

1.	Title of the course	Engineering Electromagnetics
2.	Course number	EE2208
3.	Status of the course	Core
4.	Structure of credits	3-1-0-4
5.	Offered to	UG
6.	New course/modification to	Modification To EE2208
7.	To be offered by	Department of Electrical Engineering
8.	To take effect from	January 2021
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective(s): To provide an exposure to the advanced concepts of electromagnetic field theory and its applications to engineering	
12.	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.	
13.	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).	
14.	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).	