


**Government of Karnataka**  
**Department of Technical Education**

	Course Title: <b>SURVEYING PRACTICE - I</b>		
	Credits (L:T:P) : <b>0:2:4</b>	Total Contact Hours: <b>78</b>	Course Code: <b>15CE23P</b>
	Type of Course: <b>Practical and Mini-Project</b>	Credit : <b>03</b>	Core/ Elective: <b>Core</b>

**Board of Technical Examinations, Bengaluru**

**Pre requisites:** Practical knowledge of Basic Science and Mathematics in Secondary Education

**Course Objective:**

1. To provide knowledge of basic Principles of surveying.
2. Develop skills in using survey instruments, taking readings and plotting the details

**Course Outcomes:**

On successful completion of the course, the student will be able to:

Course Outcome	
CO1	Use survey instruments appropriately.
CO2	Understand the basic principles of surveying.
CO3	Conduct the survey, analyze the data, and prepare the drawings.
CO4	Analyse the data from the drawing and estimate the quantities.
CO5	Present a case study using survey data and engage in lifelong learning.

**Mapping of COs with Pos**

Mapping of COs with Pos	PROGRAMME OUTCOME												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
<b>Course Outcome</b>	CO1	S	S			S				S	S		
	CO2	S											
	CO3	S	S	S	S		M	M	M	S		M	
	CO4	M	M	S	S		S		M	M		M	
	CO5	M	M	S	S	S	S	M	M	M	S	S	S

S: Strong Relationship

M: Moderate Relationship

**Course Contents:**

UNIT NO.	COURSE CONTENTS	HOURS
1	Chain surveying	24
2	Compass Surveying	21
3	Levelling	33

Total	78
-------	----

## GRADED EXERCISES

### Unit - I

1. Study of instruments required for chain surveying.
2. Ranging and chaining a line
3. Prolongation of a survey line
4. Practice of reciprocal ranging
5. Practice of different methods of Setting out perpendiculars
6. Set out Regular Polygons and compute its area
7. Practice of cross staff survey
8. Conduct traversing and record the data in the Field book
9. Obstacles in chaining

### Unit - II

1. Study of prismatic compass and surveyors compass
2. Taking bearings and finding the included angles by using prismatic compass
3. Set out regular and irregular Polygons using prismatic compass
4. Find the distance between two inaccessible points using Compass

### Unit - III

1. Study of level and its temporary adjustments
2. Taking level of various points and recording it in a level book
3. Finding the difference in elevation between two points by Simple & Differential Levelling
4. Conduct Fly levelling to establish a Temporary BM and check its accuracy
5. Finding RL of given point by taking Inverted Staff Reading
6. Conduct Longitudinal and cross sectioning for the given alignment and plot it
7. Conduct Block Levelling for an area and plot Contours

### SCHEME OF EVALUATION

Serial no	Description	Marks
1	Writing procedure	05
2	Conducting & Performance	20
3	Calculation and results	15
4	Viva-voice	10
<b>Total</b>		<b>50</b>

**List of equipment:**

SL NO	EQUIPMENTS	QUANTITY
1	Auto / quick setting / Dumpy level with accessories	05
2	Metric chains 30m	05
3	Arrows	50
4	Tape 15m	15
5	Tape 30 m	05
6	Ranging rods	25
7	Cross staff, french cross staff , open cross staff, line ranger, optical square, prism square,	05
8	Prismatic compass	05
9	Surveyor compass	02

**Course Delivery:** The course will be delivered through lectures, Demonstration and practices

**Course Assessment and Evaluation Scheme:**

method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
<b>Direct Assessment</b>	CIE	IA	Students	Two tests (Average of Two tests will be computed)	10	Blue books	1,2,3,4
				Graded exercises (Average of marks allotted for each graded exercise)	10	Record	1 2 3 4
				Mini Project	05	Report	1,2,3,4,5
				<b>Total</b>	<b>25</b>		
	SEE	End Exam		End of the course	<b>50</b>	Answer scripts at BTE	1,2,3,4
<b>Indirect Assessment</b>	Student Feedback on course		Students	Middle of the course		Feedback forms	1, 2 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1,2,3, 4 Effectiveness of Delivery of instructions & Assessment

						Methods
--	--	--	--	--	--	---------



## TEXT BOOKS

1. Surveying and Levelling Vol- I & II by B C Punmia
2. Surveying and Levelling by T P konetkar & S V Kulkarni
3. Plane Surveying by Dr. Alak De
4. Surveying and Levelling by S SBhavikatti
5. Surveying by Duggal
6. Surveying by R Agor
7. Fundamentals of Surveying by S K Roy
8. Surveying and Levelling by N NBasak
9. Advanced Surveying by R Agor

## E-links

1. [www.elearning.com/survey](http://www.elearning.com/survey)
2. <http://nptel.ac.in/video.php?subjectId=105104101>
3. <http://media.sakshat.ac.in/NPTEL-IIT-Videos/>
4. [http://nptel.iitk.ac.in/courses/Civil\\_Eng/IIT%20Roorkee/Surveying.htm](http://nptel.iitk.ac.in/courses/Civil_Eng/IIT%20Roorkee/Surveying.htm)
5. <http://nptel.iitk.ac.in/>