano lessons when you were 7, or played trumpet for a year in 5th grade), you do not need MUS 103. What you need are the ability to read sheet music and a basic understanding of tempo, pitch, etc. You should take ECE 120 first. And you need to be reasonably familiar with DSP basics to understand lectures, which means you will either need ECE 310 or read up digital filters, transforms, and sampling related topics on your own.

When to Take It:

His course is offered every semester. It is a good tech elective to take if you are interested in audio processing.

Class Content:

This course is a great technical elective. It is extremely interesting and not an overwhelming workload. The course is mostly conceptual. There is some math, but it is not a primary part of the course. Throughout the class, you learn the history of electronic music. You learn about how the ear hears, and how you can create sounds and music using sine waves as building blocks. One thing you will not learn is how to make EDM type music.

Work:

Homework consists of reading one article a week, two to ten pages, and writing a page of answers to qualitative questions, which all in all, takes about three hours, once a week. You also spend two hours per week in the lab with a partner, working with music synthesis software. The lab won't show up on your schedule; you sign up for a time during the first week of class. There are no lab write-ups, and no time required beyond the two hours spent in lab. Labs are fun, informative, and not tough. You spend the last four weeks of class on an open ended final project. Again, it's neat, but not overwhelming.

Life After:

Students who enjoy ECE 402 will likely also enjoy ECE 403, Audio Engineering. The job market for computer music engineers is primarily in the film industry, and is not overwhelmingly expansive. Professor Haken has introduced students to internships with Lucasfilm in the past.