



Lok Jagruti Kendra University
University with a Difference

Diploma in Architectural Assistantship



Course Code: 025080303
Surveying and Levelling

Programme / Branch Name			Diploma in Architectural Assistantship			
Course Name	Surveying and Levelling				Course Code	025080303
Course Type	HSSC	BSC	ESC	PCC	OEC	PEC

Legends: HSSC: Humanities and Social Sciences Courses

ESC: Engineering Science Courses

OEC: Open Elective Courses

BSC: Basic Science Courses

PCC: Program Core Courses

PEC: Program Elective Courses

1. Teaching and Evaluation Scheme

Teaching Hours / Week / Credits				Evaluation Scheme			
L	T	P	Total Credit	CCE	SEE (Th)	SEE (Pr)	TOTAL
2	0	2	3	50	50	50	150

Legends:

L: Lectures

T: Tutorial

P: Practical

CCE:

Continuous & Comprehensive Evaluation

SEE (Th):

Semester End Evaluation (Theory)

SEE (Pr):

Semester End Evaluation (Practical)

2. Prerequisites

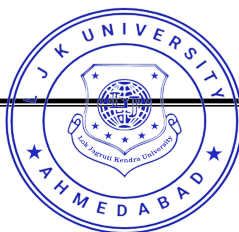
- ✓ Basic mathematics

3. Rationale

Students need to have information of the field and its topography to prepare maps or drawings; for any civil or architectural work. This course will help the students to get familiar with the various surveying instruments and will help to improve the understanding of the topography of building sites. This course will provide an opportunity to develop skills in surveying at the primary level.

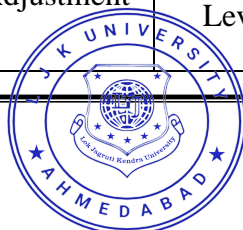
4. Objectives

- ✓ Carry out a field survey and prepare required drawings and maps.
- ✓ Interpret the drawings, contour maps, etc.



5. Contents

Unit No.	Unit Name	Topics	Learning Outcomes	% Weightage	Hours
1.	Fundamental Definition and Concepts	1.1. Surveying: Object 1.2. Primary Division of Surveying 1.3. Classification 1.4. Principles of Surveying 1.5. Plans and Maps 1.6. Scales 1.7. Diagonal Scale	<ul style="list-style-type: none"> Explain the Basics of Surveying. Use Scales as Per Requirements. 	5	2
2.	Linear Measurements	2.1. Different Methods 2.2. Direct Measurements 2.3. Instruments for Chaining 2.4. Ranging Out Survey Lines 2.5. Chaining 2.6. Errors Due to Incorrect Chain 2.7. Chaining on Sloping Ground 2.8. Errors in Chaining	<ul style="list-style-type: none"> Perform Linear Measurements Using Simple Tools and Equipment. 	15	4
3.	Chain Survey	3.1. Chain Triangulation 3.2. Survey Station 3.3. Survey Lines 3.4. Locating Ground Features:Offsets 3.5. Field Book 3.6. Instruments for Setting Out Right Angles 3.7. Obstacles in Chaining 3.8. Plotting A Chain Survey	<ul style="list-style-type: none"> Perform Chain and Tape Survey. Prepare Drawing As Per Recorded Measurements. 	10	3
4.	Compass Survey	4.1. Introduction 4.2. Bearings and Angels 4.3. The Prismatic Compass 4.4. The Surveyor's Compass 4.5. Magnetic Declination 4.6. Local Attraction 4.7. Errors in Compass Survey	<ul style="list-style-type: none"> Perform Angular Measurements Using the Appropriate Compass. Prepare Drawing as Per Recorded Measurements. 	30	7
5.	Levelling	5.1. Definitions 5.2. Methods of Levelling 5.3. Levelling Staff 5.4. Temporary Adjustment of a Level	<ul style="list-style-type: none"> Use Levels for Surveying Application. Prepare Contour Maps by Calculating Reduce Level. 	40	12



		5.5. Theory of Direct Levelling 5.6. Differential Levelling 5.7. Booking and Reducing Levels 5.8. Errors in Levelling 5.9. Contouring 5.10. Contour Interval 5.11. Characteristics of Contour 5.12. Interpolation of contour			
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Total Hours **28**

6. List of Practicals / Exercises

The practicals/exercises have been properly designed and implemented in an attempt to develop different types of skills, so that students can acquire the competencies/programme outcomes. Following is the list of practicals/exercises.

Sr. No	Practical / Exercises	Key Competency	Hours
1	Demonstrate the uses of survey tools and equipment	To help the students to get familiar with the various surveying instruments	06
2	Carry out the surveying project on a given site to locate surrounding features using chain and compass	Carry out a field survey and prepare required drawings and maps.	08
3	Carry out levelling project on undulating ground and prepare the drawing sheet showing the ground profile and contours of the site.	Carry out field survey by level and to Interpret the drawings, contour maps	14

Total Hours **28**

7. Suggested Specification Table for Evaluation Scheme

Unit No.	Unit Name	Distribution of Topics According to Bloom's Taxonomy					
		R %	U %	App %	C %	E %	An %
1	Fundamental Definition and Concepts	30	40	30	-	-	-
2	Linear Measurements	30	40	30	-	-	-
3	Chain Survey	10	30	30	10	5	5
4	Compass Survey	10	30	30	15	10	5
5	Levelling	10	30	40	10	5	5

Legends: R: Remembering U: Understanding
 App: Applying C: Creating
 E: Evaluating An: Analyzing



8. Textbooks

- 1) Surveying and Levelling Vol-I, Dr. B. C. Punmia, Laxmi Publications Pvt. Ltd.

9. Reference Books

- 1) Surveying and Levelling Vol-I, T. P. Kanetkar & S. V. Kulkarni, Puna Vidyarthi Griha Prakashan.

10. Open Sources (Website, Video, Movie)

- 1) <https://nptel.ac.in/courses/105/107/105107122/>
- 2) <https://civiltoday.com/surveying/87-surveying>
- 3) <https://landsurveyorsunited.com/>
- 4) https://www.youtube.com/playlist?list=PLcWeCCSvXbNkDkTIf9iagW9VQFFa_hpev

