

**Department of Civil Engg.**  
**Govt. Polytechnic for Women Rehan**  
**Distt. – Kangra (H.P.) – 176022**



### LESSON PLAN

Program Name	Civil Engineering
Subject Name	Basic Surveying
Subject Code	CEPC203
Semester	3 <sup>rd</sup>
Subject Teacher Name	Amit Thakur

#### Evaluation Scheme

Sr. No.	Subject Name	Study scheme (Hrs/Week)		Marks in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1.	Basic Surveying	3	4	40	-	40	-	60	100
Reference Books		Punmia, BC, Arun Kumar, Surveying I							
		Basak, N. N., Surveying and Levelling							
		Arora K R, Surveying Vol. I							
		Bhavikatti, S. S., Surveying and Levelling							

#### Course Outcomes (COs)

CO – 1	To understand types of surveying works required
CO – 2	To know the types of method and equipment to be used for different surveys
CO – 3	To know the use and operational details of various surveying equipment.

98

### Teaching Plan

	Name of Topic	Proposed Date	Actual Date	Remarks
<b>UNIT-1</b> <b>Overview and Classification of Survey</b>	Survey- Purpose and Use.	01/08/2024		
		02/08/2024		
	Types of surveying- Primary and Secondary,	07/08/2024		
	Classification: Plane, Geodetic, Cadastral, Hydrographic, Photogrammetry and Aerial	08/08/2024 09/08/2024 14/08/2024 16/08/2024		
	Principles of Surveying.	21/08/2024		
	Scales: Engineer's scale, Representative Fraction (RF) and diagonal scale.	22/08/2024		
<b>Unit- 2</b> <b>Chain Surveying</b>	Instruments used in chain survey: Metric Chain, Tapes, Arrow, ranging rod, Line ranger, Offset rod, Open cross staff, Optical square	23/08/2024		
		28/08/2024		
	Chain survey Station, Base line, Check line, Tie line, Offset, Tie station. Ranging: Direct and Indirect Ranging.	29/08/2024		
		30/08/2024		
	Methods of Chaining, obstacles in chaining	04/09/2024		
		05/09/2024		
	Errors in length: Instrumental error, personal error, error due to natural cause, random error	06/09/2024		
		11/09/2024		
	Principles of triangulation.	12/09/2024		
Class Test -1	13/09/2024			
Types of offsets: Perpendicular and Oblique	18/09/2024			
Conventional Signs, Recording of measurements in a field book.	19/09/2024			

72

<b>Unit- 3</b> <b>Compass</b> <b>Traverse Survey</b>	Compass Traversing- open, closed.	20/09/2024		
	Technical Terms: Geographic/ True Magnetic Meridians and Bearings, Whole Circle Bearing system and Reduced Bearing system and examples on conversion of given bearing to another bearing (from one form to another)	25/09/2024 26/09/2024		
	Fore Bearing and Back Bearing, Calculation of internal and external angles from bearings at a station, Dip of Magnetic needle, Magnetic Declination	27/09/2024 03/10/2024 04/10/2024		
	Components of Prismatic Compass and their Functions, Methods of using Prismatic Compass- Temporary adjustments and observing bearings.	09/10/2024 10/10/2024		
	Local attraction, Methods of correction of observed bearings - Correction at station and correction to included angles.	11/10/2024		
<b>Unit- 4</b> <b>Leveling and</b> <b>Contouring</b>	Basic terminologies: Level surfaces, Horizontal and vertical surfaces, Datum, Benchmarks	16/10/2024		
	Class Test -2	18/10/2024		
	GTS, Permanent, Arbitrary and Temporary, Reduced Level, Rise, Fall, Line of collimation, Station, Back sight, Fore sight, Intermediate sight, Change point, Height of instruments	23/10/2024 24/10/2024		
	Types of levels: Dumpy, Tilting, Auto level, Digital level, Components of Dumpy Level and its fundamental axes, Temporary adjustments of Level.	25/10/2024		
	Types of Levelling Staff: Self-reading staff and Target staff. Reduction of	01/11/2024		

AL

	Types of Levelling Staff: Self-reading staff and Target staff. Reduction of level by Line of collimation and Rise and Fall Method.	01/11/2024		
	Levelling Types: Simple, Differential, Fly, Profile and Reciprocal Levelling. Contour, contour intervals, horizontal equivalent.	06/11/2024 07/11/2024		
	Uses of contour maps, Characteristics of contours, Methods of Contouring: Direct and indirect	08/11/2024		
	House Test	11/11/2024		
Unit- 5 Measurement of Area and Volume	Components and use of Digital planimeter.	20/11/2024		
		21/11/2024		
	Measurement of area using digital planimeter.	22/11/2024		
	Measurement of volume of reservoir from contour map.	27/11/2024 28/11/2024 29/11/2024		

### Assignments

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1, Unit-2,	15/09/2024		
A-2	Unit-3, Unit-4,	20/10/2024		
A-3	Unit-5	22/11/2024		

House Test/Class Test		Proposed Date	Actual Date	Remarks
Name of test	Syllabus for Tests			
Class Test -1	Unit-1-Unit-2-	As per HPTSB Academic Schedule		
Class Test -2	Unit-3Unit-4 ,			
House Test - 1	Unit-1to Unit5			

(Signature of Teacher)

Er.Amit Thakur

(Signature of HOD)

Principal

Govt. Polytechnic for Women  
Rehan Distt. Kangra (H.P.)

Approved