SEMESTER-3RD			
SURVEYING LAB			
Sr. No	**Name of the Experiment as per SBTE**	**Availability at virtual Lab Site**	**LINKS**
1	MEASUREMENT OF DISTANCES WITH CHAIN & TAPE ON GROUND WITH DIRECT OR INDIRECT RANGING		
2	CONSTRUCTION AND USE OF OPTICAL SQUARE AND OPEN CROSS STAFF FOR SETTING OUT PERPENDICULAR AND RUNNING A SURVEY LINE FOR LOCATING DETAILS		
3	MEASUREMENT OF AREA BY CHAIN AND CROSS STAFF SURVEY		
4	USE OF PRISMATIC COMPASS AND OBSERVING FORE BEARING AND BACK BEARING.		
5	MEASURING FORE BEARING AND BACK BEARING OF 5-6 SIDE CLOSED POLYGON. IDENTIFYING STATIONS AFFECTED BY LOCAL ATTRACTION AND CALCULATION OF CORRECTED F.B. & B.B.		
6	MEASURING FORE BEARING AND BACK BEARING FOR AN OPEN TRAVERSE (5 TO 6 SIDED). CALCULATE DIRECTANGLES BETWEEN SUCCESSIVE LINES		
7	USE OF DUMPY LEVEL, TEMPORARY ADJUSTMENTS AND TAKING READING ON LEVELLING STAFF. RECORDING READINGS IN FIELD BOOK		
8	DIFFERENTIAL LEVELLING PRACTICE, REDUCTION OF LEVEL BY H.I. METHOD	YES	http://sl-iitr.vlabs.ac.in/exp3/index.php?section=Experiment
9	DIFFERENTIAL LEVELLING PRACTICE, REDUCTION OF LEVEL BY RISE & FALL METHOD.	YES	http://sl-iitr.vlabs.ac.in/exp3/index.php?section=Experiment
10	CARRYING BENCH MARK FROM ONE POINT TO ANOTHER POINT ABOUT 200 M BY FLY LEVELLING WITH TILTING LEVEL	YES	http://sl-iitr.vlabs.ac.in/exp2/index.php?section=Theory
11	USE OF AUTO LEVEL AND TAKING OBSERVATION	YES	http://sl-iitr.vlabs.ac.in/exp1/index.php?section=Gallery

12	MEASUREMENT OF AREA OF IRREGULAR FIGURE BY POLAR PLANIMETER		
13	MEASURING AREA ENCLOSED BY CLOSED CONTOURS ON CONTOUR MAP PREPARED EARLIER, BY SIMPLE DIGITAL PLANIMETER	YES	http://sl-iitr.vlabs.ac.in/exp9/index.php?section=Theory

BUILDING CONSTRUCTION LAB

Sr. No	Name of the Experiment as per SBTE	Availability at virtual Lab Site	
1	PREPARING FOUNDATION PLAN AND MARKING ON GROUND LAYOUT OF LOAD BEARING STRUCTURE BY FACE LINE METHOD FROM THE GIVEN PLAN OF THE BUILDING.		
2	PREPARING FOUNDATIONS PLAN AND MARKING ON GROUND LAYOUT OF FRAMED STRUCTURE BY FACE LINE METHOD FROM THE GIVEN PLAN OF THE BUILDING		
3	CHECKING AND TRANSFERRING LINE AND LEVEL OF PLINTH, SILL, LINTEL, FLOORING, SLAB LEVEL OF A BUILDING AND WRITING REPORT OF THE PROCESS		
4	CHECKING VERTICALITY (PLUMB LINE) OF FORMWORK FOR COLUMN, BEAM AND WALL AT CONSTRUCTION SITE AND WRITING REPORT OF THE PROCESS		
5	LAYING AND CONSTRUCTING THE PROCESS OF CONSTRUCTION OF BRICKWORK AND REPORT WRITING OF THE PROCESS		
6	OBSERVING THE PROCESS OF PAINTING IN RESIDENTIAL / PUBLIC BUILDING AND WRITING A REPORT WITH REFERENCE TO PROCESS AND TYPE OF PAINT SELECTED.		
7	OBSERVING AND WRITING REPORT OF THE PROCESS OF PLASTERING.		
8	OBSERVING AND WRITING REPORT OF THE PROCESS OF WATER PROOFING OF TERRACE OR BASEMENT.		
9	OBSERVING THE MODELS, SPECIMEN OF BUILDING MATERIALS KEPT IN THE MODEL ROOM FOR FEW BUILDING ITEMS AND WRITING A REPORT FOR ANY FIVE MODELS/MATERIALS.		

