

<b>Course Title: BASIC SURVEYING PRACTICE</b> [As per Choice Based Credit System (CBCS) scheme] <b>SEMESTER – III</b>			
Subject Code	15CVL38	IA Marks	20
Number of Lecture Hours/Week	03	Exam Marks	80
Total Number of Lecture Hours	42	Exam Hours	03
<b>CREDITS – 02</b>			
<b>Course objectives:</b> This course will enable students to <b>The objectives of this course is to make students to learn:</b> <ol style="list-style-type: none"> <li>1. <i>Apply the basic principles of engineering surveying and measurements</i></li> <li>2. <i>Follow effectively field procedures required for a professional surveyor</i></li> <li>3. <i>Use techniques, skills and conventional surveying instruments necessary for engineering practice..</i></li> </ol>			
<b>Modules</b>	<b>Teaching Hours</b>	<b>Revised Bloom's Taxonomy (RBT) Level</b>	
1. a) Measurements of distances using tape along with horizontal planes and slopes, direct ranging. b) Setting out perpendiculars. Use of cross staff, optical square.	03	<b>L3, L4</b>	
2. Obstacles in chaining and ranging – Chaining but not ranging, ranging but not chaining, both ranging and chaining.	03	<b>L3</b>	
3. Measurements of bearings / directions using prismatic compass, setting of geometrical figures using prismatic compass.	03	<b>L3</b>	
4. Measurement of bearings of sides of a closed traverse and adjustment of closing error by Bowditch method.	03	<b>L3</b>	
5. Determination of distance between two inaccessible points using compass and accessories	03	<b>L4</b>	
6. Determination of reduced levels of points using dumpy level/auto level (simple leveling)	03	<b>L4</b>	
7. Determination of reduced levels of points using dumpy level/auto level (differential leveling and inverted leveling)	03	<b>L4</b>	
8. To determine the difference in elevation between two points using Reciprocal leveling and to determine the collimation error	03	<b>L4</b>	
9. To conduct profile leveling, cross sectioning and block leveling. Plotting profile and cross sectioning in excel. Block contour on graph paper to scale	03	<b>L3</b>	
10. Measurement of horizontal angle by repetition and reiteration methods and Measurement of vertical angles using theodolite.	03	<b>L4</b>	

11. Determination of horizontal distance and vertical height to a base inaccessible object using theodolite by single plane and double plane method.	03	<b>L4</b>
12. To determine distance and elevation using tachometric surveying with horizontal and inclined line of sight.	03	<b>L3</b>
13. Closed traverse surveying using Theodolite and applying corrections for error of closure by transit rule.	03	<b>L3</b>
14. Demonstration of Minor instruments like Clinometer, Ceylon Ghat tracer, Box sextant, Hand level, Planimeter, nautical sextant and Pentagraph.	03	<b>L3</b>
<b>Course outcomes:</b> After a successful completion of the course, the student will be able to: <ol style="list-style-type: none"> <li>1. Apply the basic principles of engineering surveying and for linear and angular measurements.</li> <li>2. comprehend effectively field procedures required for a professional surveyor.</li> <li>3. Use techniques, skills and conventional surveying instruments necessary for engineering practice.[L3,L4][PO5]</li> </ol>		
<b>Program Objectives (as per NBA)</b> <ol style="list-style-type: none"> <li>1. <i>Engineering Knowledge.</i></li> <li>2. <i>Problem Analysis.</i></li> <li>3. <i>Interpretation of data.</i></li> </ol>		
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>• All are individual experiments.</li> <li>• Instructions as printed on the cover page of answer script for split up of marks to be strictly followed.</li> <li>• All exercises are to be included for practical examination.</li> </ul>		
<b>Text Books:</b> <ol style="list-style-type: none"> <li>1. B.C. Punmia, <b>“Surveying Vol.1”</b>, Laxmi Publications pvt. Ltd., New Delhi – 2009.</li> <li>2. Kanetkar T P and S V Kulkarni , <b>Surveying and Levelling Part I</b>, Pune VidyarthiGrihaPrakashan, 1988</li> </ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"> <li>1. S.K. Duggal, <b>“Surveying Vol.1”</b>, Tata McGraw Hill Publishing Co. Ltd. New Delhi. – 2009.</li> <li>2. K.R. Arora, <b>“Surveying Vol. 1”</b> Standard Book House, New Delhi. – 2010</li> </ol>		