

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme		Bachelor of Technology			Branch/Spec.		Civil		
Semester		IV			Version		2.0.0.0		
Effective from Academic Year			2019-20		Effective for the batch Admitted in			July 2018	
Subject code		2CI402		Subject Name		Surveying			
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	03	00	01	00	04	Theory	40	60	100
Hours	03	00	02	00	05	Practical	30	20	50
Pre-requisites:									
Learning Outcome:									
After successful completion of the course, student will be able to:									
<ul style="list-style-type: none"> Understand the basic fundamentals about areas and volumes and also they will have the knowledge about various levelling methods. Know how the surveying work is going on actually on the field. They will be familiar with the different types of basic survey instruments in the laboratory which will be used in actual survey work. 									
Theory syllabus									
Unit	Content								Hrs
1.	Introduction: Introduction of plane table in detail, Introduction of Transit theodolite, Levelling instruments.								6
2.	Levelling: Definition, Calculation of RL , Methods of levelling, setting out levels, Curvature and Refraction, Distance to visible horizon, Contour, Temporary adjustment of level profile of ground, cross section of ground, applications of levelling in sewer line, road alignment, precise levelling, levelling errors.								8
3.	Computation Of Areas And Volumes: Areas from field measurements and plans, different methods, Trapezoidal and Simpson's rule, Planimeter. Volume by trapezoidal and Prismoidal formula, calculation of earthwork in cutting and embankment for civil engineering works, mass haul diagram, volume by spot levels, capacity of reservoir.								6
4.	Theodolite Survey: Introduction, types of theodolite, temporary relation between fundamental axis of theodolite, adjustment of theodolite, field operations with theodolite, theodolite traversing, latitude and departure, Gale's traverse table, omitted measurements in theodolite traversing, errors in theodolite traversing.								10
5.	Curve Surveying: Introduction, classification of curves, simple, compound and transition curves, methods of setting the curves, vertical curves.								6
6.	Construction Surveys: Introduction, setting out buildings, pipe lines and sewers, roads, bridges, piers.								5
7.	Hydrographic Surveys: Introduction, controls in hydrographic surveying, shore line survey, soundings, reduction in soundings, methods of locating and plotting of soundings.								4
8.	Total Station Introduction, applications, procedures and operation.								4
TOTAL								45	
Practical /Term Work									
This will consist of field practices with surveying instruments by various methods.									
Text Books									
1.	Dr. B.C. Punamia, Surveying Vol.I, II and III , Laxmi Publications Pvt Limited								
Reference Books									
1.	Dr. K. R. Arora, " Surveying and Levelling, Vol. I & II ", StandardPublications								

2.	Kanitkar&Kulkarni, " Surveying and Levelling, Vol. I & II ", VidyarthiGruhPrakashan.
3.	K. S. Duggal," Surveying and Levelling, Vol. I & II", TMH Edition.
4.	N.N. Basak ,Surveying and Levelling ,Tata McGraw-Hill Education
5.	R. Agor ,Surveying and Levelling, Khanna publishers
6.	R. Agor ,Advanced Surveying , Khanna publishers
7.	Roy, S.K., Fundamentals of Surveying, Prentice Hall India, New Delhi
8.	Subramanian, R., Surveying and Leveling, Oxford University Press, New Delhi
ICT/MOOCs	
1.	http://nptel.iitm.ac.in/courses/Webcourse-contents/IITROORKEE/
2.	SURVEYING/home.htm
3.	http://nptel.iitm.ac.in/video.php?subjectId=105104101
4.	http://nptel.iitm.ac.in/courses.php?branch=Civil