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## **FOCAL POINTS**

- 1.** The main objective in the very beginning classes of this subject is to provide basis knowledge regarding this subject.
- 2.** After that we will move to our university syllabus. We will start from section one.
- 3.** Laboratory Experiments will be conducted regularly (one lab per week).
- 4.** Group discussion will be organized to remove hesitation of students.
- 5.** Website links will be provided to student for getting recently developed fundamentals related to subject.
- 6.** Regular class tests will be conducted to check the performance of students.
- 7.** We will finish the entire syllabus within designed time duration so that we may get time for revision work.
- 8.** All the sections of syllabus will be given equal and maximum attention
- 9.** Class room as well as power point presentations will be taken from students regularly.
- 10.** Student Doubts will be cleared by managing some extra classes.
- 11.** Stress will be given on practical and field knowledge which will be the master success key for student.

## **TEACHING METHODOLOGY**

### **COURSE OBJECTIVE**

The profession or work of examining and recording the area and features of a piece of land so as to construct a map, plan, or detailed description of it which is called survey.

### **METHODOLOGY**

The Procedure will be lectures, presentations, Tutorials, Tests, assignments of class work and Practical Labs.

### **ACHIEVEMENT**

At the end of semester, students will have a detailed knowledge of Survey its basic properties and different type of survey.

### **EVALUATION**

Besides the semester end – examination, the students will be continuously assessed during the course on the following basis

- i. Mid Term Examinations 30 Marks
- ii. Internal Assessment 20 Marks ( Assignments +Attendance )
- iii. End Semester Examination 100 Marks

Total : 150 Marks

**SYLLABUS AS PER MDU**

**SECTION-A**

**Unit-I:** Fundamental Principles of Surveying: Definition, objects, classification, fundamental principles, methods of fixing stations.

**Unit-II:** Measurement of distances: Direct measurement, instruments for measuring distance, instruments for making stations, chaining of line, errors in chaining, tape corrections examples.

**SECTION-B**

**Unit-III:** Compass and Chain Traversing: Methods of traversing, instruments for measurement of angles-prismatic and surveyor`s compass, bearing of lines, local attraction, examples.

**Unit-IV:** Levelling: Definition of terms used in levelling, types of levels and staff, temporary adjustment of levels, principles of levelling, reduction of levels, booking of staff readings, examples, contouring, characteristics of contours lines, locating contours, interpolation of contours, Calculations of volume of earth works by means of contour lines.

**SECTION-C**

**Unit-V:** Theodolite and Theodolite Traversing: Theodolites, temporary adjustment of theodolite, measurement of angles, repetition and reiteration method, traverse surveying with theodolite, checks in traversing, adjustment of closed traverse, examples, Electronic theodolite.

**Unit-VI:** Plane Table Surveying: Plane table, methods of plane table surveying, radiation, intersection, traversing and resection, two point and three point problems.

**SECTION-D**

**Unit-VII:** Tacheometry: Uses of tacheometry, principle of tacheometric surveying, instruments used in tacheometry, systems of tacheometric surveying-stadia system fixed hair method, determination of tacheometric constants, tangential systems, examples.

**Unit-VIII:** Curves: Classification of curves, elements of simple circular curve, location of tangent points-chain and tape methods, instrumental methods, examples of simple curves. Transition Curves-Length and types of transition curves, length of combined curve.

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Department: Civil Engineering  
Subject: Survey-I, CE-207-F

Course: B.Tech  
Semester: 3<sup>rd</sup>  
Faculty name: Ganesh Sharma

### BOOKS RECOMMENDED: 1.

Surveying Vol.I by B.C.Punmia

2. Surveying Vol.I by T.P.Kanitkar

<b>Name of the Faculty</b>	:	Mr Ganesh Sharma
<b>Discipline</b>	:	Civil Engineering
<b>Semester</b>	:	3 <sup>rd</sup>
<b>Subject</b>	:	Survey CE-207-F
<b>Lesson Plan Duration</b>	:	15 Weeks (From August 2018 to November 30)
<b>Work load (Lectures/Practical)</b>		
<b>Per week (in hours)</b>	:	Lectures-04, Practicals-02

