SURVEYING LAB

Academic Year (2021-22)

II-B. Tech – II Semester

Mr. SP Raju, Assistant Professor /

A. Prakash, Assistant Professor

Department of Civil Engineering

Gokaraju Rangaraju

Institute of Engineering and Technology

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

Course File Check List

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Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

GR20 Regulations

Prerequisite: Surveying Course Objectives:

1. Introduction to the applicability of basic survey instruments.
2. Skill of determining relative positions in land surveying.
3. Visualization of elevations, areas and volumes.
4. Skill of plotting existing geographical surface information.
5. Knowledge to judge the compatibility of instruments.

Course Outcomes:

1. Define the characteristics and applications of basic survey instruments.
2. Apply knowledge of mathematics, science and engineering in land measurement techniques.
3. Calculate distances, inclinations, elevations, areas and volumes.
4. Generate maps of earth surfaces.
5. Analysing the data and transfer relevant points onto ground.

Task-1: (i) Measurement of an area by Chain Survey (Open and Closed Trave

(ii) Study of Topo sheets

Task-2: Chaining across obstacles (Three Exercises).

Task-3: Simple, fly, Differential Levelling.

Task-4: Study of Theodolite- Measurement of horizontal and vertical angles-

(Repetition and Reiteration method).

Task-5: Trigonometric Levelling- Heights and distances problems.

Task-6: Calculation of R.L and distance using tachometric survey.

Task-7: Curve setting by any two methods.

Task-8: Determine the area of the field by using Total Station.

Task-9: Column and foundation marking using Total Station.

Task-10: (i) Distance, gradient, differential height between two inaccessible points using Total Station.

(ii) GPS Hand Application

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Department of Civil Engineering

Surveying Lab

II BTech (GR-18) - II Semester AY: 2021-22 w.e.f : 07 March 2022

Day/Time	**08:50-9:40**	**9:40-10:30**	**10:30-11:20**	**11:20-12:00**	**12:00-12:55**	**12:55-1:50**	**01:50-2:45**
Sunday				Lunch Break			
Monday							
Tuesday							
Wednesday	SURVEY LAB (A2)						
Thursday							
Friday	SURVEY LAB (A1)						
Saturday							

Course Code	Course Short Form	Course Name	Faculty name (ShortCode:Staff ID
GR20A2020	Surv. Lab	Surveying Lab	Mr.Siva Prasad Raju (Mr.SPR-840) / Mr.A.Prakash (Mr.AP-1502) / Mrs. P S R P S S S Vardhani (Mrs-PV-18048)

Lab Incharge HOD

Mr.Siva Prasad Raju Dr. C. Lavanya

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Department of Civil Engineering

Surveying Lab

B. Tech Programme Educational Objectives (PEOs)

1. Graduates of the program will be successful in technical and professional career of varied sectors of Civil Engineering.
2. Graduates of the program will have proficiency to analyse and design real time Civil Engineering projects.
3. Graduates of the program will exhibit management and leadership qualities with good communication skills facilitating to work in a multidisciplinary team.
4. Graduates of the program will continue to engage in life-long learning with ethical and social responsibility.

B. Tech Programme Outcomes (POs)

a. Graduates of the Civil Engineering programme will be able to
Apply knowledge of mathematics, science and fundamentals of Civil Engineering.

b. Analyse problem and interpret the data.

c. Design a system component, or process to meet desired needs in Civil Engineering within realistic constraints.
d. Identify, formulate, analyse and interpret data to solve Civil Engineering problems.
e. Use modern engineering tools such as CAD and GIS for the Civil Engineering practice.
f. Understand the impact of engineering solutions in a global, economic and societal context.
g. Understand the effect of Civil Engineering solutions on environment and to demonstrate the need for sustainable development.
h. Understanding of professional and ethical responsibility.
i. Work effectively as an individual or in a team and to function on multi-disciplinary context.
j. Communicate effectively with engineering community and society.
k. Demonstrate the management principles in Civil Engineering projects.
l. Recognize the need for and an ability to engage in life-long learning.

B. Tech Programme Specific Outcomes (PSOs)

1. Recognize the need for a sustainable environment and design smart infrastructure considering the global challenges.
2. Create and develop innovative designs with new era materials through research and development.

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Department of Civil Engineering

Surveying Lab

COURSE OBJECTIVES

Academic Year :2021-22 Semester- II

Name of the Program: B. Tech Year: II Section: A

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

On completion of this Subject/Course the student shall be able to:

S. No	Course Objectives
1	Introduction to the applicability of basic survey instruments.
2	Skill of determining relative positions in land surveying.
3	Visualization of elevations, areas and volumes.
4	Skill of plotting existing geographical surface information.
5	Knowledge to judge the compatibility of instruments

Signature of HOD Signature of faculty

Date: Date:

Note: Please refer to Bloom's Taxonomy, to know the illustrative verbs that can be used to state the objectives.

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

COURSE OUTCOMES

Academic Year :2021-22 Semester- II

Name of the Program: B. Tech Year: II Section: A

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

On completion of this Subject/Course the student shall be able to:

S. No	Course Outcomes
1	Define the characteristics and applications of basic survey instruments.
2	Apply knowledge of mathematics, science and engineering in land measurement Techniques
3	Calculate distances, inclinations, elevations, areas and volumes
4	Generate maps of earth surfaces
5	Analyzing the data and transfer relevant points onto ground.

