

Electromagnetic Wave and Electromagnetic Theory

Sl. No.	Topics	Lectures	Tutorials
1	Idea of Electromagnetic Wave	1	
2	Huygen's Principle and its Applications	1	2
3	Laws of Electricity & Magnetism in Differential Form	1	
4	Generalisation of Ampere's Circuital Law & Displacement Current	1	
5	Maxwell's Field Equations	1	
6	Poynting Theorem, Poynting Vector and Energy Density of EM Field	1	1
7	Wave Equations of Electromagnetic Field and Their Solutions	1	
8	Transverse Nature of Electromagnetic Wave	1	
9	Intensity of Electromagnetic Waves from Poynting Vector	1	1
10	Electromagnetic Field in Materials – Permittivity & Permeability	1	
11	Maxwell's Equations in Dielectric and Non-Ferromagnetic Medium	1	
12	Electromagnetic Waves in Linear Dielectric and Magnetic Medium	1	1
13	Boundary Conditions of EM field at Material Interface	1	
14	Reflection and Refraction of EM Waves at the Dielectric Interface	1	
15	Polarisation of EM Waves by Reflection at Dielectric Boundaries	1	1
16	EM Field within Conductors – Good and Poor Conductors	1	
17	EM Waves in Conductors: Skin Effect and Skin Depth	1	
18	EM Waves in Conductors: Reflection at Surface	1	1
19	EM Waves in Dispersive Medium: Effective Permittivity	1	
20	Dispersion: Normal and Anomalous – Cauchy Equation	1	1
21	Scattering of Radiation by Bound Charge	1	
Total		21	7