THE OHIO STATE UNIVERSITY

COLLEGE OF ENGINEERING

Advanced Antenna Theory and Design

ECE 7813

Credit Hours:
3.00 - 3.00

Course Levels:
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Topics in Advanced Antenna Theory and Design.

Prerequisites and Co-requisites:
Prereq: 5011 or 613, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.

Course Goals / Objectives:
- Analysis and design parameters pertaining to aperture, horns, lens and reflector antennas
- Analysis and design parameters pertaining to printed antennas and arrays on various substrates.
- Analyis and design parameters pertaining to waveguide slot arrays
- Analyze near field antenna measurement techniques (including compact ranges), and antenna diagnostics.
- Mutual coupling among antennas and arrays; antennas on platforms (such as ground vehicles and aircraft) and their coupling interactions
- Smart antennas, beam steering, nulling and direction finding.
- Antennas for wireless communications and related applications

Course Topics:
- Analysis and design parameters pertaining to aperture, horns, lens and reflector antennas
- Analysis and design parameters pertaining to printed patch antennas and arrays on various substrates; frequency selective surfaces; beam steering and scan blindness
- Analysis and design parameters pertaining to waveguide slot arrays
- Analysis of near field antenna measurement techniques (including compact ranges), and antenna diagnostics
- Mutual coupling among antennas; antennas on platforms (such as ground vehicles and aircraft) and their coupling interactions
- Smart antennas, beam steering, nulling and direction finding
- Antennas for wireless communications and related applications; millimeter wave antennas and related materials
- Numerical solution techniques for antennas and arrays

Designation:
Elective