Signature of HOD Signature of faculty

Date: Date:

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

S.No	Reg No	Student Name
1	20241A0101	AADHI SRIKAR RAO
2	20241A0102	ABHIRAM SAI YADAV JANGITI
3	20241A0103	BACCHUGUDAM RITHVIK REDDY
4	20241A0104	BANDLA NAVEEN
5	20241A0105	B.PRANAV SAI
6	20241A0106	BHATTU SUPREETH CHAKRAVARTHY
7	20241A0107	BHUPATHIRAJU HIMANTHAVARMA
8	20241A0108	BOINI HEMANTH
9	20241A0109	CHALLA AJAY KUMAR
10	20241A0110	DONABOINA SRI HARI
11	20241A0111	EPPA ARNAV
12	20241A0112	G L N RAGHURAMAN
13	20241A0113	GANDLA HARSHITH KUMAR
14	20241A0114	GUGGILLA SHASHANK
15	20241A0115	GUNDA SRIKANTH
16	20241A0116	JANGILI SRAVAN KUMAR
17	20241A0117	JANJIRALA SRUTHI
18	20241A0118	JARAPULA JAYANTH
19	20241A0119	K NIKHITHA
20	20241A0121	K.KONDAL
21	20241A0122	KAMMAMPATI UDAYKIRAN
22	20241A0123	KARNE SRITHAN
23	20241A0124	KUNCHALA VARUN KUMAR
24	20241A0125	KUNTA NITHIN REDDY
25	20241A0126	M PAVAN KALYAN
26	20241A0127	MERE MAHESH
27	20241A0128	MOHAMMED AHMED
28	20241A0129	MOTHUKURI LAXMAN
29	20241A0130	MOTTADI ADITYA TEJA

30	20241A0131	MULA SUSHMA SRI
31	20241A0132	NAYINI SWETHA
32	20241A0133	PAIDIPALLY BHARATH
33	20241A0134	P.SAI KIRAN REDDY
34	20241A0135	PASNOOR PAVAN PRATHAP REDDY
35	20241A0136	PATHLAVATH SHIVA NAYAK
36	20241A0137	PEDDIBOINA ANUSHA
37	20241A0138	POREDDY ABHINAV REDDY
38	20241A0139	PULLAGURA SANTHOSH
39	20241A0140	RACHALA BHARATH
40	20241A0141	RADHARAPU SHAJI KUMAR
41	20241A0142	RAMAVATH ROJA
42	20241A0143	RATHLAVATH SAIRAM NAYAK
43	20241A0144	RAVI TEJA PASUNUTHI
44	20241A0146	SADDI SHRIANK REDDY
45	20241A0147	SATHVIKA NARLA
46	20241A0148	SOKKULA KOUSHIKREDDY
47	20241A0149	SRIRAM PANDAVULA
48	20241A0150	T.BHARGAVI
49	20241A0151	T.BHUVANESHWARI
50	20241A0152	S.TEJA RETIESH REDDY
51	20241A0153	TEJAVATH KALYANI
52	20241A0154	TELLAPURAM PRUDHVI RAJ
53	20241A0155	THADEM ROHITH
54	20241A0156	THUMMALA RAJASHEKAR
55	20241A0157	UVSGR KAMESWARA SAI KARTHIK
56	20241A0158	SREERAM VATTEM
57	20241A0159	V VIKESH
58	20241A0160	VENNAM SRIKAR
59	21245A0101	GUMADAVELLI ARUN KUMAR
60	21245A0102	KADIRABAD SRIRAM
61	21245A0103	MANIKONDA NIKITHA
62	21245A0104	PARIDULA PRATHYUSHA
63	21245A0105	PATERU MOUNA

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Department of Civil Engineering

Surveying Lab

GUIDELINES TO STUDY THE COURSE SUBJECT

Academic Year :2021-22 Semester- II

Name of the Program: B. Tech Year: II Section: A

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Guideline to study the course/subject: Surveying Lab

This course helps the students to learn and understand, with the concept of "Surveying." We used different types of surveying instruments like Chains, Dumpy levels, Theodolites and advanced equipment like Total Station for surveying purpose.

So, the students should have the following prerequisites:

1. Basic knowledge of mathematics, science, engineering
2. Ability to perform exercise as well as analyse and interpret data.

Where will this subject help?

1. To calculate areas, volumes for a given field.
2. For road constructions and building constructions
3. To find out the heights and distances.

