

## EEL 4436 Microwave Engineering

**Credits:** 3 credits

**Textbook, title, author, and year:** Microwave Engineering, 4th ed., D. M. Pozar, Wiley, 2012.

**Reference materials:** Microwave Engineering Class-Notes, Rev. '19, J. Bagby, available on Canvas.

### Specific course information

**Catalog description:** Review of electromagnetics, transmission lines, waveguides, microwave network analysis, impedance matching and tuning, microwave resonators, microwave power dividers, couplers and filters, microwave oscillators and mixers, CAD design techniques.

**Prerequisites:** EEE 3300 (Electronics 1), EEL 3470 (Electromagnetic Fields and Waves)

**Specific goals for the course:** To provide students with a firm foundation in microwave engineering and design techniques. Design considerations include transmission lines and waveguides, network analysis, impedance matching and tuning, microwave resonators, power dividers, couplers, filters, oscillators and mixers, and use of CAD software packages.

### Brief list of topics to be covered:

#### Lecture Topics

1. Review of electromagnetic theory and transmission lines
2. Waveguides
3. Microwave network analysis
4. Impedance matching and tuning
5. Microwave resonators
6. Microwave power dividers, couplers, filters, oscillators and mixers
7. Tests and reviews