SEMESTER-4TH

SOIL MECHANICS /GEO TECHNICAL ENGG. LAB

Sr. No	Name of the Experiment as per SBTE	Availability at virtual Lab Site	
1	Determination of water content of given soil sample by oven drying method as per IS Code	YES	http://smfe-iiith.vlabs.ac.in/exp1/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
2	Determination of bulk unit weight dry unit weight of soil in field by core cutter method as per IS Code.	YES	http://smfe-iiith.vlabs.ac.in/exp2/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
3	Determination of bulk unit weight dry unit weight of soil in field by sand replacement method as per IS Code.	YES	http://smfe-iiith.vlabs.ac.in/exp2/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
4	Determination of Liquid limit & Plastic limit of given soil sample as per IS Code.	YES	http://smfe-iiith.vlabs.ac.in/exp5/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
5	Determination of shear strength of soil using direct shear test.	YES	http://smfe-iiith.vlabs.ac.in/exp9/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
6	Determination of grain size distribution of given soil sample by mechanical sieve analysis as per IS Code.	YES	http://smfe-iiith.vlabs.ac.in/exp4/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
7	Determination of coefficient of permeability by falling head test Practical (Live demo or Prerecorded demo)	YES	http://smfe-iiith.vlabs.ac.in/exp6/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
8	Determination of coefficient of permeability by constant head test	YES	http://smfe-iiith.vlabs.ac.in/exp6/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab

9	Determination of shear strength of soil using Laboratory Vane shear test	YES	http://smfe-iiith.vlabs.ac.in/exp9/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
10	Determination of MDD & OMC by standard proctor test on given soil sample as per IS Code	YES	http://smfe-iiith.vlabs.ac.in/exp7/Experiment.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
11	Determination of CBR value of given soil sample.		
12	Determination of shear strength of soil using tri-axial shear test.	YES	http://smfe-iiith.vlabs.ac.in/exp10/Theory.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab
13	Determination of shear strength of soil using unconfined compressive strength.	YES	http://smfe-iiith.vlabs.ac.in/exp10/Theory.html?domain=Civil%20Engineering&lab=Soil%20Mechanics%20Lab

ADVANCE SURVEYING LAB

Sr. No	Name of the Experiment as per SBTE	Availability at virtual Lab Site	
1	USING ACCESSORIES CARRY OUT TEMPORARY ADJUSTMENTS OF PLANE TABLE. LOCATING DETAILS BY METHOD OF RADIATION.	YES	http://sl-iitr.vlabs.ac.in/exp5/index.php?section=Experiment
2	Locating details with plane table by method of intersection.	YES	http://sl-iitr.vlabs.ac.in/exp5/index.php?section=Experiment
3	Understanding the components of Theodoliteand their functions, reading the vernier and temporary adjustments of Theodolite.		
4	Measurement of Horizontal angle by transit theodolite.	YES	http://sl-iitr.vlabs.ac.in/exp4/index.php?section=Experiment
5	Measurement of vertical angles by theodolite.	YES	http://sl-iitr.vlabs.ac.in/exp4/index.php?section=Experiment
6	Measurement of Horizontal angle by method of Repetition.		

