

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

LESSON PLAN

Subject Name: - Satellite Communication

Year: - 4th

Subject Code: - ECE-423N

Semester: - 7th

Lecture No	Unit No	Topic	References
L1	Unit-1	Introduction to the subject SC: About satellites, orbits.	Satellite Communication,"Timothy Pratt", 2 nd edition.
L2	Unit-1	Elements of satellite communication	Satellite Communication,"Timothy Pratt", 2 nd edition.
L3	Unit-1	Orbital mechanics, kepler's law	Satellite Communication,"Timothy Pratt", 2 nd edition.
L4	Unit-1	Location of satellite in the orbit w.r.t earth	Satellite Communication,"Timothy Pratt", 2 nd edition.
L5	Unit-1	Orbital elements, look angle determination	Satellite Communication,"Timothy Pratt", 2 nd edition.
L6	Unit-1	Sub satellite point, azimuth angle calculation, numericals	Satellite Communication, "Anil k Maini", 3 rd edition
L7	Unit-1	Elevation angle calculation, longitudinal changes, numericals	Satellite Communication, "Anil k Maini", 3 rd edition
L8	Unit-1	Inclination changes, launch vehicles: ELV's	Satellite Communication, "Anil k Maini", 3 rd edition
L9	Unit-1	Placing the satellite in the geostationary orbit	Satellite Communication, "Anil k

			Maini", 3 rd edition
L10	Unit-1	Doppler shift, range variations	Satellite Communication,"Timothy Pratt", 2 nd edition.
L11	Unit-1	Solar eclipse, sun transit outage	Satellite Communication,"Timothy Pratt", 2 nd edition.
L12	Unit-2	Satellite subsystem, Attitude & orbit control system(AOCS)	Satellite Communication,"Timothy Pratt", 2 nd edition.
L13	Unit-2	Telemetry, Tracking, Command & Monitoring(TTC&M)	Satellite Communication,"Timothy Pratt", 2 nd edition.
L14	Unit-2	Telemetry, Tracking, Command & Monitoring(TTC&M)	Satellite Communication,"Timothy Pratt", 2 nd edition.
L15	Unit-2	Power system	Satellite Communication, "Anil k Maini", 3 rd edition
L16	Unit-2	Communication subsystem	Satellite Communication, "Anil k Maini", 3 rd edition
L17	Unit-2	Transponders	Satellite Communication,"Timothy Pratt", 2 nd edition.
L18	Unit-2	Satellite antennas	Satellite Communication,"Timothy Pratt", 2 nd edition.
L19	Unit-2	Basic antenna in practice	Satellite Communication,"Timothy Pratt", 2 nd edition.
L20	Unit-2	Antenna types	Satellite Communication, "Anil k Maini", 3 rd edition
L21	Unit-2	Numericals	Satellite Communication, "Anil k Maini", 3 rd edition
L22	Unit-3	Satellite link design	Satellite Communication,"Timothy Pratt", 2 nd edition.

L23	Unit-3	Sessional Revision	Satellite Communication,"Timothy Pratt", 2 nd edition.
L24	Unit-3	Basic transmission theory	Satellite Communication,"Timothy Pratt", 2 nd edition.
L25	Unit-3	System noise temperature	Satellite Communication,"Timothy Pratt", 2 nd edition.
L26	Unit-3	G/T ratio	Satellite Communication, "Anil k Maini", 3 rd edition
L27	Unit-3	Downlink design link budget	Satellite Communication, "Anil k Maini", 3 rd edition
L28	Unit-3	Uplink desgn link budget	Satellite Communication,"Timothy Pratt", 2 nd edition.
L29	Unit-3	Design for specified C/N ratio	Satellite Communication,"Timothy Pratt", 2 nd edition.
L30	Unit-3	Uplink and downlink attenuation in rain	Satellite Communication,"Timothy Pratt", 2 nd edition.
L31	Unit-3	Communication link desgn procedure	Satellite Communication,"Timothy Pratt", 2 nd edition.
L32	Unit-3	System design examples	Satellite Communication, "Anil k Maini", 3 rd edition
L33	Unit-3	Numericals	Satellite Communication,"Timothy Pratt", 2 nd edition.
L34	Unit-4	Unit 4: Multiiple access schemes: FDMA	Satellite Communication, "Anil k Maini", 3 rd edition
L35	Unit-4	TDMA, CDMA	Satellite Communication, "Anil k Maini", 3 rd edition
L36	Unit-4	CDMA, DAMA	Satellite Communication,"Timothy Pratt", 2 nd edition.
L37	Unit-4	VSAT Systems-basic techniques	Satellite Communication,"Timothy Pratt", 2 nd edition.

L38	Unit-4	VSAT earth station engineering	Satellite Communication,"Timothy Pratt", 2 nd edition.
L39	Unit-4	DBS system- C band, Ku band home TV	Satellite Communication, "Anil k Maini", 3 rd edition
L40	Unit-4	Digital DBS	Satellite Communication, "Anil k Maini", 3 rd edition
L41	Unit-4	Satellite mobile systems	Satellite Communication, "Anil k Maini", 3 rd edition
L42	Unit-4	GPS	Satellite Communication, "Anil k Maini", 3 rd edition

Text Books:

1. Timothy Pratt,"Satellite Communication", Wiley Edition 2006.

Reference Books:

1. A.K. Maini, Satellite Communication. Wiley India