



DAFFODIL POLYTECHNIC INSTITUTE, Institute Code: 50238

Lesson Plan, Academic Session : August 25 - January 26	
Subject Teacher	Md. Emon Khan
Subject Name	Surveying- 2
Subject Code	26444
Technology	Civil
Semester	4th
Reference Book	BTEB Surveying- 2 (Any Publication)
eLearning Course Link	https://dpi.df.daffodil.family/web#action=525&cids=1&id=227&menu_id=1839&model=slide.channel&view_type=form

The Grade System					
Marks	Grade Point	Letter Grade	Marks	Grade Point	Letter Grade
80>	4.00	A+	55-59	2.75	B-
75-79	3.75	A	50-54	2.50	C+
70-74	3.50	A-	45-49	2.25	C
65-69	3.25	B+	40-44	2.00	D
60-64	3.00	B	00-39	0.00	F
Mark Distribution					
26444	Surveying- 2		T	P	C
			2	3	2
Marks			100	50	150

Theory Continuous		Theory Final		
Mid-term exam	20%	Very short question	1*10	10%
Class test	06%	Short question	2*10	20%
Quiz test	04%	Broad question	6*5	30%
Presentation & Assignment	05%	Total		60%
Attendance	05%	NB. One option will give on broad question		
Total	40%			
NB. Above 90% of attendance-5%, 80% to 89%-4%, 70% to				

79%-3%, 60% to 69%-2%

Practical Continuous		Practical Final	
Job/ Experiment	25%	Job/ Experiment	30%
Homework	05%	Job/ Experiment report	10%
Job/ Experiment report	05%	Viva	10%
Viva	05%	Total	50%
Behavior	02%		
Attendance	08%		
Total	50%		

NB. Above 90% of attendance-5%, 80% to 89%-4%, 70% to 79%-3%, 60% to 69%-2%

Time Distribution	
Particular Time	
Greeting with students	5 Min
Previous class review	10 Min
Present class lecture	60 Min
Feedback	10 Min
Attendance	5 Min

Rational

Diploma Engineering graduate have to perform different kind of survey in their professional work. To acquire this ability student will learn Construction supervision; prepare planning, estimating & time scheduling. Evaluation & reporting of existing structure and land survey in this subject. They should have pre requisite knowledge, skills and attitude about surveying that will achieve by the SURVEYING – II.

Learning Outcome(Theoretical)

- After undergoing the subject, students will be able to
- Describe operating procedure of level and theodolite.
- State leveling work.
- Illustrate preparing method and uses of contour.
- State conducts traversing computation process and plotting with theodolite.
- State the process of horizontal and vertical distances of inaccessible points.

Learning Outcome (Practical)

- Illustrate Leveling.
- Identify the various types Survey Instruments.
- Identify the facilities of Digital Survey equipment.
- Find the elevation of different various points.
- Perform field leveling and contouring.
- Perform angle measurement of different points.
- Identify geo coordinate and uses in various types of survey.
- Perform traversing and accuracy checking of survey.

Lesson Plan

Lecture	Chapter/ Exam / Industrial Visit	Learning Area	Learning Outcome	Class/Lab Supporting Equipments
1	Chapter 1	BASIC CONCEPT OF LEVELING 1.1 Define Level and Leveling. 1.2 Mention the purposes of leveling. 1.3 State Level surface, Level line, Horizontal surface, horizontal line, Vertical plane & Vertical line.	- To know about level machine. - To know about leveling terms. - To know about bench mark. - To know how to use of bench mark.	https://www.youtube.com/watch?v=LoWjyMAKtBE - See the image from Google.
2	Chapter 1	1.4 State Mean Sea level, Datum surface, Datum line, reduced level and Formation level. 1.5 Define bench mark. 1.6 Describe different types of bench mark.		
Quiz Test- 01		Quiz on 1st chapter	To overcome the fearness of exam	After 2nd lec
3	Chapter 2	FEATURES AND APPLICATION METHOD OF LEVELING. 2.1 List the equipment and accessories required for leveling. 2.1 Mention the different types of level. 2.2 Point out the different parts of a level. 2.3 Explain Line of collimation, Axis of telescope, Axis of bubble tube, Vertical axis. 2.4 Explain Height of instrument, Diaphragm, line of collimation, Focusing, Parallax.	- To know about name of instrument used in leveling. - To know about leveling terms.	https://www.youtube.com/watch?v=1zW_mEx0E9w
4	Chapter 2	2.5 Describe the purposes of leveling staff. 2.6 Mention different types of leveling staff. 2.7 Describe the positions of setting up level. 2.8 State the procedure of holding a leveling staff. 2.9 Mention the procedure of taking staff reading.		
Class Test- 01		Class Test on 2nd Chapter	To overcome the fearness of exam	After 4th lec
5	Chapter 3	ADJUSTMENT OF LEVEL 3.1 State different types of adjustments of level. 3.2 Mention the different steps of temporary adjustment. 3.3 List the fundamental lines of level with relationship.	- To know about leveling staff also used. - To know about Temporary & per mental Adjustment.	https://www.youtube.com/watch?v=GUHWQUUnwIKQ
6	Chapter 3	3.4 Describe permanent adjustment of level. 3.5 Describe two peg test. 3.6 State the necessity of two peg test in leveling. 3.7 Solve the problems related to permanent adjustments of level.		
Assignment- 01		Assignment on Lecture 01 to 06	build up confidence level & increase creativity on chapter 1 to3	submit within next two lec.
7	Chapter 4	BOOKING OF STAFF READING AND REDUCTION OF LEVEL 4.1 Define back sight, foresight and intermediate sight reading, change point, negative staff reading and station.	- To know about different staff reading. - To know about leveling book also used level book. - To know about how to solve problem from taken data in the field.	https://www.youtube.com/watch?v=Vxm

