

TEACHING PLAN FOR THEORY

Subject Teacher: Mr. D. M. Jade.

Subject: BCVL207:SURVEYING -I		Class: SY B.Tech.	Branch: Civil	Year 2017-2018
Lecture No	Scheduled Date	Topics to be covered on the scheduled date		
		Syllabus Discussion, Discussion on course objective & course outcome		
Unit-1: (10 Hrs)				
1		Introduction Surveying-Necessity & purpose, Geodetic & Plane Surveying,		
2		Classification of survey, Principles of Surveying, Division of Survey.		
3		Instruments and Measurement: -Linear measurements,		
4		Corrections to field measurements, ranging out,		
5		Direct & Indirect ranging. Use of Distomat,		
6		Chain surveying: -Basic definition, Principle of Chain Surveying,		
7		Survey station, Cross Staff Survey,		
8		Chain Traversing, Optical Square, Line Ranger,		
9		Prism Square, Obstacles in Chaining,		
10		Plotting of Chain Survey Work, Errors – Sources & Types.		
Unit II : (09 Hrs)				

1		Instruments for measurement of angles
2		Prismatic compass,
3		Surveyor's compass, their use
4		Surveyor's compass, their use & adjustment.
5		Compass Traversing: Reference meridians, Bearings & azimuths.
6		Local attraction, magnetic declination & its variation.
7		Open & closed traverses.
8		Adjustment of closed traverse.
9		Bowditch's Graphical method.
Unit-III: (08 Hrs)		
1		Instruments for measurement of elevation:
2		Dumpy level,
3		Tilting level & Automatic level.
4		Details of their construction.
5		Adjustments of Levels: Temporary adjustments of Dumpy & Tilting levels.
6		Permanent adjustments of Dumpy & Tilting levels.

7		Principle axes of Dumpy level, Relationship,
8		Testing and adjustment of bubble axis and line of collimation.

UNIT IV: (10 Hrs)

1		Leveling: Definition of terms, Principle of leveling, Reduction of levels,
2		Classification of leveling, Profile leveling, Longitudinal sectioning, Cross Sectioning,
3		Reciprocal leveling, Distance to vertical horizon, leveling methods, Leveling staves,
4		Booking & reduction of field notes, curvature & refraction.
5		Sensitivity of bubble tube. Errors in leveling.
6		Contouring: Definition, Characteristics of contour maps,
7		uses of contour maps, methods of contouring.
8		Interpolation of Contours,
9		Computation of area and volume – Trapezoidal and Simpson's Rule,
10		Planimeter, use theory, Zero Circle.

Unit V : (09 Hrs)

1		Theodolite: Introduction, Type of Theodolite, Temporary & Permanent adjustment,
2		Measurement of Horizontal & Vertical angles,

3		Magnetic Bearing, Prolonging a line,
4		Lining in. Other uses of Theodolite
5		Theodolite traverse: Consecutive Coordinates,
6		Independent Coordinates,
7		Adjustment of Closed traverse,
8		latitude & departure, Gale's traverse table,
9		area calculation by coordinates.
UNIT VI: (08 Hrs)		
1		Plane table Surveying: Equipment's, methods two point
2		three point problems,
3		Advantages & disadvantages of plane tabling.
4		Lehman's rules.
5		Construction of Major & Minor instruments like EDM,
6		use of Major & Minor instruments like EDM,
7		Total Station, Abney level,
8		Box sextant Planimeter Tangent Clinometers, Ghat Tracer