Signature of HOD Signature of faculty
Date: Date:

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

BOOKS AND MATERIALS

Text Books	
1	Surveying Lab Manual
2	Surveying by B C Punia
3	Surveying by R K Bansal

Suggested/Reference Books	
4.	**Surveying Vol-1(15thedition,2015) Paperback – 2015**by **Dr.K.R. Arora**
5.	Surveying- Vol. 1 by Duggal

Web Sites	
6.	**https://www.youtube.com/watch?v=chhuq_t40rY&list=PL20A0651466E8A776** **https://www.youtube.com/watch?v=KChbYLjW40Qhttps://www.youtube.com/watch?v=v8HpoVHBhho**

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Department of Civil Engineering

Surveying Lab

COURSE DESIGN AND DELIVERY SYSTEM(CDD)

- The Course syllabus is written in to number of learning objectives and outcomes.
- These learning objectives and outcomes will be achieved through lectures, assessments, assignments, experiments in the laboratory, projects, seminars, presentations, etc.
- Every student will be given an assessment plan, criteria for assessment, scheme of evaluation and grading method.
- The Learning Process will be carried out through assessments of Knowledge, Skills and Attitude by various methods and the students will be given guidance to refer to the text books, reference books, journals, etc.

The faculty be able to–

- Understand the principles of Learning
- Understand the psychology of students
- Develop instructional objectives for a given topic
- Prepare course, unit and lesson plans
- Understand different methods of teaching and learning
- Use appropriate teaching and learning aids
- Plan and deliver lectures effectively
- Provide feedback to students using various methods of Assessments and tools of Evaluation
- Act as a guide, advisor, counsellor, facilitator, motivator and not just as a teacher alone

Signature of HOD Signature of faculty
Date:

Gokaraju Rangaraju Institute of Engineering and Technology

S.No	Date	Description	NO. PERIODS	Bloom's Toxonomy	Objectives & Outcomes No
1	03-09-2022	Introduction to Surveying	3	K2	CO:1 & COB:1
2	03-11-2022	Introduction to different survey Instruments.	3	K2	CO:1 & COB:1
3	16/3/2022	Determination of an area of the given field by Open Traverse Method	3	K4	CO:1 & COB:1
4	18/3/2022	Determination of an area of the given field by Closed Traverse Method	3	K4	CO:1 & COB:1
5	23/3/2022	Chaining Across Obstacles	3	K3	CO:1 & COB:1
6	25/3/2022	Chaining Across Obstacles	3	K4	CO:1 & COB:1
7	30/3/2022	Determination of distance between two inaccessible points with compass.	3	K4	CO:2 & COB:2
8	04-01-2022	Determination of area and Included angles using Compass.	3	K3	CO:2 & COB:2
9	04-06-2022	Determination of area and Included angles using Compass.	3	K4	CO:2 & COB:2
10	04-08-2022	Simple Leveling	3	K4	CO:4 & COB:4
11	13/4/2022	Fly Leveling	3	K4	CO:4 & COB:4
12	15/4/2022	Differential Leveling	3	K4	CO:4 & COB:4
13	20/4/2022	Exercise of L.S, C.S and plotting.	3	K4	CO:4 & COB:4
14	22/4/2022	Exercise of L.S, C.S and plotting.	3	K4	CO:4 & COB:4
15	27/4/2022	Introduction to theodolite	3	K4	CO:1,2&COB:1,3
16	29/4/2022	Measurement of Horizontal Angles	3	K4	CO:1,2&COB:1,3
17	05-04-2022	Measurement of Vertical Angles	3	K4	CO:1,2&COB:1,3
18	05-06-2022	Trigonometric levelling (Height of the tower when base is accessible)	3	K4	CO:1,2&COB:1,3
19	05-11-2022	Trigonometric levelling (Height of the tower when base is Inaccessible)	3	K4	CO:1,2&COB:1,3
20	13/5/2022	Determination of Tachometric constants using Theodolite.	3	K3	CO:1,2&COB:1,3
21	18/5/2022	Determining the R.L of staff station : Line of sight is horizontal, staff held vertical	3	K4	CO:1,2&COB:1,3
22	20/5/2022	Line of sight is inclined, staff held vertical a) Elevation	3	K4	CO:1,2&COB:1,3
23	25/5/2022	Line of sight is inclined, staff held vertical b) Depression	3	K2	CO:1,2&COB:1,3
24	27/5/2022	Setting out a simple circular curve by offsets from tangents – method	3	K4	CO:1,2&COB:1,3
25	06-01-2022	Setting out a simple circular curve by offsets from long chord-method	3	K4	CO:1,2&COB:1,3
26	06-03-2022	Area of Traverse using Total station, Height of the building using REM in Total Station	3	K4	CO:4&COB:5
27	06-08-2022	Distance, gradient, differential height between two inaccessible points using Total station	3	K3	CO:4&COB:5
28	06-10-2022	GPS Hand Application	3	K4	CO:4&COB:5
29	15/6/2022	GPS Hand Application	3	K4	CO:4&COB:5
30	17/6/2022	Study of Toposheets	3	K4	CO:4&COB:5
31	22/6/2022	Study of Toposheets	3	K4	CO:1,2&COB:1,3
32	24/6/2022	Revision	3	K4	CO:1,2&COB:1,3
33	06-01-2022	Revision	3	K4	CO:1,2&COB:1,3
34	06-01-2022	Revision	3	K4	CO:1,2&COB:1,3

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 11-03-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:1 Duration of Lesson:3hrs

Lesson Title: Introduction to different survey Instruments.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to know various instruments available for survey
2. They understand the uses necessity various instruments

