



DEPARTMENT OF CIVIL ENGINEERING

TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Periods/Week	Academic Year	Date of commencement Semester
20CE3T02	SURVEYING & GEOMATICS	III	Civil Engineering	5	2021-2022	25/10/2021

COURSE OUTCOMES:

Students are able to

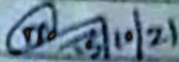

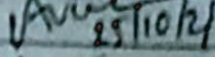

1	Understand the basic principles involved in linear and angular measurements [K2].
2	Identify to use various surveying instruments for Measure distances and bearings [K3].
3	Understand the concepts of leveling and location of contour [K3].
4	Measure horizontal and vertical angles using theodolite, Determine the distance and elevations of an object using tachometric principles [K3].
5	Compute various data required for various methods of surveying for setting out of boundaries [K3].

UNIT	Outcomes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Contact Hour
I	CO1: Understand the basic principles involved in linear and angular measurements [K2]	1.1	Unit I : Introduction Definition, uses of surveying, overview of plane surveying,	T1,T2	1
		1.2	Objectives , Principles	T1,T2	1
		1.3	Classification	T1,T2,R1	1
		1.4	Chain surveying: Principle, Accessories for linear measurements.	T1,R1,R2	1
		1.5	Ranging, Methods of chaining on level ground	T1,T2,R1	1
		1.6	Methods of chaining on sloping ground		
		1.7	Obstacle in chaining		
		1.8	Errors and mistakes in chaining, precautions against errors and mistakes		
		1.9	Chain and tape corrections		

		1.10	Compass surveying : Definitions, principle, traversing	T1,T2, R1,R2	1		
		1.11	Types of compass, temporary adjustments	T1,R1	1		
		1.12	Plane table surveying: Principle, accessories of plane table, orientation	T1,R1	1		
		1.13	Setting up plane table over a station, Methods of plane tabling	T1,T2	1		
		1.14	Errors and precautions, advantages and disadvantages	T1,T2	1		
Content beyond Syllabus (if needed)			Special Methods of resection	T1	1		
					Total	15	
II	Identify to use different types of surveying instruments[K3]	2.1	Unit II: Distances and directions	T1,T2	1	Chalk, Board, Ppt	
		2.2	Distance measurement conventions	T1,T2, R1	1		
		2.3	Uses of chain and tape, Electronic distances measuring instruments (EDM)	T1,T2, R1,R2	1		
		2.4	Principles of electro optical EDM	T1,R1	1		
		2.5	Errors and corrections to linear measurements	T1,T2	1		
		2.6	Compass survey , meridians, Azimuth and bearings	T1,T2	1		
		2.7	Declination and computation of angles	T1,T2	1		
		2.8	Traversing- purposes, transverse computation	T1,T2, R1	1		
		2.9	Transverse adjustments	T1,T2	1		
		2.10	Omitted measurements	T1,T2	1		
Content beyond Syllabus (if needed)			Temperature effect on chains and tapes.	T1,R1	1		
					Total	11	
III	Use different methods of surveying [K2]	3.1	Unit III: Levelling and contouring Concept and terminology	T1,T2, T3	1	Chalk, Board, Ppt	
		3.2	Level instruments	T1,T2	1		
		3.3	Temporary adjustments	T1,T2	1		
		3.4	Permanent adjustments	T1,T2	1		

		3.5	Methods of Leveling	T1,R1	1	
		3.6	Problems on leveling (HI Method)	T1,R1	1	
		3.7	Problems on leveling (Rise and fall Method)	T1,T2	1	
		3.8	Contour, characteristics and uses of contours	T1,T2	1	
		3.9	Methods of contouring: Direct method	T1,T2	1	
		3.10	Indirect method	T1,T2	1	
Content beyond Syllabus (if needed)			Scope of contouring	T1	1	
Total					11	
IV	Demonstrate the various components of theodolite [K2)	4.1	Unit IV : Theodolite surveying	T1,T2	1	Chalk, Board, Ppt
		4.2	Description and principles of theodolite	T1,R1	1	
		4.3	Uses and adjustment's	T1	1	
		4.4	Measurements of horizontal and vertical angles	T1,T2	1	
		4.5	Principles of electronic theodolite	T1,R1	1	
		4.6	Trigonometric Levelling	T1,T2	1	
		4.7	Tachometric surveying Principles of tachometric levelling	T1,R1	1	
		4.8	Importance of tachometric levelling	T1,T2	1	
		4.9	Stadia and tangential methods	T1,T2	1	
		4.10	Distance and elevation formulae	T1,T2	1	
		4.11	Staffs vertical and horizontal	T1,R2	1	
Content beyond Syllabus (if needed)						
Total					11	
V	Compute the various data required for setting out of curves [K3]	5.1	Unit V : Curves Types of curves	T1,T2	1	Chalk, Board, Ppt
		5.2	Design and setting out of Simple curves	T1,T4	1	
		5.3	compound curves	T1,T2	1	
		5.4	Transition curves	T1;R1	1	
		5.5	Modern surveying methods: Geodetic surveying	T1,T2	1	
		5.6	Total station	T1,T4	1	
		5.7	Global positioning system	T1	1	

		5.8	Computation of areas and volumes Area from field notes	T1,T2,R3	1
		5.9	Computation of areas along irregular boundaries	T1,T2	1
		5.10	Areas consisting of regular boundaries	T1,T2	1
		5.11	Embankments and cuttings for a level section, two level sections without transverse slopes	T4,R3	1
		5.12	Embankments and cuttings for a level section, two level sections with transverse slopes	T2,R3	1
		5.13	Capacity of reservoir	T1,T2	1
		5.14	Volume of borrow pits		
Content beyond syllabus (if needed)					
Total					14
CUMULATIVE PROPOSED PERIODS					62
Text Books:					
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION				
1	B C Punmia, ashik Kumar Jain, Arun Kumar Jain, 7 th edition, laxmi publications, New Delhi.				
2	Satish Gopi, Advanced surveying, 6 th Edition, Laxmi Publications (P) Ltd., New Delhi.,2017				
3	Venkataramaiah, A tesxt book of surveying, 5 th Edition, TEXT BOOKS house, 2017				
Reference Books:					
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION				
1	Arora, A basic surveying, 7 th Edition, S. Chand & Co, 2017				
2	Am Chandra, Higher surveying, 5 th Edition, Khanna Publishers, 2018				
3	SK Roy , Fundamentals of surveying, 4 th Edition				
Web Details					
1	http://www.icoachmath.com/physics/definition-of-contouring.html				
2	https://www.energy.geodeticsurveying/types				

	Name	Signature with Date
i. Faculty	Mr. D. SATISH	 25/10/21
ii. Course Coordinator	Mr. D. SATISH	 25/10/21
iii. Module Coordinator	Mr. A. VENKATA KRISHNA	 25/10/21
iv. Programme Coordinator	Mr. G.V.L.N MURTHY	


Principal