Lecture Plan

Course Title: Electromagnetic wave Theory **Course Code: PCC-ECE-503**

S.No	Topic	Date	No. of Lectures Required
	Unit I		
01	Review of vector analysis, Scalar & vector products Cylindrical co-ordinate system	18-23August 2020	12
	Spherical co-ordinate system Transformation amongst rectangular, cylindrical and spherical co-ordinate system.	24-28August 2020	
	Gradient, divergence and curl of a vector.	28-2 Sepetember2020	
	Unit II		
02	Coulomb's law, application of coulombs law, electric field intensity from point charges, field due to continuous distribution of charges	3Sept -10Sept2020	08
	Gauss's law, application of gauss's law, Electric displacement and displacement density potential function	11 Sept-18Sept2020	
	Potential field of a point charge, Laplace's and Poison's equations, Divergence Theorem.	19Sept-25Sept2020	
	Unit III		
03	Magnetic field intensity and magneto motive force, Ampere's Circuital law, applications of ampere's circuital law, Biot-savart law and its application	25Sept-30Sept2020	08
	Vector potential, magnetic dipole. Ampere's work law in differential vector form, continuity of currents	30Sept-5OctSept2020	
	Conduction and displacement current, Strokes Theorem	6Sept-10Oct2020	
	Unit IV		
04	Faradays law, Maxwell's equations (Differential, Integral and Phasor forms). Uniform plane waves	10Oct-12Oct2020	08
	Representation of wave motion in free space, perfect dielectrics and Lossy dielectrics (Wave equations). Pointing Theorem and Power density	13Oct-15Oct2020	
	Propagation in good conductor and Skin effect. Reflection of Uniform plane waves.	16Oct-20Oct2020	
	Unit V		

05	Introduction, Circuit representation of parallel plane transmission lines, Transmission lines with losses, Characteristic impedance, Characteristic impedance at radio frequencies Propagation constant, Attenuation constant and phase constant	20Oct-24Oct2020	09
	Waves between parallel plane, Transverse Electric wave, Transverse magnetic waves; characteristics of TE & TM waves; velocity of propagation; Attenuation in parallel plane guides; Wave impedance.	25Oct-27Oct2020	

Teacher–In-Charge:

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