1.	Title of the course	Antenna Theory and Design
2.	Course number	EE548L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To EE5054/17
6.	To be offered by	Department of Electrical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	CoT
9.	**Course Objective(s):** To present an overall view of the foundations and concepts of antennas and their design aspects for modern communication systems.	
10.	**Course Content:** Radiation pattern, near- and far-field regions, reciprocity, directivity and gain, effective aperture, polarization, input impedance, efficiency, Friis transmission equation, radiation integrals and auxiliary potential functions; Infinitesimal dipole, finite-length dipole, linear elements near conductors, dipoles for mobile communication, small circular loop; Huygens principle, radiation from rectangular and circular apertures, design considerations, Babinets principle, Fourier transform method in aperture antenna theory; Radiation from sectoral and pyramidal horns, design concepts, prime-focus parabolic reflector and cassegrain antennas; Basic characteristics, feeding methods, methods of analysis, design of rectangular and circular patch antennas; Analysis and synthesis of antenna arrays.	
11.	**Textbook(s):** 1. Balanis C A, *Antenna Theory: Analysis and Design*, 4th Edition, John Wiley & Sons (2015).	
12.	**Reference(s):** 1. Garg R, Bhartia P,Bahl I and Ittipiboon A, *Microstrip Antenna Design Handbook*, 2nd Edition, Artech House (2001). 2. Stutzman W L and Thiele H A, *Antenna Theory and Design*, 2nd Edition, John Wiley & Sons (1998).	