

## AR-405

CODE	SUBJECT	CREDITS
AR-405	SURVEY & LEVLLING-II	02
<b>FOCUS</b>		
	The main emphasis is on understanding about various advanced instruments used for surveying and levelling. To develop an understanding in the physical survey work of open spaces and building and ascertaining ground configuration through leveling process to prepare a contoured plan or map.	
<b>CONTENT</b>		
	<ol style="list-style-type: none"><li>1. Definitions – Level surface, level line, horizontal surface, horizontal line, datum surface. Bench mark, types of bench marks, Fore sight, Back sight, Intermediate sight, Change point (C.P.)</li><li>2. Dumpy level, Tilting level, Levelling staff, temporary adjustments. Introduction to Automatic level, simple and differential leveling, recording of levels in field book. Working out reduced level by the Collimation system and the Rise and fall system. Check levelling, profile leveling, Cross sectioning, reciprocal levelling.</li><li>3. Contour survey – Definition of contour, contour line, contour interval, horizontal equivalent. Characteristics of contour lines. Uses of contour maps. Methods of locating contours, Direct and indirect methods. Preparation of contour maps. Interpolation of contours.</li><li>4. Theodolite Survey – Various uses, temporary and permanent adjustments of theodolite. Measurement of horizontal angle by Repetition method and Direction method. Measurements of vertical angles. Computation of building height by theodolite. Miscellaneous operations with theodolite.</li></ol> Total station – Various uses. Fundamental measurements, horizontal angle, vertical angle, slope distance. Data interpretation.	
<b>METHODOLOGY</b>		
	Practical demonstration and documented site work is a must to familiarize students with use of all relevant instruments, in addition to lectures on the basic concepts and theory.	
<b>REFERENCES:</b>		
	-Surveying And Levelling By T.P. KANETKAR AND S.V.KULKARNI. -Surveying And Levelling By B.C. PUNMIA -Surveying Vol-1 By DR. B.C.PUNMIA, ASHOK K.JAIN AND ARUN K.JAIN -Concise Practical Surveying By R.F.LANE AND W.C.CARTIN	