

ASIAN SCHOOL OF TECHNOLOGY, BHUBANESWAR

DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Discipline: Civil engineering	Semester:	No. of periods available: 51	Name of Teaching Faculty: Bisnupriya Jena
Subject: Building Construction	No. of Days/ per week class allotted : 4 periods per week		No. of weeks: 13
Week	Class Day		Topics to be covered
1 st	1 st	1	Surveying: Definition Aims and objectives
	2 nd	1	Principles of survey-Plane surveying- GeodeticSurveying- Instrumental surveying.
	3 rd	1	Precision and accuracy of measurements, instrumentsused for measurement of distance,
	4 th	1	Types of tapes and chains.
2 nd	5 th	1	Errors and mistakes in linear measurement –classification, Sources of errors and remedies.
	6 th	1	Corrections to measured lengths due to-incorrect length,temperature variation, pull, sag,
	7 th	1	numerical problem applying corrections
	8 th	1	CHAINING AND CHAIN SURVEYING: Equipment and accessories for chaining
3 rd	9 th	1	Ranging – Purpose, signaling, direct and indirect ranging,Line ranger – features and use, error due to incorrect ranging.
	10 th	1	Methods of chaining —Chaining on flat ground, Chainingon sloping ground — stepping method, Clinometer-features and use, slope correction Setting perpendicular with chain & tape, Chaining across different types ofobstacles — Numerical problems on chaining across

	1		obstacles
			obstacles Purpose of chain surveying, Its Principles, concept of fieldbook
	11 th	1	Selection of survey stations, base line, tie lines, Check
			Lines Offsets – Necessity, Perpendicular and Oblique offsets, Instruments for
			setting offset – Cross Staff, Optical Square.
	12 th	1	Errors in chain surveying – compensating andaccumulative errors causes &
4 th	13 th	1	remedies, Precautions to be taken during chainsurveying.
	14 th	1	ANGULAR MEASUREMENT AND COMPASSURVEYING: Measurement of angles with chain,
	15 th	1	Measurement of angles tape & compass
	16 th	1	Compass – Types, features,
		-	parts, merits & demerits,testing & adjustment of compass
5 th	17 th	1	Designation of angles- concept of meridians – Magnetic,True, arbitrary; Concept of bearings Whole circle bearing, Quadrantal bearing, Reducedbearing, suitability of application
	18 th	1	Quiz Test
	19 th	1	Use of compasses – setting in field-centering, leveling,taking readings, concepts of Fore bearing, Back Bearing Numerical problems on computation of interior & exterior angles from bearings.
	20 th	1	Effects of earth's magnetism – dip of needle magnetic declination, variation in declination, numerical problems on application of correction for declination. Errors in angle measurement with compass – sources &remedies.
6 th	21 st	1	Principles of traversing – open & closed traverse Local attraction – causes, detection, errors, corrections Numerical problems of application of correction due to local attraction.
	22 nd	1	Errors in compass surveying – sources & remedies Plotting of traverse – check of closing error in

Bowditch's correction, Gales table 23rd 1 MAP READING CADASTRAL MAPS & NOMENCLATURE: Study of direction, Scale, Grid Reference and Grid Squarestudy of Signs and Symbols Cadastral Map Preparation Methodology 24th 1 Positions of existing Control Points and its types Adjacent Boundaries and Features, Topology Creationand verification 7th 25th 1 PLANE TABLE SURVEYING: Objectives, principles and use of plane tables surveying Instruments & accessories used in plane table surveying Statements of TWO POINT and THREE POINTPROBLEM. Errors in plane table surveying and their corrections, precautions in Plane table surveying 27th 1 Methods of plane table surveying and their corrections, precautions in Plane table surveying 27th 1 THEODOLITE SURVEYING AND TRAVERSING: Purpose and definition of theodolite surveying Transit theodolite-Description of features, componentparts 28th 1 Concept of transiting Measurement horizontal and vertical angles 8th 29th 1 Measurement of magnetic bearings, deflection angle, direct angle 30th 1 Quiz Test 31th 1 Methods of theodolite traversing with – inclined anglemethod, deflection angle method, bearing method, angle method, bearing method, angle method, bearing method, cale's traverse table, Numerical problems on omittedmeasurement of lengths & Bearings 34th 1 Closing error – adjustment of		T	l	-ll 0
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			bearings, numerical problems
	35 th	1	Balancing of traverse – Bowditch's method
	36 th	1	transit method, graphical
	30	1	method, axis method,
			calculation of area of
			closedtraverse
10 th	37 th	1	LEVELLING AND CONTOURING:
10	37	•	Definition and Purpose and
			types of leveling–concepts of
			level surface,
	38 th	1	Horizontal surface, vertical
	30	1	surface, datum, R. L., B.M
	39 th	1	Instruments used for
	37	1	leveling, concepts of line
			ofcollimation, axis of
			bubble
			tube, axis of telescope, Vertical axis.
	40	1	reading with level, concept of
		•	bench mark, BS, IS, FS,
			CP, HI
11 th	41 st	1	height of collimation method
			and Rise and fall method,
			comparison, Numerical
			problems on reduction oflevels
			applying both methods,
			Arithmetic checks.
	42 nd	1	Effects of curvature and
			refraction numerical problems
			onapplication of correction.
	43 rd	1	Reciprocal levelling
	44 th	1	Errors in leveling and precautions,
			Permanent and temporary
			adjustments of different types of
			levels.
12 th	45 th	1	Definitions, concepts and
			characteristics of contours
	46 th	1	Use of contour maps on civil
			engineering projects
	47 th	1	Map Interpretation: Interpret
			Human and EconomicActivities
			(i.e.: Settlement,
	th		Communication, Land use etc
	48 th	1	Interpret Physical landform (i.e.:
			Relief, Drainage Pattern
			etc.), Problem Solving
1 oth	4 o th		andDecision Making
13 th	49 th	1	Quiz Test
	50 th	1	COMPUTATION OF AREA & VOLUME:
			Determination of areas,
			computation of areas
	et		fromplans.
	51 st	1	Calculation of area by using
			ordinate rule,
			trapezoidalrule, Simpson's
	1		rule.

52 nd	1	Calculation of volumes by	
		prismoidal formula and	
		trapezoidal formula	