

ECE 3341: Electromagnetic Theory I

Credit / Contact hours: 3 / 3

Course coordinator: Mohammad Saed

Textbook(s) and/or other required material: Inan & Inan, *Engineering Electromagnetics*, Addison-Wesley, 1999

Catalog description: Vector analysis. Partial differential equations. General treatment of transmission lines and static electric and magnetic fields from the vector viewpoint.

Pre-requisite(s) or co-requisites: ECE 3303 and PHYS 2401

Designation: Required

Course learning outcomes: Upon completion of this course, students should be able to do the following:

1. Solve transmission line problems.
2. Use vector analysis to solve static electric field problems.
3. Use vector analysis to solve static magnetic field problems.

ABET Student Outcomes addressed: a, e, and k.

Topics covered:

Transmission lines - 12 hours
Vectors and fields - 4 hours
Electrostatics - 10 hours
Magnetostatics - 10 hours
Maxwell's equations - 2 hours
Reviews and tests - 4 hours