COURSE TITLE : STRUCTURAL & IRRIGATION ENGINEERING DRAWING
COURSE CODE : 6011
COURSE CATEGORY : A
PERIODS/WEEK : 4
PERIODS/SEMESTER: 60
CREDITS : 3

TIME SCHEDULE

Module	Topics	Period
1	RCC structural elements-I	17
2	RCC structural elements-II	13
3	structural detailing of steel structures	13
4	Irrigation structures Environmental structures	17
TOTAL		**60**

COURSE OUTCOME

Sl.	Sub	Student will be able to
1	1	Draw the structural detailing of RCC structural elements
	2	Draw the structural detailing of steel structural elements
	3	Understand and read the structural drawings
2	1	Understand and draw the various irrigation structures

SPECIFIC OUTCOME

Upon completing the study, the students should be able to

MODULE -I

1.1.0 Understand R.C.C. Structural drawing details I

1.1.1 Draw the cross section at center, support and the longitudinal sections of simply supported rectangular beam, showing the reinforcement and dimensions

1.1.2 Draw the cross section at center, support and the longitudinal section of Continuous beam, showing the reinforcement and dimensions

1.1.3 Draw the cross sections at center, support and longitudinal section of a Cantilever beam, showing the reinforcement and dimensions

1.1.4 Draw the sectional elevation and plan showing reinforcement of a one way slab Simply supported

1.1.5 Draw the sectional elevation and plan showing reinforcement of a one way continuous slab.

1.1.6 Draw the sectional elevation for two spans and the plan at the levels of reinforcement of two way slab- simply supported, by showing all details and dimensions

1.1.7 Draw the sectional elevation for two spans and the plan at the levels of reinforcement of two way slab- restrained, by showing all details and dimensions

1.1.8 Draw the cross section and sectional elevation of a lintel cum sunshade, showing all the details and dimensions

1.1.9 Draw the cross section of a rectangular and circular columns, showing all details and dimensions

1.1.10 Draw the plan and the section showing reinforcement and dimension of an isolated column footing.

1.1.11 Draw the details of reinforcement at the junction of column and beam and column and footing according to the ductility provision.

MODULE- II

2.1.0 Understand R.C.C. Structural drawing details

2.1.1 Draw the cross section and longitudinal section - Cantilever retaining wall showing all the details and dimensions

2.1.2 Draw the plan and longitudinal section - Stair case-, dog legged and open well showing all the details and dimensions

2.1.3 Draw the sections and plan - R.C.C Elevated water tank, showing all the details and dimensions

2.1.4 Draw the cross section and longitudinal section - R.C.C. Tee beam and slab, bridge, showing all the details and dimensions

MODULE- III

3.1.0 Understand Steel Structural drawing details

3.1.1 a) Draw the elevation and plan of a single and double lacing system for compound column, using welded connection

b) Draw the elevation and plan of a battern system for a compound column.

c) Draw the elevation and cross section of a steel beam to steel column connection.

3.1.2 Draw the elevation and cross section of a secondary beam to main beam connection.

3.1.3 a) Draw the elevation and plan of a slab base for column with welded connection

b) Draw the elevation and plan of a Gusseted base for a column

3.1.4 Draw the elevation and cross section of a plate girder.

3.1.5 Draw Steel truss-medium span- draw the joints in detail.

MODULE- IV

4.1.0 Irrigation Engineering &Environmental Drawing

4.1.1 Draw the cross section of masonry dam showing component parts

4.1.2 Draw the longitudinal section and Plan of a canal drop showing component parts

4.1.3 Draw the longitudinal section and Plan of a Tank sluice with tower head
4.1.4 Draw the longitudinal section of a aqueduct showing component parts
4.1.5 Draw the longitudinal section and plan of surplus escape, showing all components
4.1.6 Draw the longitudinal section and plan of a surplus escape/weir, showing component parts
4.1.7 Draw the plan and show the different components of a septic tank and dispersion trench

CONTENT DETAILS

MODULE - I

RCC Structural Drawing: Simply supported beams- Continuous beam -Cantilever beam- One-way slab- simply supported- One-way slab- continuous- Two-way slab- simply supported -Two-way slab- end restrained -Lintel and sunshade- Columns- Isolated column footing-Column beam junction and column footing junction according to the ductility provisions

MODULE – II

RCC Structural Drawing: - Cantilever retaining wall- Stair case - dog legged Stair case- open well -R.C.C Elevated water tank- R.C.C. Tee beam and slab bridge

MODULE- III

Steel Structural Drawing: - Lacing and battens of columns- Beams to column connection- Secondary beam to main beam connection- Column bases:- a) Slab base b) Gusseted base -Plate girders -Steel truss-medium span- joint details and Parts

MODULE –IV

Irrigation and Environmental engineering drawing: - Masonry dams- Tank sluice with tower head- Surplus escape/weir -Canal drop -Septic tank with soak pit and dispersion trench

REFERENCE

1. P.K.Sasidharan : Design & Drawing ; Archana Publishers
2. Balagopal & Prabhu : Building Design & Civil Engineering Drawing ; Spade Engineers Pvt. Ltd
3. Namboothiri : Design & Drawing ; Spade Engineers Pvt. Ltd