

RF & MICROWAVE CIRCUITS

ECE 373 – Winter 2021

COURSE DESCRIPTION

The course focuses on the fundamental methods for the analysis and design of microwave/RF passive and active circuits. The essentials of computer-aided design of microwave/RF circuits as well as major aspects of hardware implementations will be covered. Important RF applications for wireless communication systems will also be discussed. The course will include:

- Transmission line theories and generalized matrix representation of RF circuits
- Analysis of multiport RF networks.
- Introduction to modern microwave planar technologies.
- Lumped and distributed microstrip circuits.
- Analysis of microstrip circuits.
- Microstrip couplers, hybrids and impedance matching networks.
- Microwave resonators and filters
- Design of RF low noise amplifiers (LNA's),
- Design of RF oscillators and mixers.
- Use of existing commercial CAD design tools for RF circuits.

- Hybrid and monolithic RF circuits.