

Lesson Plan

Name of Faculty : Priyanka Handa, Assistant Professor
Discipline : ECE
Semester : 8th
Subject : Satellite communication(ECE-430-L)

Lesson Plan Duration : 15 weeks
 Work Load (Lecture/Practical) per week (in hours): **Lectures 04hours**

Week	Theory		
	Lecture Day	Topic (Including Assignment/Test)	
Unit-I : introduction to satellite communication			Actual date
1 st	1	Introduction to satellite communication	
	2	Principles and architecture of satellite communication	
	3	Brief history of Satellite systems	
	4	advantages of satellite communication	
2 nd	5	disadvantages of satellite communication	
	6	Applications	
	7	Frequency bands used for satellite communication	
	8	The earth segment: introduction	
3 rd	9	Receive only home TV system	
	10	Outdoor units	
	11	Indoor units for analog	
	12	Master antenna TV system	
4 th	13	Community antenna TV system	
	14	Transmit-Receive earth station	
	15	Problem and solution	
UNIT-II SPACE SEGMENT:			
4 th	16	Introduction, Power supply, Attitude control	
5 th	17	Station keeping, Thermal control, TT&C subsystem	
	18	Transponders, Antenna subsystem	
	19	The space link: introduction, equivalent isotropic, Radiated power, transmission losses,	
	20	The link power budget equation, system noise	
6 th	21	Carrier to noise ratio, uplink budget calculation	
	22	downlink budget calculation, effect of rain	
	23	Combined uplink and downlink C\N ratio	
	24	Intermodulation noise, inter-satellite links	
7 th	1 ST Minor Test		
UNIT-III: ORBITs & LAUNCHING METHODS			

8 th	25	Introduction, kepler's law	
	26	Definition of terms for earth-orbiting satellites	
	27	Orbital elements,	
	28	Apogee and perigee heights	
9 th	29	Orbit perturbations	
	30	Inclined orbit	
	31	The geostationary orbit: introduction	
	32	Antenna look angle	
10 th	33	The polar mount antenna	
	34	Limits of visibility	
	35	Near geostationary orbits	
	36	Earth eclipse of satellite	
11 th	37	Sun transit outage	
	38	Launching orbit	
	39	Problem and solution	
	40	Problem and solution	
UNIT-IV SATELLITE ACCESS			
12 th	41	introduction, pre-assigned FDMA	
	42	Demand assigned FDMA	
	43	Spade system, TWT amplifier operation	
	44	FDMA downlink analysis	
13 th	45	TDMA, TDMA frame structure, and reference burst structure	
	46	Frame efficiency, channel capacity	
	47	Pre assigned TDMA, Demand assigned TDMA	
	48	Comparison of uplink power requirements for FDMA & TDMA	
14 th	2nd Minor Test		
15 th	49	On board signal processing for FDMA\TDM operation	
	50	Satellite switched TDMA,	
	51	CDMA	
	52	Problem and solution	

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Name of Faculty : Priyanka Handa, Assistant Professor
Discipline : ECE
Semester : 8th
Subject : TV and Radio engg.(ECE-410-L)

Lesson Plan Duration : 15 weeks
 Work Load (Lecture/Practical) per week (in hours): **Lectures 04hours**

Week	Theory		
	Lecture Day	Topic (Including Assignment/Test)	
Unit-I : introduction to TV cameras and picture tubes:			Actual date
1 st	1	Introduction to TV system	
	2	block diagram of TV transmitter	
	3	Principles of monochrome TV system	
	4	Principles of color TV system(PAL, SECAM, NTSC)	
2 nd	5	Principles of color TV system(PAL, SECAM, NTSC)	
	6	Principles of color TV system(PAL, SECAM, NTSC)	
	7	TV cameras: image orthicon	
	8	plumbicon	
3 rd	9	vidicon	
	10	CCD camera tubes	
	11	Types of analog monochrome	
	12	Types of analog monochrome	
4 th	13	Color picture tubes	
	14	Problems and solution	
	15	Problem and solution	
UNIT-II TV signal transmission and propagation:			
4 th	16	Processing and transmission of TV signals	
5 th	17	Modulation of video and sound signals	
	18	Vestigial side band transmission,	
	19	Compatibility of color and monochrome frequency interleaving	
	20	Transmission of color signals, picture, sound and color sub carrier	
6 th	21	Encoding picture information	
	22	Generation of color, color difference	
	23	Chrominance signal modulation	
	24	TV transmission and reception antenna	
7 th	1ST Minor Test		
UNIT-III: monochrome TV receiver and vision IF subsystem			
8 th	25	Basic ckt of TV receiver	

	26	Functional block diagram of TV receiver	
	27	R.F. tuner, I.F. amplifier	
	28	Video detector	
9 th	29	Video amplifier	
	30	AGC, sync. separation	
	31	Sync processing and AFC	
	32	Deflection oscillator	
10 th	33	Vertical and horizontal oscillation	
	34	Sound system ckt	
	35	EHT generation	
	36	Common faults and their diagnosis	
11 th	37	Basic idea of HDTV, DBS-TV and 3D-TV	
	38	Digital transmission and reception of TV signals	
	39	Dish tv, DTH, cable TV	
	40	Transmission of TV signals through satellite and transponders	
12 th	41	Working principle of HDTV, DBS-TV	
	42	Working principle of IPTV AND 3D-TV	
	43	modern TV receiver with LCD, LED and plasma displays	
	44	Problems and solution	
UNIT-IV introduction to radio engg.			
13 th	45	Various types of modulation methods	
	46	Various types of modulation methods	
	47	Transmitter power supply	
	48	Principles of antennas	
14 th	2nd Minor Test		
15 th	49	Modern communication system with propagation	
	50	oscillators	
	51	Problem and solution	
	52	Problem and solution	

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