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC (including assignment /test)	PRACTICAL DAY	TOPIC
1 <sup>ST</sup>	1 <sup>st</sup>	Introduction to the subject, the surveying	1 <sup>st</sup>	Introduction for drawing on Sheets and to perform drawing on sheets
	2 <sup>nd</sup>	Fundamental Principles of Surveying		
	3 <sup>rd</sup>	Different types of survey & introduction to surveying system		
	4 <sup>th</sup>	Surveying instruments and there uses in different type of survey works		
2 <sup>ND</sup>	1 <sup>st</sup>	Measurement of distances	2 <sup>nd</sup>	Drawings of bricks, drawing of
	2 <sup>nd</sup>	Different type of tapes		

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	3 <sup>rd</sup>	Direct measurement, instruments for measuring distance, instruments for making stations		walls
	4 <sup>th</sup>	chaining of line, errors in chaining, tape corrections examples		
3 <sup>rd</sup>	1 <sup>st</sup>	Different types of Compass	3 <sup>rd</sup>	Drawing of cavity walls
	2 <sup>nd</sup>	Prismatic and surveyor's compass		
	3 <sup>rd</sup>	Chain Traversing		
	4 <sup>th</sup>	Methods of traversing		
4 <sup>th</sup>	1 <sup>st</sup>	instruments for measurement of angles-prismatic and surveyor's compass	4 <sup>th</sup>	Another type of cavity wall drawing
	2 <sup>nd</sup>	bearing of lines how calculate bearing of line		
	3 <sup>rd</sup>	Different types of local attraction		
	4 <sup>th</sup>	How to mini the local attraction		
5 <sup>th</sup>	1 <sup>st</sup>	Test for Sec-A	5 <sup>th</sup>	Drawing of cavity wall
	2 <sup>nd</sup>	What is levelling different types of levelling		
	3 <sup>rd</sup>	Definition of terms used in levelling		
	4 <sup>th</sup>	Instruments used in levelling		
6 <sup>th</sup>	1 <sup>st</sup>	types of levels and staff, temporary adjustment of levels	6 <sup>th</sup>	Drawing of Bonds in Brick work for example; English bond and Flemish bond
	2 <sup>nd</sup>	Principles of levelling, reduction of levels, booking of staff readings, examples		
	3 <sup>rd</sup>	Introduction to contour and different types of contour		
	4 <sup>th</sup>	contouring, characteristics of contours lines, locating contours		
7 <sup>th</sup>	1 <sup>st</sup>	Interpolation of contours , Calculation of volume of earth works by means of countour lines.	7 <sup>th</sup>	<b>SESSIONAL-I EXAMINATION</b>
	2 <sup>nd</sup>	Practical aspects of contour		
	3 <sup>rd</sup>	Uses of contour in daily life for calculating the amount of earth work		
	4 <sup>th</sup>	Test for Sec-B		
8 <sup>th</sup>	1 <sup>st</sup>	Introduction to theodolite	8 <sup>th</sup>	Drawing of foundations for example; PILE,
	2 <sup>nd</sup>	Different types of theodolite and there need		

