

Semester: 4 th		Subject: Surveying-II (PC/CE/44-T)	
Week	Lecture Day	Topics	Remarks
1 st	1	Survey Adjustment and Treatment of Observations: Types of errors, definition of weight of an observation, most probable values	
	2	law of accidental errors, law of weights,	
	3	determination of probable error (different cases with examples), principle of least squares,	
	4	Adjustment of triangulation figures by method of least squares.	
2 nd	5	Adjustment of triangulation figures by method of least squares	
	6	Numerical problems	
	7	Astronomy: Definitions of astronomical terms	
	8	star at elongation, star at prime vertical star at horizon, star at culmination	
3 rd	9	Astronomical triangle and its properties	
	10	celestial coordinate systems, ,	
	11	Napier's rule of circular parts	
	12	Numerical problems	
4 th	13	various time systems: sidereal, apparent, solar and mean solar time	
	14	various time systems: sidereal, apparent, solar and mean solar time	
	15	Equation of time-its cause.	
	16	Equation of time-its cause.	
5 th	17	Numerical problems	
	18	Introduction GIS, GPS, DEM, DTED	
	19	Large scale mapping, small scale mapping,	
	20	Components of GIS	
6 th	21	Application of GIS in civil engineering	
	22	Remote Sensing, Fundamentals, EMS, RS System	
	23	Active and Passive radiation – Electromagnetic Radiation – Nomenclature	
	24	Reflectance, Transmission and Absorption	
7 th	25	MINOR TEST I	
	26		
	27		
	28		
8 th	29	Reflectance, Transmission and Absorption	
	30	Thermal Emission – Plank's formula,	
	31	Stefan – Boltzman Law;	
	32	Wein's Displacement Law	
9 th	33	Emissivity – Kirchoff's Law	
	34	Characteristics of Solar Radiant Energy	
	35	Application of remote sensing to various engineering fields	
	36	Interaction of EMR with Atmosphere – Scattering	
10 th	37	Interaction of EMR with Atmosphere –Refraction,	
	38	Interaction of EMR with Atmosphere – Absorption,	
	39	Interaction of EMR with Atmosphere – Transmission and Atmospheric Windows	
	40	Interaction of EMR with Earth Surface – Spectral Reflectance Curves	
11 th	41	Interaction of earth surface with EM radiation in visible, NIR, TIR and Microwave regions	
	42	Idealized & Real sequence of remote sensing	
	43	Introduction to Photogrammetry: Definition, History, Principles, and Applications	
	44	Types of Photographs: Aerial, Terrestrial and their Characteristics	
12 th	45	Aerial Photographs: Types (Vertical, Oblique, Low-Oblique, High-Oblique), Geometry, and Flight Planning Basics	
	46	Aerial Camera: Components, Lens Types, Focal Length, Image Formation, and Calibration	
	47	Height Displacements in Vertical Photographs: Relief Displacement, Causes, and Effects	
	48	Numerical problems	
13 th	49	Stereoscopic Vision: Human Binocular Vision	
	50	Principles of Stereoscopy, and Stereoscopic Instruments	
	51	Height Determination from Parallax Measurement: Parallax, Parallax Bar, and Measurement Techniques	
	52	Height Determination from Parallax Measurement: Parallax, Parallax Bar, and Measurement Techniques	
14 th	53	MINOR TEST II	
	54		
	55		
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15 th	57	Flight Planning: Factors Affecting Flight Planning, Planning Considerations, and Flight Line Design	
	58	Flight Planning Considerations, and Flight Line Design	
	59	Numerical Problems	
	60	Applications of Photogrammetry: Mapping, Surveying, Engineering, Archaeology, and Remote Sensing	