Syllabus for Diploma Engineering

Civil Engineering

Semester – III

Subject Name: Construction Technology
Subject Code: 09CI0304

Diploma Branches in which this subject is offered: Civil Engineering

Objective: Objectives of introducing this subject at 2nd year level in Civil Engineering branch are:

- To sensitize the students to environmental concerns and their impact on society and business
- To familiarize the students with strategies for addressing environmental issues
- Be better prepared to recover from a major natural catastrophe

Credits Earned: 4 Credits

Course Outcomes:

On the completion of the course student will be able to:

- Identify environmental factors and their impact on society and business
- Articulate strategies to deal with environmental issues
- Develop an ethical orientation to managing the environment
- To gain knowledge about disaster and understand Engineering challenges for Hazard Management
- apply tools & techniques for disaster risk assessment of Infrastructure, preparing disaster management plan and Damage Assessment
- role of Engineer in climate change which is one of humanity's biggest challenges of the 21st century

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term work	
2	0	2	4	50	30	20	25	25	150

Contents:

Unit	Topics	Contact hours	Weightage (%)
1	**Introduction :** • Introduction of various Civil Engineering structures. • Functions of various components of building and other structures.	3	10
2	**Foundation:** • Importance of foundation in building • Classification and types of foundations & • Introduction to suitability of various foundation for given structure and soil conditions	3	15
3	**Masonry work :** • Types of Brick and stone masonry.	2	10
4	**Formwork :** • Types of Timber Formwork • Purpose & types of scaffolding and centering • Advanced shuttering system	3	15
5	**Construction Sequence for residential building :** • Load bearing & frame structure • Land acquisition • Lineout of foundation • Foundation • Plinth, sill civil work • Slab • Building services • Accessories like (electric fitting, plumbing, tiles colouring etc)	6	20
7	**Construction sequence for other structures** : Multistory building, bridge, temporary structures etc	8	20
8	**Advance construction Equipment :** • Ready mix concrete plant • Construction Equipments • Excavating Equipments • Hauling and Conveying Equipments	3	10
	Total	28	100%

Suggested Theory distribution:

The suggested theory distribution as per Bloom's taxonomy is as per follow. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyse	Evaluate	Create
35%	40%	15%	10%	0%	0%

Suggested List of Experiments/Drawings/Presentations:

Sr. No.	Name	Contact hours
1	Video presentation of foundation and its construction steps	**2**
2	Types of foundation and challenges associated for its choice with problematic soil and heavy structures	**2**
3	Sketches of Spread Footings, Combined Footings, Strap Footings, End Bearing Pile, Friction pile, Compaction pile, Tension pile, Fender pile, Better pile, under-reamed pile, pile caps, pile shoes	**4**
4	Concept of use and dimensions of Brick, wall thickness of various sizes	**2**
5	Demonstration of various bonds in masonry and it where they are used.	**2**
6	Sketches of Tools for stone masonry, Tools for stone dressing, joints in stone masonry, Bonds in brickwork, tools for brick laying,	**4**
7	Sketches of Timber formwork for RCC: wall, Floor, Column, Beam. Timber formwork for Staircase: Timber centering, trestle centering	**4**
8	Sketches of Door, window, ventilator, cupboard, wardrobe, etc. Floors, types and methods of construction, floor finishes. Roof, roof coverings and false ceilings.	**6**
9	Conduct visit on Ready Mix Concrete plant	**2**

Instructional Method:

a. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

b. The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

c. Practical examination will be conducted at the end of the semester for an evaluation of the performance of students in the laboratory.

d. Students will use supplementary resources such as online videos, videos, e-courses, Virtual Laboratory

Reference Books:

1. Building Construction, B.C. Punmia
2. Building Construction,Shushil Kumar
3. Building Construction,S. C. Rangwala
4. Building Construction,Sharma AndKaul
5. Construction Planning, Equipments and methods, R. L. Perurifoy