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Explaining the available list of survey instruments
2. Demonstration of different survey instruments
3. Explaining how to use all the instruments

Assignment/Questions:

1. List the various Surveying Instruments.

(CO:1&COB:1)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 18-03-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

LessonNo:2 Duration of Lesson:3hrs

Lesson Title: Determination of an area of the given field by Open and Closed Traverse Method

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They understand how to survey a field using chain surveying by open traverse method
2. They able to calculate the area of the given field after the survey

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Explaining how to carryout open traverse survey in the field in order to measure area of the given field
2. Explanation of calculation of area and how to eliminate the errors, if any

Assignment/Questions:

1. What is open Traversing.

(CO:1&COB:1)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 25-03-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

LessonNo:3 Duration of Lesson:3hrs

Lesson Title: Chaining across obstacles

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to measure width of pond when both chaining and ranging are obstacle
2. They able to measure width of river when chaining is obstacle

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Explaining how to carryout in order to measure width of the pond
2. Explanation of calculation of width of pond or River

Assignment/Questions:

1. What are different types of Surveying? (CO:1&COB:1)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:01/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:4 Duration of Lesson:3hrs

Lesson Title: Determination of distance between two inaccessible points with compass.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to survey the field using compass in order to find the distance between two inaccessible points.
2. They learn how to take the angular measurements
3. They learn how to distribute the errors and how to eliminate the errors, if any.

TEACHING AIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of the instrument, how to take the angles.
2. Explanation of temporary adjustments like centering and levelling.
3. Explanation of calculation part for determining the distance between to inaccessible points

Assignment/Questions:

1. Write about the different terms in Compass Surveying. (CO:2&COB:2)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:08/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:5 Duration of Lesson:3hrs

Lesson Title: Determination of area and Included angles using Compass.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to survey the field using compass in order to find the area of the given field and also the included angles
2. They learn how to take the angular measurements
3. They learn how to distribute and how to eliminate the errors, if any.

TEACHING AIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1.Demonstration of the instrument, how to take the angles.

2.Explanation of temporary adjustments like centering and levelling.

3.Explanation of calculation part for determining the included angles and area.

Assignment/Questions:

1 What is the principle of compass surveying?

(CO:2&COB:2)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:15/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:6 Duration of Lesson:3hrs

Lesson Title: Simple, Fly and Differential Levelling

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to survey the field using Auto level or Dumpy level by the method of fly levelling
2. They learn what are the temporary adjustments need to be done.
3. They learn the how to take the levels of the ground under different conditions.

TEACHING AIDS: White Board, Marker, Manual, Demonstration

1. Demonstration of the instrument, how to take the levels.
2. Explanation of temporary adjustments like centering and levelling
3. Explanation of calculation part for the experiment

TEACHING POINTS :

Assignment/Questions:

1. What are the different methods of levelling?
2. What are the different Types of Levels available?

(CO:4&COB:4)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:22/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:7 Duration of Lesson:3hrs

Lesson Title: Exercise of L.S, C.S and plotting.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to survey the field using Auto level and Dumpy level.
2. They learn what are the temporary adjustments need to be done

TEACHING AIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of the instrument, how to take the Longitudinal and cross section levels of the road
2. Explanation of temporary adjustments like centering and levelling
3. Explanation of calculation part for the experiments done.

Assignment/Questions:

1.What are different methods of finding the elevation. (CO:4&COB:4)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:29/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:8 Duration of Lesson:3hrs

Lesson Title: Introduction to theodolite

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to Introduction to theodolite & parts of theodolite.
2. They learn what are the temporary adjustments need to be done.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of the Introduction to theodolite & explain about parts of theodolite.
2. Explain about the face left and face right readings.

Assignment/Questions:

1. Explain about left swing and right swing of theodolite.

(CO:1,2&COB:1,3)

Signature of faculty

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Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:06/05/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:9 Duration of Lesson:3hrs

Lesson Title: Measurement of Horizontal and Vertical Angles

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They understand how to Measurement of horizontal angles by repetition method & reiteration method

2. They able to calculate the angle of the given points after the survey

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Explaining how to Measurement of horizontal angles by repetition method & reiteration method

2. Explanation of calculation of angle and how to eliminate the errors, if any

Assignment/Questions:

1. Explain the differences between auto level and theodolite.

(CO:1,2&COB:1,3)

Signature of faculty

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Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:13/05/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:10 Duration of Lesson:3hrs

Lesson Title: Trigonometric levelling (Height of the tower when base is Accessible and Inaccessible)

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to Trigonometric levelling
   (i) Height of the tower when base is accessible
   (ii) Height of the tower when base is inaccessible

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

Explanation of different types of Trigonometric levelling (i) Height of the tower when base is accessible (ii) Height of the tower when base is inaccessible.

