

GANPAT UNIVERSITY									
FACULTY OF ARCHITECTURE DEISGN & PLANNING									
Programme	Bachelor of Architecture				Branch/Spec.	INSTITUTE OF ARCHITECTURE			
Semester	III				Version	2.0.0.0			
Effective from Academic Year		2020-21			Effective for the batch Admitted in			June 2019	
Subject code	2IIIA06SSL		Subject Name		Site Survey & Levelling				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	1	-	1	-	2	Theory	40	60	100
Hours	1	-	2	-	3	Practical	-	-	-
Objective:									
<ul style="list-style-type: none"> To make students aware of how surveying and levelling is important in realization of architectural design concept. At this stage, students shall be exposed to applications of principles of Surveying and Levelling in planning. To understand basic Techniques of surveying and levelling, Types of survey, measurement of angles, computation of areas. 									
Learning Outcome:									
<p>LO-1: Understand the concept of measurement techniques as well as map and associated details.</p> <p>LO-2: Computation of ground profile using different levelling technique.</p> <p>LO-3: Estimation of area and volume by field measurement as well as using formula.</p> <p>LO-4: To locate and marking of buildings, roads, rails various features etc using method of Plane Table Survey and Theodolite Survey.</p>									
CONTENT & TEACHING UNITS									
Unit	Content								Hrs
A	<p>INTRODUCTION: Role of Civil Engineer in Surveying, Definition, Basic measurements, Scale and Mapping, Types of Maps and their uses, Map sheet numbers, Map projections, Principles of Surveying, Classification of Surveying, Division of Surveying, Control networks, Locating position and topographic detail.</p> <p>MODERN TOOLS OF SURVEYING AND MAPPING: Introduction to Global Positioning System, Remote Sensing and Geographic Information System. Total station.</p> <p>LINEAR MEASUREMENTS: Methods, Chain and Tapes Instruments used in chaining; Chain surveying, Ranging, Errors in chaining, Conventional symbols. Field work, Distance adjustment, Errors in taping, Accuracies.</p>								10

B	MEASUREMENT OF ANGLES: COMPASS: Types and uses of compass, Bearings, Whole Circle Bearings and Reduced Bearings, Computation of angles; Meridians & its related examples; THEODOLITE TRAVERSING: Introduction, Field procedure, Measurement of Horizontal and Vertical Angles, Method of Repetition, Method of Reiteration, Theodolite Traverse, Adjustment of traverse.	8
C	ELEVATION MEASUREMENTS: Levelling, object and uses, terms used in levelling, levelling instruments, methods of levelling, recording and methods of reducing, errors in levelling & examples related to levelling, contours; characteristics and applications.	8
D	PLANE TABLE SURVEY: Introduction, principle, instruments, setting up the plane table, methods of Plane tabling, advantages, sources of Errors.	8
E	CURVES: Introduction, theory and setting out methods of simple circular curve, elements of a compound and reverse curves, transition curve, types of transition curve, combined curve, types of vertical curves.	6
F	COMPUTATION OF AREAS: Methods to compute area of traverse- Determining areas from Plans, Trapezoidal rule- Simpson's rule, Use of planimeter	8

Text Books

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Reference Books

1	Chandra A.M. (2006). Plane Surveying (2nd ed.). New Delhi, India: New Age International Publishers
2	Ghosh J.K. (2010). Elementary Engineering Surveying. New Delhi, India: Stadium Press (India) Pvt.Ltd
3	Arora K. R., "Surveying and Levelling, Vol. I & II", Standard Publications, Delhi (2000).
4	Punmia B.C., "Surveying and Levelling, Vol. II & III", Laxmi Publications Pvt. Ltd., New Delhi (1994)
5	Rangwala (2018). Surveying and Leveling. Anand, India: Charotar
6	S. K. Duggal, "Surveying Vol. I and II," Tata McGraw hill Publication New Delhi