



ANTENNAS

PROF. GIRISH KUMAR

Department of Electrical Engineering
IIT Bombay

TYPE OF COURSE : Rerun | Elective | UG/PG

COURSE DURATION : 12 weeks (24 Jan' 22 - 15 Apr' 22)

EXAM DATE : 23 Apr 2022

PRE-REQUISITES : Basic knowledge of Electromagnetic Waves.

INTENDED AUDIENCE : All undergraduate and postgraduate students, PhD scholars, teachers, industry

INDUSTRIES APPLICABLE TO : Telecom industry, defense industry and space organization

COURSE OUTLINE :

This course will cover the fundamentals of Antenna, Dipole Antennas, Monopole Antennas, Loop Antennas, Slot Antennas, Linear and Planar Arrays, Microstrip Antennas (MSA), MSA Arrays, Helical Antennas, Horn Antennas, Yagi-Uda & Log-Periodic Antennas, Reflector Antennas.

ABOUT INSTRUCTOR :

Prof. Girish Kumar received Ph.D. degree in Electrical Engineering from Indian Institute of Technology (IIT) Kanpur, India, in 1983. From 1983 to 1985, he was a Research Associate with the Electrical Engineering Department, University of Manitoba, Winnipeg, Canada. From 1985 to 1991, he was an Assistant Professor with the Electrical Engineering Department, University of North Dakota, Grand Forks, ND, USA. Since 1991, he is with IIT Bombay, India, where he is currently a Professor in the Electrical Engineering Department. He has authored more than 300 papers in the international and national journals and conference proceedings. He is an author of three books and filed seven patents. His research interests include microstrip antennas and arrays, broadband antennas, microwave integrated circuits and systems.

COURSE PLAN :

Week 1 : Antenna Introduction I - III , Antenna Fundamentals I - II

Week 2 : Antenna Radiation Hazards I - II , Dipole Antennas I - III

Week 3 : Monopole Antennas I - II , Loop Antennas , Slot Antennas

Week 4 : Linear Arrays I - III , Planar Arrays

Week 5 : Microstrip Antennas(MSA), Rectangular MSA, MSA Parametric Analysis I - II, Circular MSA

Week 6 : Broadband MSA I - V

Week 7 : Compact MSA I - III , Tunable MSA I - II

Week 8 : Circularly Polarized MSA I - III, MSA Arrays I - III

Week 9 : Helical Antennas I - V

Week 10 : Horn Antennas I - V

Week 11 : Yagi-Uda and Log-Periodic Antennas I - III, IE3D Session TA- I - III

Week 12 : Reflector Antennas I - IV, Lab Session