Assignment/Questions:

1. What is line of collimation.

(CO:1,2&COB:1,3)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 20-05-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:11 Duration of Lesson:3hrs

Lesson Title: Setting out a simple circular curve by offsets from Tangents – method and Long chord- method

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

2. They able to Setting out a simple circular curve by offsets from tangents – method
3. They learn how to Setting out a simple circular curve by offsets from tangents – method
4. They learn how to distribute and how to eliminate the errors, if any.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of Setting out a simple circular curve by offsets from tangents-method
2. Explanation of Setting out a simple circular curve by offsets from tangents-method
3. Explanation of calculation Setting out a simple circular curve by offsets from tangents-method

Assignment/Questions:

1. List the various types of curves.

(CO:1,2&COB:1,3)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSONPLAN

Academic Year :2021-22 Date: 27-05-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:12 Duration of Lesson:3hrs

Lesson Title: Introduction to Total station.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to Introduction to Total station & Operational procedure of Total station
2. They learn what are the temporary adjustments need to be done.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

3. Demonstration of Introduction to Total station & Operational procedure of Total station
4. Explanation of Introduction to Total station & Operational procedure of Total station

Assignment/Questions:

1. What is the operational procedure of Total Station.

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 03-06-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:13 Duration of Lesson:3hrs

Lesson Title: Area of Traverse using Total station

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to Area of Traverse using Total station
2. They learn Area of Traverse using Total station

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of Area of Traverse using Total station
2. Explanation of an Area of Traverse using Total station

Assignment/Questions:

1. What is open traverse and closed traverse.

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 10-06-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:14 Duration of Lesson:3hrs

Lesson Title: Height of the building using REM in Total Station.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

2. They able to Height of the building using REM in Total Station
3. They learn Height of the building using REM in Total Station

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of height of the building using REM in Total Station
2. Explanation of Height of the building using REM in Total Station

Assignment/Questions:

1. How to find the elevation of top of the tower using REM

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 17-06-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A1

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:15 Duration of Lesson:3hrs

Lesson Title: Distance, gradient, differential height between two inaccessible points using Total station.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. They able to Distance, gradient, differential height between two inaccessible points using Total Station.
2. They learn what Distance, gradient, differential height between two inaccessible points using Total Station.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of Distance, gradient, differential height between two inaccessible points using Total Station
2. Explanation of Distance, gradient, differential height between two inaccessible points using Total Station

Assignment/Questions:

1. using missing line measurement method find distance between two inaccessible points

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 09-03-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:1 Duration of Lesson:3hrs

Lesson Title: Introduction to different survey Instruments.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They able to know various instruments available for survey
4. They understand the uses necessity various instruments

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

4. Explaining the available list of survey instruments
5. Demonstration of different survey instruments
6. Explaining how to use all the instruments

Assignment/Questions:

1. List the various Surveying Instruments.

(CO:1&COB:1)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 16-03-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

LessonNo:2 Duration of Lesson:3hrs

Lesson Title: Determination of an area of the given field by Open and Closed Traverse Method

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They understand how to survey a field using chain surveying by open traverse method
4. They able to calculate the area of the given field after the survey

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Explaining how to carryout open traverse survey in the field in order to measure area of the given field
2. Explanation of calculation of area and how to eliminate the errors, if any

Assignment/Questions:

1. What is open Traversing.

(CO:1&COB:1)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 23-03-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

LessonNo:3 Duration of Lesson:3hrs

Lesson Title: Chaining across obstacles

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They able to measure width of pond when both chaining and ranging are obstacle
4. They able to measure width of river when chaining is obstacle

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Explaining how to carryout in order to measure width of the pond
2. Explanation of calculation of width of pond or River

Assignment/Questions:

1. What are different types of Surveying? (CO:1&COB:1)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 30/03/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:4 Duration of Lesson:3hrs

Lesson Title: Determination of distance between two inaccessible points with compass.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

4. They able to survey the field using compass in order to find the distance between two inaccessible points.
5. They learn how to take the angular measurements
6. They learn how to distribute the errors and how to eliminate the errors, if any.

TEACHING AIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1. Demonstration of the instrument, how to take the angles.
2. Explanation of temporary adjustments like centering and levelling.
3. Explanation of calculation part for determining the distance between to inaccessible points

Assignment/Questions:

1. Write about the different terms in Compass Surveying. (CO:2&COB:2)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:06/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:5 Duration of Lesson:3hrs

Lesson Title: Determination of area and Included angles using Compass.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

4. They able to survey the field using compass in order to find the area of the given field and also the included angles
5. They learn how to take the angular measurements
6. They learn how to distribute and how to eliminate the errors, if any.

TEACHING AIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

1.Demonstration of the instrument, how to take the angles.

2.Explanation of temporary adjustments like centering and levelling.

3.Explanation of calculation part for determining the included angles and area.

Assignment/Questions:

1 What is the principle of compass surveying?

(CO:2&COB:2)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:13/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:6 Duration of Lesson:3hrs

Lesson Title: Simple, Fly and Differential Levelling

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

4 They able to survey the field using Auto level or Dumpy level by the method of fly levelling
5. They learn what are the temporary adjustments need to be done.
6. They learn the how to take the levels of the ground under different conditions.