		4.2 State the necessity of different types of level book. 4.3 Mention the procedure of booking of staff reading into level book. 4.4 Describe reduction of leveling.		eLzPMdXU • https://www.youtube.com/watch?v=Vxm eLzPMdXU
8	Chapter 4	4.5 Mention the methods of reduction of leveling 4.5 Compare between Height of Instrument and Rise and Fall Method. 4.6 Solve problems on reduction of leveling. 4.7 Solve problems on calculation of missing data of old level book.		
Lab Report- 01		PERFORM TWO-PEG TEST OF LEVELING		
9	Chapter 5	TYPES OF LEVELING 5.1 List different types of leveling. 5.2 State the purposes of fly leveling; profile leveling, cross sectioning, check leveling and reciprocal leveling. 5.3 Describe the procedure of fly leveling; profile leveling, Cross sectioning, check leveling and reciprocal leveling.	• To know about different types of leveling such as profile leveling, cross sectioning, check leveling and reciprocal leveling • To know about how to made longitudinal profile and cross profile.	• https://www.youtube.com/watch?v=i rNlaNP63nA • https://theco nstructor.org/surveying/types-of-level s-leveling-surveying/14690/
10	Chapter 5	5.4 Solve different problems on fly leveling; profile leveling, cross sectioning, check leveling and reciprocal leveling. 5.5 Describe the procedure of plotting long and cross-section of leveling works. 5.6 Prepare longitudinal profile and cross section profile from Given Data.		
Quiz Test- 02		Quiz on 5th chapter	To overcome the fearness of exam	After 10 lec
11	Chapter 6	OBSTACLES AND ERRORS IN LEVELING 6.1 Mention obstacles in leveling. 6.2 Explain the procedure of Ascending and descending a hill, Staff too nears the level, Staff too low or too high, Staff station above the line of collimation, Wall on the alignment. 6.3 List the instrumental and user's error in leveling. 6.4 Explain the effects of earth's curvature and refraction of light on leveling.	• To know about obstacles in leveling. • To know about effects of earth's curvature and refraction of light on leveling. • To know about how solve problem from taken data in the field.	• https://www.youtube.com/watch?v=XDF4Cgdb NHM • https://www.youtube.com/watch?v=XDF4Cgdb NHM
12	Chapter 6	6.5 Interpret the formula for earth curvature and refraction of light. 6.6 Solve problems on errors due to curvature and refraction. 6.7 Deduce the formula for distance to the visible horizon and dip of the horizon. 6.8 Solve problems on visible horizon and dip of the horizon. 6.9 State magnitude and permissible limits of closing error in leveling.		
Class Test- 02		Quiz on 6th chapter	To overcome the fearness of exam	After 7th lec

