

1.	Title of the course	Advanced Engineering Electromagnetics
2.	Course number	EE528L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To EE5053/16
6.	To be offered by	Department of Electrical Engineering
7.	To take effect from	January 2022
8.	Prerequisite	CoT
9.	<b>Course Objective(s):</b> To introduce the analytical techniques used in solving electromagnetic field theory problems.	
10.	<b>Course Content:</b> Electromagnetic waves: Maxwell's equations and boundary conditions, wave propagation in perfect and lossy dielectrics, reflection of waves on a material boundary; Fundamental theorems and concepts; Plane wave functions: TE, TM, and hybrid modes in rectangular waveguides, rectangular cavity, modal expansion of fields in a waveguide, apertures in conducting screens; Cylindrical wave functions: circular waveguides, radial waveguides, cylindrical cavities, sources of cylindrical waves; Spherical wave functions: elementary wave functions in spherical coordinates, spherical resonator; Wave propagation in anisotropic media: plane wave propagation in anisotropic and uniaxial crystals.	
11.	<b>Textbook(s):</b> 1. Balanis C A, <i>Advanced Engineering electromagnetics</i> , 2nd Edition, John Wiley & Sons (2008).	
12.	<b>Reference(s):</b> 1. Harrington R F, <i>Time-harmonic Electromagnetic Fields</i> , 1st Edition, Wiley-IEEE Press (2001). 2. Ramo S, Whinnery J R and Van Duzer T, <i>Fields and Waves in Communication Electronics</i> , 2nd Edition, John Wiley & Sons (1994).	