Title of the course : Construction materials

Subject Code : QPCV-101

L	T	P	Credits	Weekly Load (Hrs.)
0	0	8	1	8

COURSE OUTCOMES: After successful completion of course, the students should be able to

CO1: Identify and test construction materials such as stones, bricks, timber, and cement.

CO2: Perform standard material tests and prepare a comparative market-based report on construction materials.

CO/PO Mapping:(Strong(3)/Medium(2)/Weak(1)indicates strength of correlation):

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	3	3	2	2	2	3	2
CO2	3	3	3	3	2	2	3	3	1
Avg.	3	2.5	3	3	2	2	2.5	3	1.5

Course Description	Lecture (s)
Unit – I (Construction materials)	
1. To identify the stones used in building works by visual examination 2. To determine the crushing strength of bricks 3. To determine the water absorption of bricks and efflorescence of bricks 4. To identify various types of timbers such as: Teak, Sal, Chir, Sissoo, Deodar, Kail & Hollock by visual examination only 5. To determine fineness (by sieve analysis) of cement 6. To conduct field test of cement. 7. To determine normal consistency of cement 8. To determine initial and final setting times of cement 9. To determine soundness of cement 10. To determine compressive strength of cement	128

Total= 128

Title of the course : AutoCAD Drawing & Building Construction & Drawings

Subject Code : QPCV-102

L	T	P	Credits	Weekly Load (Hrs.)
0	0	8	1	8

COURSE OUTCOMES: After successful completion of course, the students should be able to

CO1: Creatively comprehend the geometrical details of common engineering objects using 2D/3D modelling software.

CO2: Create detailed structural drawings of beams, slabs, and columns with an appropriate reinforcement and interpreting and applying design specifications and standards to structural drawings.

CO/PO Mapping:(Strong(3)/Medium(2)/Weak(1)indicates strength of correlation):

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	3	3	2	2	2	3	2
CO2	3	3	3	3	2	2	3	3	1
Avg.	3	2.5	3	3	2	2	2.5	3	1.5

Course Description	Lecture (s)
Unit – I (AUTOCAD DRAWING)	
1. Introduction and use of AutoCAD 2. Management of screen menus commands in 2D and 3D. 3. Creating basic drawing entities 4. Setting limits and units before starting actual drawing. 5. Practice of absolute coordinate system, relative and polar system using various draw and modify commands. 6. Drawing limits, units of measurements and scale. 7. To organize and maintain the integrity of drawings using layers. 8. Editing and modifying drawing entities and use of dimensioning command 9. Develop plan, elevation, and section of single storey building by using various commands making use of layers command. 10. Development of 3D view of a building.	64
Unit-II (Building Construction & Drawings)	
1. Demonstration of tools and plants used in building construction. 2. To prepare Layout of a building: two rooms building with front verandah 3. To construct brick bonds (English bond only) in one, one and half and two brick thick: (a) Walls for L, T and cross junction (b) Columns 4. Drawing No. 1: details of spread footing foundations, load bearing and non-load bearing wall for given thickness of walls with the help of given data or rule	64

of the thumb, showing offsets, position of DPC. The details of the concrete and brick apron have to be shown in the drawing. 5. Drawing No. 2: Plans of 'T' and Corner junction of walls of 1 Brick, 1-1/2 Brick and 2 brick thick in English bond 6. Drawing No.3: Elevation, sectional plan and sectional side elevation of flush door, glazed door, panelled door with wire gauge shutter. 7. Drawing No. 4: Drawing plan, elevation of a small building by measurement and foundation detail and sectional elevation. 8. Drawing No.5: Drawing detailed plan, elevation and section of a two room residential building from a given line plan, showing details of foundations, roof and parapet.	

Total= 128

Title of the course : Concrete Technology Lab & Irrigation Engineering Drawings

Subject Code : QPCV-201

L	T	P	Credits	Weekly Load (Hrs.)
0	0	8	1	8

COURSE OUTCOMES: After successful completion of course, the students should be able to

CO1: Perform laboratory tests on concrete materials to evaluate their properties and quality.

CO2: Prepare and interpret irrigation engineering drawings of canals and irrigation structures using standard conventions.

CO/PO Mapping:(Strong(3)/Medium(2)/Weak(1)indicates strength of correlation):									
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	3	3	2	2	2	3	2
CO2	3	3	3	3	2	2	3	3	1
Avg.	3	2.5	3	3	2	2	2.5	3	1.5

Course Description	Lecture (s)
Unit – I (Concrete Technology Lab)	
1. To determine flakiness and elongation index of coarse aggregates 2. To determine silt in fine aggregate 3. Determination of specific gravity and water absorption of aggregates 4. Determination of bulk density and voids of aggregates 5. To determine surface moisture in fine aggregate by displacement method 6. Determination of particle size distribution of fine, coarse and all in aggregate by sieve analysis (grading of aggregate) 7. To determine workability by slump test. 8. Compaction factor test for workability 9. Non-Destructive test on concrete by Rebound Hammer Test 10. Tests for compressive strength of concrete cubes for different grades of concrete	64
Unit-II (Irrigation Engineering Drawings)	
1. To draw the cross-section of irrigation canals (lined and unlined) 2. To draw the longitudinal section (L-section) of a canal 3. To draw the canal sections in cutting, filling, and partial cutting & filling 4. To draw the layout plan of canal head works 5. To draw the canal regulators and outlets 6. To draw the plan and section of canal drop structures	64

