ASIAN SCHOOL OF TECHNOLOGY, BHUBANESWAR

DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Discipline: Civil engineering	Semester : 3rd	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
1st	1st	1	Surveying: Definition Aims and objectives
	2nd	1	Principles of survey-Plane surveying- GeodeticSurveying- Instrumental surveying.
	3rd	1	Precision and accuracy of measurements, instrumentsused for measurement of distance,
	4th	1	Types of tapes and chains.
2nd	5th	1	Errors and mistakes in linear measurement –classification, Sources of errors and remedies.
	6th	1	Corrections to measured lengths due to-incorrect length,temperature variation, pull, sag,
	7th	1	numerical problem applying corrections
	8th	1	**CHAINING AND CHAIN SURVEYING :** Equipment and accessories for chaining
3rd	9th	1	Ranging – Purpose, signaling, direct and indirect ranging,Line ranger – features and use, error due to incorrect ranging.
	10th	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

			obstacles Purpose of chain surveying, Its Principles, concept of fieldbook
	11th	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.
	12th	1	Errors in chain surveying – compensating andaccumulative errors causes &
4th	13th	1	remedies, Precautions to be taken during chainsurveying.
	14th	1	**ANGULAR MEASUREMENT AND COMPASSURVEYING :** Measurement of angles with chain,
	15th	1	Measurement of angles tape & compass
	16th	1	Compass – Types, features, parts, merits & demerits,testing & adjustment of compass
5th	17th	1	Designation of angles- concept of meridians – Magnetic,True, arbitrary; Concept of bearings Whole circle bearing, Quadrantal bearing, Reducedbearing, suitability of application
	18th	1	Quiz Test
	19th	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.
	20th	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.
6th	21st	1	Principles of traversing – open & closed traverse Local attraction – causes, detection, errors, corrections Numerical problems of application of correction due to local attraction.
	22nd	1	Errors in compass surveying – sources & remedies Plotting of traverse – check of closing error in

			closed &open traverse, 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 tablesurveying Instruments & accessories used in plane table surveying.
	26th	1	Methods of 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	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
	31st	1	Methods of theodolite traversing with – inclined anglemethod, deflection angle method, bearing method,
	32nd	1	Checks for open and closed traverse.
9th	33rd	1	Traverse computation – consecutive coordinates, latitudeand departure, Gale's traverse table, Numerical problems on omittedmeasurement of lengths & Bearings
	34th	1	Closing error – adjustment of angular errors, adjustmentof

			bearings, numerical problems
	35th	1	Balancing of traverse – Bowditch's method
	36th	1	transit method, graphical method, axis method, calculation of area of closedtraverse
10th	37th	1	**LEVELLING AND CONTOURING :** Definition and Purpose and types of leveling–concepts of level surface,
	38th	1	Horizontal surface, vertical surface, datum, R. L., B.M
	39th	1	Instruments used for 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
11th	41st	1	height of collimation method and Rise and fall method, comparison, Numerical problems on reduction oflevels applying both methods, Arithmetic checks.
	42nd	1	Effects of curvature and refraction numerical problems onapplication of correction.
	43rd	1	Reciprocal levelling
	44th	1	Errors in leveling and precautions, Permanent andtemporary adjustments of different types of levels.
12th	45th	1	Definitions, concepts and characteristics of contours
	46th	1	Use of contour maps on civil engineering projects
	47th	1	Map Interpretation: Interpret Human and EconomicActivities (i.e.: Settlement, Communication, Land use etc
	48th	1	Interpret Physical landform (i.e.: Relief, Drainage Pattern etc.), Problem Solving andDecision Making
13th	49th	1	Quiz Test
	50th	1	**COMPUTATION OF AREA & VOLUME:** Determination of areas, computation of areas fromplans.
	51st	1	Calculation of area by using ordinate rule, trapezoidalrule, Simpson's rule.

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