



## DEPARTMENT OF CIVIL ENGINEERING

### Basic Civil Engineering Lab

Subject Code: RBC1B202

Semester: 1<sup>st</sup>

#### Course Outcome:

Students will be able to

CO1	Demonstrate the shape and size of brick
CO2	Determine the compressive strength of brick
CO3	Examine distances and irregular area using chain and compass
CO4	Demonstrate the bearing of A line
CO5	Determine the initial and final setting time of cement
CO6	Estimate the compressive strength of concrete

### Engineering Graphics & Design Lab

Subject Code: RBC1B201

Semester: 2<sup>nd</sup>

#### Course Outcome:

Students will be able to

CO1	Understand planes of projection by using various commands
CO2	Create projection of simple two dimensional object
CO3	Create projection of two dimensional object with specific dimension
CO4	Create projection of simple three dimensional object
CO5	Create projection of complex three-dimensional object with specific dimension
CO6	Create projection of various object using isometric projection

### Building Drawing Using AutoCAD

Subject Code: RCI3C201

Semester: 3<sup>rd</sup>

#### Course Outcome:

Students will be able to

CO1	Draw the plan, elevation, side view of residential/office building
CO2	Design two bedrooms, three bedroom houses plan
CO3	Illustrate the detailing of doors and windows
CO4	Perform drawing of several types of super structure
CO5	Design different types of steel roof trusses
CO6	Design project on establishments like residential building/ bank building



## Field Survey Sessional

**Subject Code: RCI4C201**

**Semester: 4<sup>th</sup>**

**Course Outcome:**

Students will be able to

CO1	Measure an irregular area using chain survey
CO2	Illustrate traversing using compass
CO3	Find the area of the given boundary using compass (Closed Traverse)
CO4	Demonstrate dumpy level and automatic level for fly leveling
CO5	Measure horizontal and vertical angle using Theodolite
CO6	Demonstrate counter-sighting using Total Station

## Transportation Engineering Laboratory

**Subject Code: RCI4C202**

**Semester: 4<sup>th</sup>**

**Course Outcome:**

Students will be able to

CO1	Determine aggregates and judge the suitability of materials for the road construction
CO2	Evaluate abrasion value of aggregates
CO3	Obtain the optimum bitumen content for bituminous concrete
CO4	Determine the shape factor of aggregate
CO5	Determine the given Bitumen samples and judge their suitability for the road construction
CO6	Evaluate CBR value of soil subgrade

## Material Testing Laboratory

**Subject Code: RCI4C203**

**Semester: 4<sup>th</sup>**

**Course Outcome:**

Students will be able to

CO1	Determine shape, size and water absorption of bricks
CO2	Demonstrate setting times of cement
CO3	Examine specific gravity and soundness of cement
CO4	Estimate compressive strength of cement
CO5	Determine workability of cement concrete by Compaction Factor, Slump and Vee – Bee tests
CO6	Determine fineness of cement



## Design of Concrete Structures Lab

**Subject Code: RCI4C203**

**Semester: 5<sup>th</sup>**

**Course Outcome:**

Students will be able to

CO1	Determine workability of cement concrete by compaction factor, slump and Vee – Bee Tests
CO2	Determine cube test of concrete(nominal mix)
CO3	Demonstrate cylinder test for concrete (nominal mix)
CO4	Determine split tensile strength of concrete
CO5	Estimate prism test for modulus of rupture of concrete
CO6	Design of concrete mix (as per Indian Standard Method)

## Water and Waste Water Engineering Lab

**Subject Code: RCI4C203**

**Semester: 5<sup>th</sup>**

**Course Outcome:**

Students will be able to

Co1	Estimate some important characteristics of water, wastewater and soil in the laboratory
Co2	Estimate chloride, Ec and salinity of soil and suggest their suitability for construction/agriculture
Co3	Estimation of the strength of the sewage in terms of Bod and Cod
Co4	Demonstration of various instruments used in testing of water and soil
Co5	Estimation of important characteristics of water and wastewater in the laboratory
Co6	Determination of all solids parameters present in water

## Geotechnical Engineering Lab

**Subject Code: RCI4C203**

**Semester: 5<sup>th</sup>**

**Course Outcome:**

Students will be able to

CO1	Measure the index properties for soil classification
CO2	Determine Atterberg's Limits for soil sample
CO3	Demonstrate density -water content relationship of soil using standard proctor test
Co4	Estimate shear parameters of soil through different laboratory tests
Co5	Evaluate coefficient of permeability of soil
Co6	Determination of CBR of soaked and unsoaked soil specimens



## Steel Structure Lab

**Subject Code: RCI6C201**

**Semester: 6<sup>th</sup>**

**Course Outcome:**

Students will be able to

CO1	Understand various types of design philosophies
CO2	Estimate analysis and design of flexural members and detailing
CO3	Design compression members of different types with connection detailing
CO4	Design Plate Girder and Gantry Girder with connection detailing
CO5	Produce the drawings pertaining to different components of steel structures
CO6	Understand Design of tension and compression members in trusses

## Irrigation Engineering Lab

**Subject Code: RCI6C202**

**Semester: 6<sup>th</sup>**

**Course Outcome:**

Students will be able to

CO1	Study of canal dimensions and design and draw hydraulic structures of canal fall
CO2	Design and draw hydraulic structures of cross drainage work
CO3	Understand, design and draw gravity dam
CO4	Determination of seepage line and design slope stability
CO5	Study, design and draw hydraulic structures of spillway
CO6	Design and draw hydraulic structures of Canal drop-Notch type