

1.	Title of the course	Engineering Electromagnetics
2.	Course number	EE203L
3.	Structure of credits	3-1-0-4
4.	Offered to	UG
5.	New course/modification to	Modification To EE2208/16
6.	To be offered by	Department of Electrical Engineering
7.	To take effect from	January 2022
8.	Prerequisite	Nil
9.	Course Objective(s): To provide an exposure to the advanced concepts of electromagnetic field theory and its applications to engineering	
10.	Course Content: Overview of static electric and magnetic fields, Maxwell's equations, boundary conditions; Plane electromagnetic waves, propagation in free space and in matter, reflection and refraction of waves at conducting and dielectric boundary; Transmission lines: TEM waves, transmission line equations, wave propagation along finite transmission lines, transients on lines, characteristic impedance, impedance matching, impedance transformation, quarter-wave transformers, single-stub matching, Smith chart, S-parameters; Waveguides, waves in guided media, parallel plate waveguide, rectangular waveguide, light propagation in optical fibres, cavity resonators; Basic theory of antennas and radiation characteristics, elementary types of antennas (dipole and monopole antennas), linear antenna arrays.	
11.	Textbook(s): 1. Sadiku M N and Kulkarni S V, <i>Elements of Electromagnetics</i> , 5th Edition, Oxford (2015). 2. Ulaby F T, <i>Fundamentals of Applied Electromagnetics</i> , 5th Edition, Prentice-Hall (2014).	
12.	Reference(s): 1. Cheng D K, <i>Field and Wave Electromagnetics</i> , 2nd Edition, Pearson (2014). 2. Hayt W H, Buck J A and Akhtar M J, <i>Engineering Electromagnetics</i> , 5th Edition, McGraw Hill (2018). 3. Rao N N, <i>Elements of Engineering Electromagnetics</i> , 5th Edition, Pearson (2006).	