7	Measurement of Magnetic bearing of a line using theodolite.		
8	Measurement of deflection angle by taking open traverse of 4 –5 sides.		
9	To find Reduced levels and horizontal distances using theodolite as a Tacheometer.		
10	To find constants of a given Tacheometer.		
11	Study and use of 1 second Micro Optic Theodolite for measurement of Horizontal and Vertical angles		
12	Study of E.D.M. for knowing its components.		
13	Use of EDM for finding horizontal and vertical distances and reduced levels.		
14	Determine the geographical parameters by total station.	YES	http://sl-iitr.vlabs.ac.in/exp4/index.php?section=Experiment

MECHANICS OF STRUCTURE LAB

Sr. No	Name of the Experiment as per SBTE	Availability at virtual Lab Site	
1	Identify the components of universal testing machine & tension test on mild steel.	YES	http://eerc01-iiith.vlabs.ac.in/exp2/Experiment.html?domain=Civil%20Engineering&lab=Basic%20Engineering%20Mechanics%20&%20Strength%20of%20Materials%20Lab
2	Tension test on tor steel / deformed bars .	YES	http://eerc01-iiith.vlabs.ac.in/exp1/Introduction.html?domain=Civil%20Engineering&lab=Welcome%20to%20Basic%20Engineering%20Mechanics%20and%20Strength%20of%20Materials%20lab!
3	Izod Impact test on mild steel, brass, copper and cast iron.	YES	http://sm-nitk.vlabs.ac.in/exp5/index.html
4	Charpy impact test on mild steel, brass, copper and cast iron.	YES	http://sm-nitk.vlabs.ac.in/exp6/index.html

5	Flexural test on timber.	YES	http://eerc01-iiith.vlabs.ac.in/exp1/Introduction.html?domain=Civil%20Engineering&lab=Welcome%20to%20Basic%20Engineering%20Mechanics%20and%20Strength%20of%20Materials%20lab!
6	Flexure test on floor tiles or roofing tiles.	YES	http://eerc01-iiith.vlabs.ac.in/exp1/Introduction.html?domain=Civil%20Engineering&lab=Welcome%20to%20Basic%20Engineering%20Mechanics%20and%20Strength%20of%20Materials%20lab!
7	Shear Test on metal.	YES	http://sm-nitk.vlabs.ac.in/exp9/index.html
8	Water Absorption & Compression test (Dry & Wet) on bricks		
9	Abrasion Test on flooring tiles.		

HYDAULICS LAB

Sr. No	Name of the Experiment as per SBTE	Availability at virtual Lab Site	
1	Measurements of pressure and pressure head by Piezometer, U-tube manometer		
2	Measurement of pressure difference by U-tube differential manometer. Study of bourdon's gauge		
3	Verification of Bernoulli's theorem	YES	http://eerc03-iiith.vlabs.ac.in/exp1/Introduction.html?domain=Civil%20Engineering&lab=Hydraulics%20and%20Fluid%20Mechanics%20Lab
4	Reynolds experiment to study types of flow.		
5	Determination of Darcy's friction factor for a given pipe		
6	Determination of Minor losses in pipes (any two)		
7	Study and use of Moody's diagram, Nomogram of Manning's equation		

