

19CE3303 - SURVEYING

Offering Branches	CE		
Course Category:	Program Core	Credits:	3
Course Type:	Theory	Lecture-Tutorial-Practical :	3-0-0
Prerequisites:	19BS1101 – Engineering Mathematics – I 19BS1204 – Applied Physics	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100
Course Outcomes			
Upon successful completion of the course, the student will be able to			
CO1	Comprehend the principles of chain, compass and distance		L4
CO2	Comprehend the principles of plane table, Analyse levelling and contouring		L5
CO3	Understand the principles of Theodolite and Tachometric Surveying		L4
CO4	Set out curves and computation of Areas and Volumes		L5
CO5	Know the Principles of triangulation survey and study on advanced instruments		L5
Course Content			
UNIT - 1	<p>Chain Surveying: Objectives, principles, classification and instruments of surveying, chain surveying instruments, types of chains, types of errors, traverses with a chain, field book entry, problems on cross staff survey.</p> <p>Compass Surveying: Types of compass, meridians and bearings, local attraction, magnetic declination, compass traversing and plotting, adjustment of closing error, problems on interior angles and local attraction.</p>		CO1
UNIT - 2	<p>Plane Table Surveying: Principle and instruments used in plane table surveying, methods of plane table surveying.</p> <p>Levelling and Contouring: Instruments for levelling, temporary adjustments, methods of levelling, finding reduced levels, problems on levelling. Contours, characteristics, uses of contours, methods of contouring, determination of reservoir capacity.</p>		CO2
UNIT - 3	<p>Theodolite Surveying: Classification, theodolite component parts, temporary adjustments, principle of theodolite survey, measurement of horizontal and vertical angles.</p> <p>Tacheometric Surveying: Principles and methods of tacheometry, tacheometry as applied to subtense measurement and problems, errors in tacheometric surveying.</p>		CO3

UNIT - 4	<p>Curve Setting: Types, elements of a curve, setting out a simple, compound, reverse, transition curves, problems on simple curves.</p> <p>Construction Surveys: Setting out of buildings, computation of areas, earthwork measurements- single level and two level sections, computation of volumes using prismoidal and trapezoidal methods, problems.</p>	CO4
UNIT - 5	<p>Triangulation Surveying: Base of the object accessible and an inclined object accessible, reduced level of the elevated points with inaccessible bases, instrument axes at different levels, principle, purpose and classification of triangulation survey, layout of triangulation.</p> <p>Total Station & GIS: EDM instruments, Total Station, Global Positioning System, GIS</p>	CO5
Learning Resources		
Text Books	<ol style="list-style-type: none"> 1. B.C. Punmia, A.K. Jain, Arun Jain, Surveying I and II, 16/e, Laxmi Publications,2017. 2. R. Subramanian, Surveying and Levelling, 2/e, Oxford University Press,2014. 3. D.G Charles, R.W. Paul, Elementary Surveying: An Introduction to Geomatics, 15/e, Prentice Hall,2018 	
Reference Books	<ol style="list-style-type: none"> 1. S.K. Roy, Fundamentals of Surveying, 2/e, Prentice Hall of India, 2011. 2. T.P. Kanetkar, Surveying and Levelling, Part I and II, 4/e, New Central Book Agency2012.. 	
e-Resources & other digital material	<ol style="list-style-type: none"> 1. https://nptel.ac.in/courses/105107122/ 2. http://jntuk-coeerd.in/ 	

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength Correlations (3: High, 2: Medium, 1: Low)														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3		2		3						3	3	
CO2	3	3		2		3						3	3	
CO3	3	3		2		3						3	3	
CO4	3	3		2		3						3	3	
CO5	3	3		2		3						3	3	