

Subject : Surveying-II
Lesson Plan Duration 15 weeks(from MARCH, 2021 to JULY,2021)

**** Work Load(Lecture/Practical) per week(in hours):-**
Lectures : 03 Practical: 06

Week		Theory		Practicals
	Lecture Day	Topic (including assignment/test)	Practical Day	Topic
1	1st	Contouring:-Concept of contours, purpose of contouring, contour interval and horizontal equivalent,	1st	Contouring:-Preparing a contour plan by radial line method by the use of a Tangent Clinometer/Tachometer
	2nd	factors effecting contour interval	2nd	Preparation of master sheet
	3rd	characteristics of contours, methods of contouring:	3rd	Preparation of master sheet
2	4th	Direct and indirect, use of stadia measurements in contour survey, interpolation of contours; use of contour map	4th	Preparing a contour plan by method of squares
	5th	Drawing cross section from a contour map;	5th	Preparation of master sheet
	6th	marking alignment of a road, railway and a canal on a contour map,	6th	Preparation of master sheet
3	7th	computation of earth work and reservoir capacity from a contour map	7th	Preparing a contour plan of a Road/Railway track/Canal by taking cross sections
	8th	Theodolite Surveying:Working of a transit vernier theodolite, axes of a theodolite	8th	Preparation of master sheet
	9th	theodolite and their relation; temporary adjustments of a transit theodolite	9th	Preparation of master sheet
4	10th	concept of transiting, swinging, face left, face right and changing face	10th	Theodolite:Taking out the Theodilite, mounting on the tripod and placing it back in the box
	11th	measurement of horizontal and vertical angles.	11th	Study of a transit vernier theodolite; temporary adjustments of theodolite
	12th	Prolonging a line (forward and backward)	12th	Study of a transit vernier theodolite; temporary adjustments of theodolite

5	13th	measurement of bearing of a line; traversing by included angles and deflection angle method;	13th	Reading the vernier and working out the least count, measurement of horizontal angles by repetition and reiteration methods
	14th	traversing by stadia measurement	14th	Measurement of vertical angles and use of tachometric tables
	15th	theodolite triangulation,	15th	Measurement of vertical angles and use of tachometric tables
6	16th	Plotting a traverse; concept of coordinate and solution of omitted measurements (one side affected),	16th	Exercise/viva-voice
	17th	errors in theodolite survey and precautions taken to minimize them	17th	Measurement of magnetic bearing of a line
	18th	limits of precision in theodolite traversing.	18th	Measurement of magnetic bearing of a line
7	19th	Height of objects – accessible and non-accessible bases	19th	Running a closed traverse with a theodolite (at least five sides) and its plotting
	20th	Tacho-metric surveying:-Tachometry,	20th	Height of objects with and without accessible bases
	21st	Instruments to be used in tachometry	21st	Height of objects with and without accessible bases
8	22nd	methods of tachometry, stadia system of tachometry,	22nd	Height of objects with and without accessible bases
	23rd	general principles of stadia tachometry,	23rd	Exercise/viva-voice
	24th	general principles of stadia tachometry,	24th	Exercise/viva-voice
9	25th	examples of stadia tachometry and Numerical problems.	25th	Exercise/viva-voice
	26th	Curves:Simple Circular Curve: Need and definition of a simple circular curve; Elements of simple circular curve	26th	Curves:-Setting out of a simple circular curve with given data by the following methods a) Offsets from the chords produced b) One theodolite method
	27th	Degree of the curve, radius of the curve	27th	Curves:-Setting out of a simple circular curve with given data by the following methods a) Offsets from the chords produced b) One theodolite method

10	28th	(Apex point), tangent point, length of curve,	28th	Curves:-Setting out of a simple circular curve with given data by the following methods a) Offsets from the chords produced b) One theodolite method
	29th	long chord deflection angle,	29th	Minor instruments:-Demonstration and use of minor instruments like Ceylon Ghat Tracer, Tangent Clinometer, Pantagraph, Abney level etc
	30th	long chord deflection angle,	30th	Minor instruments:-Demonstration and use of minor instruments like Ceylon Ghat Tracer, Tangent Clinometer, Pantagraph, Abney level etc
11	31st	Apex distance and Mid-ordinate. Setting out of simple circular curve: By linear measurements only: - Offsets from the tangent	31st	Use of planimeter for computing areas
	32nd	Successive bisection of arcs - Offsets from the chord produced	32nd	Use of planimeter for computing areas
	33rd	b) By tangential angles using a theodolite	33rd	Use of planimeter for computing areas
12	34th	b) By tangential angles using a theodolite	34th	Exercise/viva-voice
	35th	Revision/Assignment	35th	Demonstration of digital instruments through field visits to Survey of India and other government agencies.
	36th	Revision/Assignment	36th	Demonstration of digital instruments through field visits to Survey of India and other government agencies.
13	37th	Introduction to the use of Modern Surveying equipment and techniques such as: a) EDM or Distomat b) Planimeter	37th	Total Station (only demonstrations).
	38th	c) Total station	38th	Total Station (only demonstrations).
	39th	d) Introduction to remote sensing, GIS and GP	39th	Total Station (only demonstrations).
14	40th	Minor Instruments:-Introduction and use of minor instruments like Ceylon Ghat Tracer, Clinometer, Pantagraph, Abney Level etc	40th	Exercise/viva-voice

	41st	Use of planimeter for computing areas	41st	Exercise/viva-voice
	42nd	Use of planimeter for computing areas	42nd	Exercise/viva-voice
15	43rd	Revision	43rd	Exercise/viva-voice
	44th	Assignment	44th	Exercise/viva-voice
	45th	Assignment	45th	Exercise/viva-voice