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	3 <sup>rd</sup>	Theodolite and Theodolite Traversing: Theodolites, temporary adjustment of theodolite, measurement of angles		Shallow Foundations
	4 <sup>th</sup>	Repetition and reiteration method, traverse surveying with theodolite, checks in traversing, adjustment of closed traverse, examples, Electronic theodolite.		
9 <sup>th</sup>	1 <sup>st</sup>	traverse surveying with theodolite, checks in traversing	9 <sup>th</sup>	Drawing of grillage foundation
	2 <sup>nd</sup>	What is traversing and different methods of traversing		
	3 <sup>rd</sup>	How to calculate the distance b/w two point using traverse survey		
	4 <sup>th</sup>	Introduction to Electronic theodolite		
10 <sup>th</sup>	1 <sup>st</sup>	Introduction to plane table	10 <sup>th</sup>	Ground Floor plan drawing
	2 <sup>nd</sup>	What is plane table survey and different type of instruments used in plane table survey		
	3 <sup>rd</sup>	methods of plane table surveying, radiation, intersection, traversing and resection		
	4 <sup>th</sup>	two point and three point problems numerical problems		
11 <sup>th</sup>	1 <sup>st</sup>	Test for the Sec –c	11 <sup>th</sup>	Drawing of stairs
	2 <sup>nd</sup>	Tacheometry: Uses of tacheometry, principle of tacheometric surveying		
	3 <sup>rd</sup>	Instruments used in tacheometry, systems of tacheometric surveying-		
	4 <sup>th</sup>	stadia system fixed hair method, determination of tacheometric constants, tangential systems, examples		
12 <sup>th</sup>	1 <sup>st</sup>	Numerical problems on tacheometry survey	12 <sup>th</sup>	Front and Side elevation
	2 <sup>nd</sup>	Test for techeometric survey		
	3 <sup>rd</sup>	Introduction to curves and different types of curves		
	4 <sup>th</sup>	Method to plot a curve		
13 <sup>th</sup>	1 <sup>st</sup>	elements of simple circular curve, location of tangent points	13 <sup>th</sup>	

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	2 <sup>nd</sup>	Tape methods, instrumental methods, examples of simple curves.		<b>SESSIONAL-II EXAMINATION</b>
	3 <sup>rd</sup>	Transition Curves-Length and types of transition curves, length of combined curve		
	4 <sup>th</sup>	examples: Vertical Curves: Necessity and types of vertical curves		
14 <sup>th</sup>	1 <sup>st</sup>	Numerical problems on curves	14 <sup>th</sup>	Drawing of Cases, doors and windows and roofs
	2 <sup>nd</sup>	Revision of Sec A		
	3 <sup>rd</sup>	Test for secD		
	4 <sup>th</sup>	Revision & doubt session		
15 <sup>th</sup>	1 <sup>st</sup>		15 <sup>th</sup>	<b>PRE-UNIVERSITY EXAMINATIONS</b>
	2 <sup>nd</sup>			
	3 <sup>rd</sup>			
	4 <sup>th</sup>			



## ASSIGNMENTS

### **Assignment – I**

1. What do you mean by surveying ?
2. Explain type of surveying
3. Introduction geodetic survey concept and method?
4. Type of instruments used for survey?
5. What do you mean by mean by Cadastal survey?
6. Explain defects in the chain ?
7. Difference between plain and geodectic survey?

### **Assignment – II**

1. What do you mean by chain surveying ?
2. How many tyes of chains are used in survey?
3. Advantage and disadvantages of steel tape?
4. Define engineers chain detail?

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5. Explain correction to be apply in chains used?

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### **Assignment – III**

1. What is leveling and different types of instruments used in leveling?
2. What are the temporary adjustments in leveling?
3. How to calculate chainage of a line ?
4. What is reduced level and how to calculate it?

### **Assignment – IV**

1. Define contour and Explain different types of contour .
2. Define three point problem ?
3. Define trial and error method of three point problem ?.
4. Define mechanical method and analytical method?

**Assignment – V**

1. What is theodolite traverse explain it ?
2. What are the various methods of theodolite traversing?
3. Define deflection angle method in detail?
4. Write a brief note on prismatic compass
5. Temporary adjustment in theodolite survey

**Assignment – VI**

1. What are contour gradient ? Explain their importance in the location of hill road ?
2. Define and explain contour ?
3. Different type of contours and explain why contour can't cross each other ?
4. Factors affecting contour interval?
5. Describe the terms true bearing and magnetic bearing ?



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## MERI College of Engineering & Technology (MERI-CET)

Course: B.Tech  
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Faculty name: Ganesh Sharma