

B.Sc (H) Electronics 5th Semester
Subject: ELHT-504: Wave Propagation and Antenna

<i>No. of Lecture</i>	<i>Date</i>	<i>Content</i>
3	26.07.2016-30.07.2016	<ul style="list-style-type: none"> ➤ Unit 1: Introduction to transmission lines ➤ Typical transmission lines-Co-axial, Two wire, Microstrip, Coplanar and slot lines ➤ Description of transmission line propagation
5	01.07.2016-06.07.2016	<ul style="list-style-type: none"> ➤ Propagation of sinusoidal voltages ➤ Complex analysis of sinusoidal waves and phasor ➤ Transmission line parameters ➤ Transmission line equations
5	08.08.2016-13.08.2016	<ul style="list-style-type: none"> ➤ Characteristic impedance ➤ Lossless line ➤ Distortionless line ➤ Numericals based on transmission line equation ➤ Input impedance
3	15.08.2016-20.08.2016	<ul style="list-style-type: none"> ➤ Voltage reflection coefficient ➤ Current reflection coefficient ➤ Standing wave ratio (SWR) ➤ Power in transmission line ➤ Shorted line ➤ Open circuited line ➤ Matched line
4	22.08.2016-27.08.2016	<ul style="list-style-type: none"> ➤ Numericals based on input impedance, SWR and power ➤ Distributed line parameters at high frequencies for co-axial, two wire and planar lines
5	29.08.2016-03.09.2016	<ul style="list-style-type: none"> ➤ Transmission line applications ➤ Unit 2: Introduction to electromagnetic wave propagation ➤ Maxwell's equations ➤ Time Harmonic Fields
5	05.09.2016-10.09.2016	<ul style="list-style-type: none"> ➤ Waves in general ➤ Uniform plane wave ➤ Wave propagation in free space ➤ Wave propagation in dielectrics ➤ Test 1: Syllabus-Unit 1 (05.09.2016)
3	12.09.2016-17.09.2016	<ul style="list-style-type: none"> ➤ Poynting's theorem ➤ Power ➤ Propagation in good conductors ➤ Skin effect

5	19.09.2016-24.09.2016	<ul style="list-style-type: none"> ➤ Dispersion ➤ Phase and group velocity ➤ Numericals based on electromagnetic wave propagation ➤ Pulse broadening in dispersive and lossy media ➤ Unit 3: Reflection of uniform plane waves at normal incidence
5	26.09.2016-01.10.2016	<ul style="list-style-type: none"> ➤ Plane wave reflection at oblique incidence ➤ Parallel and perpendicular polarizations ➤ Numericals ➤ Introduction to waveguides ➤ Basic waveguide operation ➤ Test 2: Syllabus-Unit 2 (1.10.2016)
2	03.10.2016-08.10.2016	<ul style="list-style-type: none"> ➤ Plane wave analysis of the parallel-plate waveguide ➤ TE and TM modes ➤ Numericals ➤ Rectangular waveguides ➤ TE and TM modes
	10.10.2016-15.10.2016	Semester Break
5	17.10.2016-22.10.2016	<ul style="list-style-type: none"> ➤ Waveguide resonators ➤ Dielectric waveguides ➤ Unit 4: Introduction to antennas ➤ Basic antenna principles ➤ Wire and aperture antennas ➤ The retarded potential
5	24.10.2016-29.10.2016	<ul style="list-style-type: none"> ➤ Hertzian dipole ➤ Power radiated ➤ Radiation resistance ➤ Antenna characteristics ➤ Antenna patterns ➤ Radiation intensity ➤ Directive gain ➤ Power gain
5	31.10.2016-5.11.2016	<ul style="list-style-type: none"> ➤ Effective area and Friis equation ➤ The Radar equation ➤ Numericals ➤ Half wave dipole antenna ➤ Quarter wave antenna ➤ Test 3: Syllabus-Unit 3 (05.11.2016)
3	07.09.2016-10.11.2016	<ul style="list-style-type: none"> ➤ Small loop antenna ➤ Aperture antenna

		➤ Antenna arrays
--	--	------------------