TEACHING AIDS: White Board, Marker, Manual, Demonstration

4. Demonstration of the instrument, how to take the levels.
5. Explanation of temporary adjustments like centering and levelling
6. Explanation of calculation part for the experiment

TEACHING POINTS :

Assignment/Questions:

3. What are the different methods of levelling?
4. What are the different Types of Levels available?

(CO:4&COB:4)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:20/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:7 Duration of Lesson:3hrs

Lesson Title: Exercise of L.S, C.S and plotting.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They able to survey the field using Auto level and Dumpy level.
4. They learn what are the temporary adjustments need to be done

TEACHING AIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

4. Demonstration of the instrument, how to take the Longitudinal and cross section levels of the road
5. Explanation of temporary adjustments like centering and levelling
6. Explanation of calculation part for the experiments done.

Assignment/Questions:

1.What are different methods of finding the elevation. (CO:4&COB:4)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:27/04/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:8 Duration of Lesson:3hrs

Lesson Title: Introduction to theodolite

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They able to Introduction to theodolite & parts of theodolite.
4. They learn what are the temporary adjustments need to be done.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

6. Demonstration of the Introduction to theodolite & explain about parts of theodolite.
7. Explain about the face left and face right readings.

Assignment/Questions:

1. Explain about left swing and right swing of theodolite.

(CO:1,2&COB:1,3)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:04/05/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:9 Duration of Lesson:3hrs

Lesson Title: Measurement of Horizontal and Vertical Angles

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They understand how to Measurement of horizontal angles by repetition method & reiteration method

4. They able to calculate the angle of the given points after the survey

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

3. Explaining how to Measurement of horizontal angles by repetition method & reiteration method
4. Explanation of calculation of angle and how to eliminate the errors, if any

Assignment/Questions:

1. Explain the differences between auto level and theodolite.

(CO:1,2&COB:1,3)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date:11/05/2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:10 Duration of Lesson:3hrs

Lesson Title: Trigonometric levelling (Height of the tower when base is Accessible and Inaccessible)

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

5. They able to Trigonometric levelling
   (iii) Height of the tower when base is accessible
   (iv) Height of the tower when base is inaccessible

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

Explanation of different types of Trigonometric levelling (iii) Height of the tower when base is accessible (iv) Height of the tower when base is inaccessible.

Assignment/Questions:

1. What is line of collimation.

(CO:1,2&COB:1,3)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 18-05-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:11 Duration of Lesson:3hrs

Lesson Title: Setting out a simple circular curve by offsets from Tangents – method and Long chord- method

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

6. They able to Setting out a simple circular curve by offsets from tangents – method
7. They learn how to Setting out a simple circular curve by offsets from tangents – method
8. They learn how to distribute and how to eliminate the errors, if any.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

4. Demonstration of Setting out a simple circular curve by offsets from tangents-method
5. Explanation of Setting out a simple circular curve by offsets from tangents-method
6. Explanation of calculation Setting out a simple circular curve by offsets from tangents-method

Assignment/Questions:

1. List the various types of curves.

(CO:1,2&COB:1,3)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSONPLAN

Academic Year :2021-22 Date: 25-05-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:12 Duration of Lesson:3hrs

Lesson Title: Introduction to Total station.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They able to Introduction to Total station & Operational procedure of Total station
4. They learn what are the temporary adjustments need to be done.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

8. Demonstration of Introduction to Total station & Operational procedure of Total station
9. Explanation of Introduction to Total station & Operational procedure of Total station

Assignment/Questions:

1. What is the operational procedure of Total Station.

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSONPLAN

Academic Year :2021-22 Date: 01-06-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:13 Duration of Lesson:3hrs

Lesson Title: Area of Traverse using Total station

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They able to Area of Traverse using Total station
4. They learn Area of Traverse using Total station

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

3. Demonstration of Area of Traverse using Total station 4. Explanation of an Area of Traverse using Total station

Assignment/Questions:

4. What is open traverse and closed traverse.

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSONPLAN

Academic Year :2021-22 Date: 08-06-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:14 Duration of Lesson:3hrs

Lesson Title: Height of the building using REM in Total Station.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

5. They able to Height of the building using REM in Total Station
6. They learn Height of the building using REM in Total Station

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

3. Demonstration of height of the building using REM in Total Station
4. Explanation of Height of the building using REM in Total Station

Assignment/Questions:

1. How to find the elevation of top of the tower using REM

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

LESSON PLAN

Academic Year :2021-22 Date: 15-06-2022

Name of the Program: B. Tech Year: II, Semester- II Section: A2

Course /Subject : Surveying Lab CourseCode:GR20A2020

Name of the Faculty: Mr. SP Raju and A. Prakash

Designation: Assistant Professor Department: Civil Engineering

Lesson:15 Duration of Lesson:3hrs

Lesson Title: Distance, gradient, differential height between two inaccessible points using Total station.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

3. They able to Distance, gradient, differential height between two inaccessible points using Total Station.
4. They learn what Distance, gradient, differential height between two inaccessible points using Total Station.

