

UTKAL INSTITUTE OF NGINEERING & TECHNOLOGY

DISCIPLINE:	SEMESTER:			
CIVIL	4TH Sem	NAME OF THE TEACHING FACULTY: Er.TEJASWINI DAS		
	No of Days/Per week	Semester From Date: 16/01/202	24	
SUBJECT:	class allotted: 5 Class			
Th3. SURVEY – I	P/W(75)			
WEEK	CLASS DAY	THEORY TOPICS	REM	ARKS
		INTRODUCTION TO		
		SURVEYING, LINEAR		
	1 st	MEASUREMENTS: 1.1	Date	Dean/Principal
		Surveying: Definition,		_
		Aims and objectives		
	2 nd	Principles of survey-Plane		
		surveying		
	3rd	Geodetic Surveying-		
		Instrumental surveying		
1 st				
		Precision and accuracy of		
		measurements, instruments		
	4 th	used for measurement of		
		distance,		
		Types of tapes and chains.		
	5	Errors and mistakes in linear		
		measuremen		
	lst	Classification, Sources of errors		
		and remedies.		
		Corrections to measured		
		lengths due to-incorrect		
	and	length, temperature variation,		
	2 nd	pull, sag, numerical problem		
1		applying corrections.		
2 nd	3rd	SURVEYING : Equipment and		
	5.4	accessories for chaining		
		Ranging – Purpose,		
		signaling, direct and indirect		
	5 th	ranging, Line ranger – features		
		and use, error due to incorrect		

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		-Chaining on flat ground,	
	lst	Chaining on sloping ground – stepping method, Clinometer-	
		chain & tape, Chaining across	
		different types of obstacles	
	2 nd	–Numerical problems on	
	2	chaining across obstacles	
		Purpose of chain	
		surveying, Its Principles,	
	3rd	concept of field book.	
3rd		Selection of survey stations,	
		Perpendicular and Oblique	
	4 th	offsets, Instruments for setting	
	40	offset – Cross Staff, Optical	
		Square.	
		Errors in chain surveying –	
		compensating and accumulative errors causes &	
		remedies, Precautions to be	
	5 th	taken during chain surveying.	
		ANGULAR MEASUREMENT	
		AND COMPAS SURVEYING : Measurement of angles with	
	1 st	chain, tape &	
		compass	
	2 nd	Compass – Types, features,	
		parts, merits & demerits,	
		testing & adjustment of compass	
4 th	3rd	Designation of angles- concept	
		of meridians – Magnetic, True,	
		arbitrar	
	4 th	Concept of bearings – Whole	
		circle bearing, Quadrantal bearing,	
		Reduced bearing, suitability of	
		application, numerical	
	5 th	problems on conversion of	
		bearings	
		Lise of compares softing in	
	1 st	Use of compasses – setting in field-centering, leveling, taking	
		readings	

		concepts of Fore bearing, Back	
		Bearing, Numerical problems on computation of interior &	
	2 nd	exterior angles from bearings.	
		Effects of earth's magnetism – dip of needle, magnetic	
		declination, variation in	
5th	3rd	declination, numerical problems on application of	
	314	correction for declination.	
	4th	Errors in angle measurement	
	40	with compass – sources &	
		remedies	
	5 th	7 Principles of traversing –	
		open & closed traverse, Methods of traversing.	
		Local attraction – causes, detection, errors, corrections,	
		Numerical problems of	
	1 st	application of correction due to local attraction.	
6 th		Errors in compass surveying –	
		sources & remedies. Plotting of traverse – check of closing	
	2 nd	error in closed & open	
		traverse, Bowditch's correction, Gales table	
		MAP READING CADASTRAL	
		MAPS & NOMENCLATURE: Study	
	3rd	of direction, Scale, Grid	
		Reference and Grid Square Sstudy.	
		Grid Reference and Grid	
	4 th	Square Study of Signs and	
	5th	Symbols Cadastral Map	
	500	Preparation Methodology	
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	5th	Deflection angle method, bearing method,	
	Ist	Plotting the traverse by coordinate method, Checks for open and closed traverse.	
	2nd	Traverse computation – consecutive coordinates, latitude and departure, Gale's traverse table,	
11 th	3rd	Numerical problems on omitted measurement of lengths & bearings	
	4th	Closing error – adjustment of angular errors, adjustment of bearings, numerical problems	
		Balancing of traverse – Bowditch's method, transit method, graphical method, axis method, calculation of area of closed traverse.	
	Ist	LEVELLING AND CONTOURING : Definition and Purpose and types of leveling	
	2nd	concepts of level surface, Horizontal surface, vertical surface, datum, R. L., B.M	
12 th	3rd	leveling, concepts of line of collimation, axis of bubble tube, axis of	
	4th	Levelling staff – Temporary adjustments of level, taking reading with level,	
	5th	concept of bench mark, BS, IS, FS, CP, HI.	
	lst	Field data entry – level Book – height of collimation method and Rise & Fall method	

11 th Comparison, Numerical problems or reduction of levels applying both methods, Arithmetic checks. Image: Comparison Numerical problems or applying both methods, Arithmetic checks. 11 th ects of curvature and refraction, numerical problems on application of correction Image: Comparison Numerical problems on application of correction Reciprocal leveling - principles, methods, numerical problems, precise leveling. Image: Comparison Numerical problems, precise leveling. Errors in leveling and precautions, Permanent and temporary adjustments of different types of levels Image: Comparison Numerical problems, precise levels Methods of contouring, plotting contour maps, interpretation of contour maps, interpretation of correction maps, interpretation of contour maps, interpretation interpret Muman and Computation of volume of earthwork from contour maps, interpret Muman and conomic Activities (i.e.: Settlement, Communication, Land use etc.), Interpret Physical and Decision Making. Image: interpret Physical indices etc.), interpret Physical indices of indices etc.), interpret Physical indices et	,			Т
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		VOLUME:	
		COMPUTATION OF AREA &	

Tejaswini Das

Chittaraijan Perida

