

EEL 4433C RF and Microwave Laboratory

Credits: 3 credits

Textbook, title, author, and year: RF and Microwave Wireless Systems, K. Chang, Wiley, 2002.

Reference materials:

Assorted Internet resources

Class Notes and Handouts available on Blackboard

Specific course information

Catalog description: Modern RF and microwave measurement techniques, practical laboratory design and measurement, design utilizing electromagnetic CAD software.

Prerequisites: EEL 3470: Electromagnetic Fields and Waves

Specific goals for the course:

To provide students with a firm foundation in contemporary RF and microwave laboratory techniques and design, including CAD, allowing for employment in the field or serving as a basis for further advanced study.

Brief list of topics to be covered:

1. Course introduction (1 hour)
2. Review of electromagnetic quantities and Maxwell's equations (2 hours)
3. Transmission lines and the Smith chart (4 hours)
4. Low frequency network parameters and scattering parameters (3 hours)
5. Fundamental RF devices and characteristics (4 hours)
6. Power measurement techniques (3 hours)
7. Automated test equipment and programming (2 hours)
8. RF spectrum analyzer and network analyzer (2 hours)
9. RF design utilizing CAD software (4 hours)
- Quizzes (3 hours)