Where Do We Go From Here?
A Catalogue of Follow-up Courses to EE133

Congratulations on successfully finishing EE133. You are now all well on your way to becoming experts in RF Circuits and Communication Systems. It is our goal that EE133 be a starting point for you to begin a long and fruitful journey through this exciting field. To this end, we have compiled a list of Stanford courses you can take to fill out your knowledge base. There are essentially two paths you can take. The first has a hardware/physics emphasis, covering things such as circuits, antennas, and electromagnetics. The second has an emphasis on signals and systems, encompassing modulation and coding techniques, as well as detection and spectrum usage. There are, of course, elements of both in each class listed below. The courses you take will depend on your own personal interests. We encourage you to explore these classes and determine which are best for you.

For the most part, these descriptions are adapted from the Stanford Bulletin, with a few comments added. Some of these classes have challenging prerequisites, but don’t let that deter you. With patience and hard work, you’ll find yourself taking these classes in no time.

- **EE314: RF Circuit Design** - In EE133, we used primarily discrete components and prepackaged IC’s for our projects. This class focuses on the design of IC’s for RF applications. It covers some of the same topics as EE133, in more detail. The instructor is “big” Tom Lee, arguably one of the best lecturers in the department. This area is his passion, and where he concentrates much of his research. Professor Lee has a reputation for offering very challenging courses that inspire students. I highly recommend taking this class if you plan to work in any aspect of the communications industry. Offered Winter Quarter; Prerequisite: EE214.

- **EE279: Introduction to Communication Systems** - This course focuses on communication theory, with some discussion of system-level implementation. It covers the different types of modulation schemes (both analog and digital), and their advantages and disadvantages. It is taught by Professor Donald Cox, known widely as a pioneer in wireless communications. Offered Winter Quarter; Prerequisite: EE102, 261, and 278.

- **EE276: Introduction to Wireless Personal Communications** - Ever wanted to know how cellular phones and networks work? This is the class for you. It covers many of the issues surrounding cellular communications, such as radio propagation, performance, diversity, channel allocation, multiple access, spectrum usage, etc. Professor Cox also teaches this course. Offered Spring Quarter; Prerequisites: EE142, 278, and 279.

- **EE379A/B: Digital Communication I/II** - The fundamentals of digital communication. These courses explore issues in detection, modulation, equalization, coding, and other areas. Taught by Professor Cioffi, pioneer of Asynchronous Digital Subscriber Line technology. EE379A is offered Winter Quarter, and EE379B is offered Spring Quarter, alternate years. Prerequisites: EE103, 278.

- **EE144/245: Wireless Electromagnetic Design Laboratory** - Covers the design of antennas and transmission systems. Labs are done in two- or three-person teams, with prizes awarded for the best projects. It is a lab class, but the TBI course guide says that Professor Lesson does a good job of keeping the work manageable. Enrollment is limited to 30. Offered Spring Quarter; Prerequisites: EE122, 142.

- **EE244: Communication Engineering Transmission Systems** - Covers the design of transmission systems for TV, telephone, satellites, and other applications. Performance analysis of various modulation schemes, and introduction of current industry design problems and research results. Several students we know who took this class last Autumn highly recommend it. It is taught by Professor Lusignian. Offered Autumn Quarter; Prerequisite: Senior or graduate standing in EE.
- **EE344 - High frequency Laboratory** - Covers techniques for designing and measuring high-speed circuits (1MHz - 1GHz range). Taught by either Professor Cox or Lee. Offered Autumn (Cox) and Spring (Lee) Quarters; Prerequisites: Knowledge of Transmission Lines and Smith Charts.

This is just a sample of the courses you can take after EE133. There are several more that I haven’t listed here, mostly concentrating in Electromagnetic issues related to communications. We encourage you to look over course descriptions in the Stanford Bulletin and talk to other students to get a better feel for the classes you want to take.

It has been a pleasure to work with all of you this quarter. We hope that you enjoyed EE133, and gained an appreciation for the issues involved in designing communication systems. We wish you all luck in the future, wherever your studies or careers take you.

Sincerely,
Your EE133 Teaching Staff
Prof. Dutton, Tom, Eric