13	Chapter 7	ASPECTS OF CONTOURING AND MAPPING 7.1 Define contour, contouring, horizontal equivalent and vertical interval. 7.2 Mention the characteristics of contour. 7.3 Describe the uses of contour. 7.4 Mention the different methods of contouring. 7.5 State the procedure of different methods of contouring.		https://www.youtube.com/watch?v=iQTq2nWfjHs
14	Chapter 7	7.6 Explain interpolation of contour by estimation method. 7.7 Mention the procedure of drawing contour map of hill, reservoir, valley and pond. 7.8 Mention various uses of contour map. 7.9 State the procedure of locating the proposed route for a road, canal and drainage work.	- To know about Contour, contouring. - To know about how to used contouring.	
Assignment-2		Assignment on 7th chapter		submit within next two lec.
15	Chapter 8	BASIC CONCEPTS OF THEODOLITE 8.1 State different parts of theodolite. 8.2 Mention the functions of different parts of theodolite. 8.3 State the procedure of centering, Leveling, swing & Transiting of theodolite. 8.4 Describe different types of adjustment of theodolite	- To know about parts of theodolite. - To know about temporary adjustment also permanent adjustment.	https://www.youtube.com/watch?v=6yyMZSHCbCo
16	Chapter 8	8.5 State different steps of temporary adjustment of theodolite. 8.6 Describe the fundamental lines of theodolite. 8.7 Mention the relationship among the fundamental lines. 8.8 Describe the permanent adjustments of theodolite. 8.9 Describe Stadia rod and Tachometer. 8.10 Mention the uses of Stadia rod and Tachometer.		
Lab Report- 02		BASIC CONCEPTS OF THEODOLITE		
Mid-Term Exam				
17	Chapter 9	PRINCIPLES OF MEASURING ANGLE AND BEARING WITH THEODOLITE 9.1 Explain Geodetic co-ordinates, Bearing, True bearing, Magnetic bearing, Azimuth & Grid Azimuth. 9.2 State whole circle bearing & Reduced bearing. 9.3 Describe the procedure of measuring horizontal angles with theodolite. 9.4 Describe the procedure of measuring vertical angles.	To know about how to measured horizontal & vertical angles.	https://www.youtube.com/watch?v=Mb2jbdqMJHA
18	Chapter 9	9.5 Describe the procedure of measuring magnetic bearing of a line. 9.6 State polar star. 9.7 Describe the procedure of determining true bearing of a line by observing pole star.		
Quiz test- 03		Quiz on 9th chapter		

19	Chapter 10	APPLICATION OF TRIGONOMETRICAL LEVELING. 10.1 Explain the basic principle of trigonometric leveling. 10.2 Describe the method of measuring height when the object is accessible. 10.3 Deduce the formula for measuring height and horizontal distance when the object is at accessible in the case of object and the station are in different levels.		https://www.youtube.com/watch?v=gJI0kt1otxA https://www.youtube.com/watch?v=YLPR83xQ2Hw https://www.youtube.com/watch?v=j5hcKmU27I
20	Chapter 10	10.4 Deduce the formula for measuring height and horizontal distance when the object is inaccessible in the case of object and the station are in different levels. 10.5 Describe Barometric & Hypsometric leveling. 10.6 Solve problems on finding heights and distances.	To know about how to measured horizontal and vertical distance use theodolite. To know about trigonometrical ly leveling.	
Class Test- 03		Quiz on 10th chapter	To overcome the fearness of exam	
21	Chapter 11	PRINCIPLES OF TRAVERSE SURVEY 11.1 Explain traverse. 11.2 List the field works in theodolite traversing. 11.3 Describe the traversing by methods of included angles and deflection angle. 11.4 Explain checking of traverse.		https://www.youtube.com/watch?v=j5hcKmU27I https://www.youtube.com/watch?v=zRNnC-Tjz1w
22	Chapter 11	11.5 Explain the process of plotting a traverse. 11.6 Calculate the bearing from angles of traverse. 11.7 Compute the coordinates of a traverse. 11.8 Describe the Bowditch's rule and Transit rule. 11.9 Define Balancing of closed traverse.	- To know about theodolite traversing. - To know about plotting a traverse. - To know about Practical knowledge traverse.	
Assignment-3		Assignment on 11th chapter		submit within next two lec.
23	Chapter 12	PROBLEM AND THEIR SOLUTION IN TRAVERSING 12.1 Describe different types of problems in traversing. 12.2 State the sources of errors in theodolite work. 12.3 List the common mistakes in theodolite work	- To know about common mistake theodolite work. - To know about how to coordinate, double meridian	https://www.youtube.com/watch?v=j5hcKmU27I
24	Chapter 12	12.4 State the way to avoid errors & mistakes in theodolite Work. 12.5 Calculate the length and bearing of a missing side and any included angle of a traverse.		

		12.6 Compute the area of closed traverse by coordinate, latitude and double meridian, departure and total latitude methods.		
Lab Report- 03		PREPARE CONTOUR MAP AND CONDUCTING SPOT LEVELING OVER A HIGH ELEVATED AREA.		
Final Exam				