TEACHINGAIDS: White Board, Marker, Manual, Demonstration

TEACHING POINTS :

3. Demonstration of Distance, gradient, differential height between two inaccessible points using Total Station
4. Explanation of Distance, gradient, differential height between two inaccessible points using Total Station

Assignment/Questions:

1. using missing line measurement method find distance between two inaccessible points

(CO:4&COB:5)

Signature of faculty

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

SURVEYING LAB SESSION PLAN

S.No	Date		Description
	Batch - A1	Batch - A2	
1	11-03-2022	09-03-2022	Introduction to Surveying and different survey Instruments.
2	18-03-2022	16-03-2022	Determination of an area of the given field by Open and Closed Traverse Method
3	25-03-2022	23-03-2022	Chaining Across Obstacles
4	01-04-2022	30-03-2022	Determination of distance between two inaccessible points with compass.
5	08-04-2022	06-04-2022	Determination of area and Included angles using Compass.
6	15-04-2022	13-04-2022	Simple, Fly and Differential Leveling
7	22-04-2022	20-04-2022	Exercise of L.S, C.S and plotting.
8	29-04-2022	27-04-2022	Introduction to theodolite
9	06-05-2022	04-05-2022	Measurement of Horizontal and Vertical Angles
10	13-05-2022	11-05-2022	Trigonometric levelling (Height of the tower when base is Accessible and Inaccessible)
11	20-05-2022	18-05-2022	Setting out a simple circular curve by offsets from Tangents – method and Long chord- method
12	27-05-2022	25-05-2022	Introduction to Total station
13	03-06-2022	01-06-2022	Area of Traverse using Total station
14	10-06-2022	08-06-2022	Height of the building using REM in Total Station
15	17-06-2022	15-06-2022	Distance, gradient, differential height between two inaccessible points using Total station
16	24-06-2022	22-06-2022	Lab Internal Examination

Gokaraju Rangaraju Institute of Engineering and Technology
Department of Civil Engineering

Surveying Lab

EVALUATIONSTRATEGY

1. TARGET:
   a) Percentageforpass:100%
   b) Percentageofclass:

Firstclasswithdistinction	40
Firstclass	15
Passclass	8
Totalstrength	63

2. COURSEPLAN&CONTENTDELIVERY

- 87to102practiceclassesheldfordetaileddemonstrationofexperimentsandforanalyzingrealtimeexperiments in the lab.

3. METHODOFEVALUATION

☐ 3.1 ContinuousAssessmentExaminations(CAE-I,CAE-I)

☐ 3.2 Assignments/Seminars

☐ 3.3 MiniProjects

☐ 3.4 Quiz

☐ 3.5 Semester/EndExamination

☐ 3.6 Others

4. Listoutanynewtopic(s)oranyinnovationyouwouldliketointroduceinteachingthesubjectsinthisSemester.

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

Assessment in relation to CO's and COB's

Assessment:

1. Assignment
2. InternalExamination
3. ExternalExamination
4. PracticalProjects
5. Viva

CourseOutcomes / **Assessments**	1	2	3	4	5
1	x		x		
2		x			x
3			x	x	
4		x			x
5	x				

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Surveying Lab

Rubrics

Objectives: To learn theory and practical aspects of Surveying Lab

		Beginning	Developing	Reflecting Development	Accomplished	Exemplary	Score
Name of the Student	**Performance Criteria**	**1**	**2**	**3**	**4**	**5**	
20241A0127	Level of knowledge on fundamental concepts on basic mathematics.	Inability to perform fundamental laboratory tests or collect, analyze, or synthesize appropriate data	Able to collect, analyze, and synthesize data related to the experiment	Ability to observe collection of samples, perform fundamental laboratory tests, and collect, analyze, and synthesize appropriate data.	Knowledge on collection of Samples & independently perform fundamental laboratory tests, and collect, analyze, and synthesize appropriate data with few procedural errors	Full knowledge on Collection of soil samples, independently perform fundamental laboratory tests, and collect, analyze, and synthesize appropriate data with no procedural errors	
	Level of knowledge on properties of soil and assessment using appropriate Laboratory analysis.	Low level ofknowledgeo nsoilpropertie sandtherespec tivelaboratory analyses.	Able tounderstandth eimportanceof vitalsoilparam etersandeffecti ngfactors.	Ability to applytheknowle dgeofsoilproper tiesinchoosinga ppropriatelabor atoryanalysis	FullKnowledg eonproperties ofsoilandasses smentofvitalp arameters usinglabo ratory analyses.	Analyzing allpracticalaspec tsofsoilpropertie sandtheirkeyrole inthefield ofconstruction.	
	Level ofknowledgeo nstrengthpara metersofsoil and theirrealtimea pplications.	Low level ofknowledgeo nstrengthpara metersofsoil and theirrealtimea pplications.	Able tounderstandth estrengthparam etersofsoilunde rvariousloading conditions.	Ability to applytheknowle dgeinthedetermi nationofstrength parametersofsoi l	Fullknowledg eonstrengthpa rametersofsoi l and therespectivel aboratoryanal yses.	Analyzing theimportanceo fstrengthparam etersofsoilunde rvariousexisting conditionsand their respectiveappli cations.	

