Should I take ECE 210 with ECE 220?

Relevancy:

Both ECE 210 and ECE 220 are usually taken as a sophomore. The two courses are not related well. ECE 210 focuses on the analog signals. In this course, you will review circuit analysis, introduce how circuit elements form signals, and how to analyze and process these signals using various methods. In ECE 220, you continue your learning of LC3 simulation from 120, spend most of your time learning C programming, and introduce C++. 210 is a mathematically rigorous course that utilizes differential equations and a respectable amount of calculus, while 220 is more conceptual and relies on more basic concepts introduced in 120.

Workload:

For ECE210, you will have weekly homework assignments, biweekly labs starting mid-semester, 3 midterms, and a final exam for one semester. The first midterm focuses on circuit analysis and differential equation representation of circuits. For the second midterm, you will deal with phasor circuits, Fourier series, and LTI systems. For the third midterm, the Fourier transform will be the most important topic. The final exam will cumulatively cover all course materials and add LTIC circuits and the Laplace transform. The lab deals with how radio signals work by constructing an AM radio signal receiver circuit.

For ECE220, you will have weekly MPs dealing with coding concepts learned during the week. You will also have CBTF quizzes which are relatively simple coding questions. The exams are on paper and are usually a mix of fill-in code, error detection, and concept questions.

Recommendation:

If you want to take these two courses concurrently, the answer is “yes”. Since these two courses are not related, you can take them together in one semester. For ECE 210, the concepts are relatively simple, but the homeworks will make you do a lot of algebra and symbol manipulation that can trip you up if you aren't careful. They also tend to be rather long. The labs are simple and a good way to see the concepts you cover in lecture in action. They're also short and biweekly, which is a nice work relief.

Compared to ECE 210, the MPs for ECE 220 is a big problem since it will take a lot of your time. The explanation for the MPs is not clear sometimes and the coding is one big time-consumer because of debugging.

The 220 MPs are usually simple, but they can take a lot of time to troubleshoot, especially if you don't have a lot of coding experience. The quizzes and midterms are usually not a problem if you understand all of the MPs, but if you don't, they can be much more challenging.

Together, the two classes can be a large time sink, so consider taking a light course load with these classes, especially if you're not confident in your mathematical or coding abilities. Any problems you have can be worked out during office hours, but if you have to go to office hours for both class every week, you run out of time rather quickly.

ONE THING TO CONSIDER: Should one still be wary of the combination of 220 and 210 together, one thing to consider would be that you don't take something much more difficult by avoiding this combination. For example, for CompE's who have the chance to save time by taking 220 and 210 together but avoid 210 for that semester to avoid the workload, a common end situation is that you take two topics such as CS 225 and ECE 210 together, which in terms of workload is MUCH more significant. Should you do something like avoiding 210 and 220 together for difficulty purposes, be very careful that what you end up in with this decision is not just a worse version, or that you replace the easier semester with something worthwhile. This is also another reason to really consider taking them together. (From Spring 2018 forward, be aware that this CS 225 + ECE 210 after ECE 220 is only possible with an A in ECE 220).