8	Determination of Manning's constant or Chezy's constant for given rectangular channel section.		
9	Demonstration of Hydraulic jump		
10	Determination of coefficient of discharge for given rectangular or triangular notch.		
11	Determination of coefficient of discharge for a given Venturimeter.	YES	http://eerc03-iiith.vlabs.ac.in/exp5/Introduction.html?domain=Civil%20Engineering&lab=Hydraulics%20and%20Fluid%20Mechanics%20Lab
12	Demonstration and use of Pitot tube and current meter		
13	Determination of hydraulic coefficients for sharp edge orifice Study & use of water meter.		
14	Study of a model of centrifugal and reciprocating pump.		
15	Use of characteristic curves/ nomograms /charts / catalogs from manufactures for selection of pump for the designed discharge and head (Refer IS: 9694)		
SEMESTER-5TH			
THEORY OF STRUCTURE LAB			
Sr. No	**Name of the Experiment as per SBTE**	**Availability at virtual Lab Site**	
1	To Verify Strain in an externally loaded beam with the help of a strain gauge indicater and to verify theoretically.		
2	To study behavior of different types of Columns: (i) Both ends fixed (ii) One end fixed and other Pinned (iii) Both ends pinned (iv) One end fixed and other free.		
3	To find Euler's buckling load for different types of Columns : (i) Both ends fixed (ii) One end fixed and other pinned. (ii) Both ends pinned (iv) One end fixed and other free.		
4	To Study two hinged arch for the horizontal displacement of the roller end for a given system of loading and to compare the same with those obtained analytically.		
5	Determination of Shear force and loading.		
6	Compression test on metal.		
7	Determination of deflection of beam.		
8	Determination of moment of Inertia of fly wheel.		

IRRIGATION ENGINEERING LAB

Sr. No	Name of the Experiment as per SBTE	Availability at virtual Lab Site	
1	Collection of information and prepare list of documents and drawings required for irrigation project.		
2	Calculation of yield from given Tope sheet of a catchment area, plotting catchment area, determination of catchment area by planimeter.		
3	Canal capacity calculation from a given command area and cropping pattern.		
4	Plotting of area capacity curve of a given contour map of irrigation project		
5	From a given data fixation of control levels of reservoir.		
6	Layout of drainage in earthen dam on A4 size plate		
7	Neat labeled sketch of ogee spillway with gate and energy dissipation arrangement.		
8	Study of National Water Policy.		

SEMESTER-6TH

ENVIRONMENT ENGINEERING LAB

Sr. No	Name of the Experiment as per SBTE	Availability at virtual Lab Site	
1	To determine fluoride concentration in given water sample		
2	To determine the turbidity of the given sample of water.	YES	http://vlab.amrita.edu/?sub=2&brch=193&sim=575&cnt=1
3	To determine residual chlorine in a given sample of water.		
4	To determine suspended solids, dissolved solids, and total solids of water sample		
5	To determine the dissolved oxygen in a sample of water.		
6	To determine the optimum dose of coagulant in the given sample by jar test.		
7	To determine the dissolved Oxygen in a sample of waste water.		
8	To determine B.O.D. of given sample of waste water.		
9	To determine C.O.D. of given sample of waste water.	YES	http://vlab.amrita.edu/?sub=2&brch=193&sim=1548&cnt=1

10	To determine suspended solids, dissolved solids and total solids of waste water sample.		
11	Design the Septic Tank for the public building such as hostel or hospital. Draw Plan and Section of the same along with the drainage arrangement in soak pit.		
12	To determine various pollutant levels in the atmosphere using Digital Air Volume Sampler. a) Energy generation plants from solid wastes. b) Energy generation plants from Gobar Gas.		
ADVANCED CONSTRUCTION			
Sr. No	**Name of the Experiment as per SBTE**	**Availability at virtual Lab Site**	
	Collect Specifications/ properties of at least five advanced materials of construction and		
	write the report on the same.		
	Writing report on Tremie method of concreting for piles/ Bridge piers.		
	Finding effect of size of fibers and aspect ratio (l/d ratio) of steel fibers on the strength of steel fiber reinforced concrete		
	Finding effect of percentage of steel fibers on the strength of steel fiber reinforced concrete.		
	Writing a report on method of preparation and conveyance of ready mix concrete.		
	Writing a report on working and output of any three earth moving machinery.		
	Observing at site/ Video/ LCD demonstration of bitumen paver and writing report of the process and equipments observed.		
	Preparing a detailed account of types, numbers and drawings of steel formwork required for a two-storied framed structured residential building.