StudentsOutcomes: LearnapplicationsofdifferentSurveying LabandHandsonexperienceinresearch

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

CourseOutcomes-ProgramOutcomesrelations(PO's)RelationshipMatrix

ProgramOutcomes / CourseOutcomes	a	b	c	d	e	f	g	h	i	j	k	l
1	x	x		x						x		x
2	x	x		x			x					x
3	x	x		x		x		x				x
4	x	x			x			x	x	x		
5	x	x						x	x	x		x

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

Batch : A1 **Date :**

S.No	Reg No	Student Name	INTERNAL (30M)	EXTERNAL (70M)	Total (100M)	Grade Point	Result
1	20241A0101	AADHI SRIKAR RAO	14	38	52	6	Pass
2	20241A0102	ABHIRAM SAI YADAV JANGITI	6	15	21	3	Fail
3	20241A0103	BACCHUGUDAM RITHVIK REDDY	6	20	26	3	Fail
4	20241A0104	BANDLA NAVEEN	16	45	61	7	Pass
5	20241A0105	B.PRANAV SAI	3	15	18	2	Fail
6	20241A0106	BHATTU SUPREETH CHAKRAVARTHY	12	17	29	3	Fail
7	20241A0107	BHUPATHIRAJU HIMANTHAVARMA	6	30	36	4	Fail
8	20241A0108	BOINI HEMANTH	7	18	25	3	Fail
9	20241A0109	CHALLA AJAY KUMAR	6	30	36	4	Fail
10	20241A0110	DONABOINA SRI HARI	12	39	51	6	Pass
11	20241A0111	EPPA ARNAV	3	AB	AB	0	Fail
12	20241A0112	G L N RAGHURAMAN	17	44	61	7	Pass
13	20241A0113	GANDLA HARSHITH KUMAR	17	45	62	7	Pass
14	20241A0114	GUGGILLA SHASHANK	6	20	26	3	Fail
15	20241A0115	GUNDA SRIKANTH	16	45	61	7	Pass
16	20241A0116	JANGILI SRAVAN KUMAR	20	51	71	8	Pass
17	20241A0117	JANJIRALA SRUTHI	17	44	61	7	Pass
18	20241A0118	JARAPULA JAYANTH	19	52	71	8	Pass
19	20241A0119	K NIKHITHA	22	53	75	8	Pass
20	20241A0121	K.KONDAL	6	20	26	3	Fail
21	20241A0122	KAMMAMPATI UDAYKIRAN	21	50	71	8	Pass
22	20241A0123	KARNE SRITHAN	17	44	61	7	Pass
23	20241A0124	KUNCHALA VARUN KUMAR	14	47	61	7	Pass
24	20241A0125	KUNTA NITHIN REDDY	6	30	36	4	Fail
25	20241A0126	M PAVAN KALYAN	3	38	41	5	Pass
26	20241A0127	MERE MAHESH	24	60	84	9	Pass

27	20241A0128	MOHAMMED AHMED	10	31	41	5	Pass
28	20241A0129	MOTHUKURI LAXMAN	23	58	81	9	Pass
29	20241A0130	MOTTADI ADITYA TEJA	6	22	28	3	Fail
30	20241A0131	MULA SUSHMA SRI	17	45	62	7	Pass
31	20241A0132	NAYINI SWETHA	19	54	73	8	Pass

No. of students Present : ***Signature of Internal Examiner***
No. of students Absent : **1**
Total No. of Students: **2**

Signature of External Examiner

Signature of HOD

Gokaraju Rangaraju Institute of Engineering and Technology

Departmentof CivilEngineering

Surveying Lab

Question papers

1. A. Write a short note on Obstacle to chaining, Explain its Significance? (CO2)
   B. When there is restriction to chaining, determine the width of given obstacle, using chain surveying?

2. A. Explain its Significance of chain surveying in day to day life and mention its limitations
   B. By using chain surveying - closed traverse method, determine the area of given field (CO3)

3. A. Write the Advantages and Disadvantages of Total Station in day-to-day work
   B. Determination of distance between two inaccessible points with compass (CO3)

4. A. What is meant by Line of Collimation and Mention its importance in Longitudinal Levelling (CO4)
   B. For a given road stretch, determine the levels at a chain interval of 5m and draw the longitudinal profile.

5. A. What is meant by compass Surveying and list out various available compass
   B. With the help of a Prismatic compass, determine the area of given field (CO3)

6. A. Write a short note on REM and RDM in Total station (CO1)
   B. Determine the elevation of a point using principles of trigonometric levelling. (Base is Inaccessible)

7. A. What is meant by cross-sectional levelling and Explain its Significance?
   B. For a given road stretch, determine the longitudinal and cross-sectional levels at a chain interval of 5m and 2m respectively and draw the cross-sectional profile (CO4)

8. A. What is meant by Theodolite Surveying, Mention its importance?
   B. Determine the height of the building using Theodolite. (Base is accessible) (CO1)

9. A. What is the purpose of taking Both Face left and Face right condition in determining the angles
   B. Calculate the Angle between two station points using method of Repetition (CO2)

10. A. Draw the theodolite diagram (Rough Sketch) and mention its parts
    B. Set out a simple circular curve by means of a linear method. (R=30m ; Deflection angle= 60˚) (CO5)

11. A. What is the purpose of setting out a curve in Road designing aspects
    B. Calculate the area of open field using total station. (CO3)

12. A. Write a short note on REM and RDM in Total station
    B. Calculate the Angle between two stations points using method of Reiteration. (CO1)