7. To draw the cross-section of earthen dams (homogeneous and zoned type) 8. To draw the longitudinal section and details of a weir 9. To draw the plan and longitudinal section of an aqueduct 10. To draw the cross-section of a tube well showing all components	

Total= 128

Title of the course : Study, Analysis and Report on Various Civil Engineering Codes Followed in Different Countries

Subject Code : QPCV-202

L	T	P	Credits	Weekly Load (Hrs.)
0	0	8	1	8

COURSE OUTCOMES: After successful completion of course, the students should be able to

CO1: Study and identify various civil engineering codes followed in different countries.

CO2:.Analyze fire safety and building safety codes followed in different countries

CO/PO Mapping:(Strong(3)/Medium(2)/Weak(1)indicates strength of correlation):									
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	3	3	2	2	2	3	2
CO2	3	3	3	3	2	2	3	3	1
Avg.	3	2.5	3	3	2	2	2.5	3	1.5

Course Description	**Lecture (s)**
Unit – I (Study, Analysis and Report on Various Civil Engineering Codes Followed in Different Countries)	
1. Introduction to Indian Standards (IS Codes) related to building construction and materials. 2. Introduction to British Standards (BS Codes) related to building construction and materials. 3. Introduction to American Codes (ACI / ASTM / AASHTO) for concrete. 4. Introduction to German standards for concrete and design. 5. Comparative study of IS Codes vs BS Codes for building construction and materials. 6. Comparative study of IS Codes vs ACI Codes for reinforced concrete works. 7. Study of fire safety codes followed in different countries. 8. Study of building safety codes followed in different countries.	128

Total= 128

Title of the course : Case studies on various defects in building and its remedies (Retrofitting)

Subject Code : QPCV-301

L	T	P	Credits	Weekly Load (Hrs.)
0	0	8	1	8

COURSE OUTCOMES: After successful completion of course, the students should be able to

CO1: Identify and study various defects in buildings through case studies.

CO2: Analyze defects and suggest suitable remedial and retrofitting measures.

CO/PO Mapping:(Strong(3)/Medium(2)/Weak(1)indicates strength of correlation):

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	3	3	2	2	2	3	2
CO2	3	3	3	3	2	2	3	3	1
Avg.	3	2.5	3	3	2	2	2.5	3	1.5

Course Description	Lecture (s)
Unit – I (Case studies on various defects in building and its remedies (Retrofitting)	
1. Study and identify various types of cracks in buildings and their causes. 2. Case study on foundation settlement defects and remedial measures. 3. Study dampness and water leakage problems in walls, floors, and roofs. 4. Analyze corrosion of reinforcement in RCC structures and repair methods. 5. Identify concrete defects like honeycombing, segregation, and bleeding. 6. Study plastering defects such as cracks, peeling, and efflorescence. 7. Examine structural defects caused by poor workmanship. 8. Case study on earthquake-induced building damages and retrofitting. 9. Study fire-damaged structures and suitable strengthening techniques. 10. Analyze retrofitting methods including jacketing, grouting, and FRP wrapping.	128

Total= 128

Title of the course : Study of various Civil Engineering (construction) codes followed in India.

Subject Code : QPCV-302

L	T	P	Credits	Weekly Load (Hrs.)
0	0	8	1	8

COURSE OUTCOMES: After successful completion of course, the students should be able to

CO1: Study and identify various civil engineering construction codes followed in India.

CO2: Analyze and interpret Indian construction codes for practical application in design and construction works.

CO/PO Mapping:(Strong(3)/Medium(2)/Weak(1)indicates strength of correlation):									
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	3	3	2	2	2	3	2
CO2	3	3	3	3	2	2	3	3	1
Avg.	3	2.5	3	3	2	2	2.5	3	1.5

Course Description	Lecture (s)
Unit – I (Study of various Civil Engineering (construction) codes followed in India.)	
1. Introduction to IS Codes for Reinforced Cement Concrete (RCC) – design and construction guidelines. 2. Introduction to IS Codes for Steel Structures – specifications and permissible limits. 3. Introduction to IS Codes for Masonry Structures – brick and stone masonry standards. 4. Introduction to IS Codes for Foundation Design – shallow and deep foundations. 5. Introduction to IS Codes for Highway and Road Design – IRC/IS guidelines. 6. Introduction to IS Codes for Earthquake-Resistant Design – seismic considerations. 7. Introduction to IS Codes for wind load and structural safety – Design against wind forces 8. Preparation of report on Indian codes for building construction.	128

Total= 128