

Civil B. Tech. Interacted

SYALLBUS – ITI

1st sem.

Subjects

1. Applied Physics
2. Enggineering Drawing
3. Workshop (practical)
4. Workshop Technology
5. Trade Theory I:-

For Mech. -R&AC+ Fitter+ Welder

For civil -Plumber + carpentry

For electrical -electrician

For electronics-radio & tv+ computer hardware

For computer -ITESM + copa +computer hardware

2nd Sem.

Subjects

1. Enggineering math
2. Enggineering drawing
3. Workshop (practical)
4. Workshop Technology
5. Trade Theory II :-

For mech. -R&AC+ Fitter+ Welder

For civil -Plumber+ carpentry

For electrical -Electrician

For electronics-radio & tv+ computer hardware

For computer -ITESM+ Copa + computer hardware

Diploma III Sem.

Sr.No.	Code	Subject
1	CE31	Strength of Materials
2	CE32	Fluid Mechanics-I
3	CE33	Building Technology
4	CE34	Surveying - I
5	CE35	Transportation – Engineering
6	CE36	Soil Engineering
7	CE37	Construction Materials

Diploma IIIrd Sem.

Code CE 31 Strength of Materials –I

1. Simple Stress and Strain
2. Compound Stress
3. Strain Energy
4. Bending Moments and shear force
5. Moment of inertia
6. Bending Stresses in Beams
7. Shear Stress in Beams

Code CE 32 Fluid Mechanics – I

1. Introduction
2. Fluid Pressure and its Measurement
3. Hydrostatics
4. Hydro kinematics
5. Hydrodynamics and Measurement of flow
6. Orifices and Notches

Code CE 33 Building Technology –I

1. Introduction
2. Foundation
3. Walls
4. Brick Masonry
5. Stone Masonry
6. Scaffolding Shoring and Underpinning
7. Dampens and its Prevention
8. Building Bye Laws

Code CE 34 Surveying – I

1. Introduction
2. Chain Surveying
3. Compass Surveying
4. Minor Instrument

Code CE 35 Transportation Engineering – I

1. Introduction
2. Highway Development and Planning
3. Highway Geometric Design
4. Traffic Engineering
5. Highway Materials
6. Construction of Roads
7. Highway Materials
8. Road Drainage and Road Arboriculture
9. Bridges

Code CE 36 Soil Engineering

1. Introduction
2. Fundamental Definitions and Relationships
3. Classification of Soils

4. Permeability of Soils
5. Compaction
6. Consolidation
7. Shear Strength
8. Bearing Capacity
9. Soil Pressure
10. Soil Exploration

Code CE 37 Construction Materials

1. Stones
2. Bricks
3. Tiles
4. Lime
5. Lime Mortar
6. Cement and Cement Mortar
7. Timber

Paints and Varnishes

Diploma IVth Sem.

Sr.No.	Code	Subject
1	CE41	Strength of Materials-II
2	CE42	Fluid Mechanics-II
3	CE43	Building Technology-II
4	CE44	Surveying - II
5	CE45	Transportation – Engineering -II
6	CE46	Construction Technology
7	CE47	Building Drawing

IVth

Code CE 41 Strength of Materials – II

1. Deflection
2. Columns and Struts
3. Torsion so Struts
4. Springs
5. Thin Cylindrical Shells
6. Combined Direct and Bending stress
7. FrameCode CE 42 Fluid Mechanics – II
8. Flow Through Pipes
9. Flow Through Channels
10. Turbines
11. Pumps

Code CE 43 Building Technology – II

1. Arches and Lintels
2. Doors
3. Windows
4. Stairs and Stair Cases
5. Roofs
6. Floors

7. Finishing of Building
8. Basic Principles of Building Planning
9. Orientation
10. Design of Buildings

Code CE 44 Surveying - II

1. Leveling
2. Contouring
3. Plane Table Surveying
4. Modern Instruments

Code CE 45 Transportation Engineering – II

1. Introduction
2. Permanent way and track materials
3. Rails
4. Steppers
5. Ballast
6. Fixture
7. Railway Geometries
8. Permanent and Temporary land Widths
9. Point and Crossing
10. Tracks Laying
11. Maintenance
12. Stations and Yards
13. Signal lings
14. System of Signal lings
15. Tunneling

Code CE 46 Concrete Technology

1. Cement
2. Testing of Comment
3. Aggregates
4. Water
5. Admixtures
6. Fresh Concrete
7. Concrete Operation
8. Strength of Concrete
9. Special Concrete
10. Formwork
11. Quality Control at site

Code CE 47 Building Drawing

1. Detailed working plan, elevation and section of the following
2. Drawing of a small residential building from measurements
3. Detailed working drawing of a two storied building

Diploma Vth Sem

Sr.No.	Code	Subject
1	CE51	Public health Engineering -I
2	CE52	Irrigation Engineering -I
3	CE53	Theory of Structures
4	CE54	Surveying – III
5	CE55	Estimating and Costing –I
6	CE56	Elective Construction Management Building Services
7	CE57	Elective II C Programming Computer in Business System

Vth Sem.

Code CE 51 Public Health engineering

1. Introduction
2. Quantity of water
3. sources of water
4. Quantity of water
5. Treatment of water
6. Conveyance of water
7. Regulatory Valves
8. Distribution of water
9. Building water supply
10. Rural water supply

Code CE 52 Irrigation Engineering –I

1. Introduction
2. Water Requirements of crops
3. Hydrology
4. Reservoir Planning
5. Dams
6. Earthen and Rock fill dams
7. Spillways
8. River Training Works

Code CE 53 Theory of Structures

1. Slope and Deflection
2. Influence line diagram for the following in simply supported beams
3. Rolling loads
4. Indeterminate Structures
5. Propped Cantilever Beam
6. Fixed Beams
7. Continuous

Code CE 54 Surveying – III

1. Theologize
2. Traverse
3. Tachometry
4. Trigonometrically leveling
5. Curves
6. Modern

Code CE 55 Estimating and Costing- I

1. Introduction
2. Rate-Analysis
3. Specifications
4. Detailed Estimates for Building
5. Earth work calculation for Road and Rail Formation

Code CE 56 Construction Management and Equipments

1. Introduction
2. Construction Planning
3. Organization
4. Construction Contracts
5. Construction Labour
6. Inspection and Quality Control
7. Construction Equipments

Code CE 57 Building Services

1. Surface finishes and External Rendering
2. Water supply and Drainage in building
3. Hot water Supply
4. Ventilation
5. Air-Conditioning System for Building
6. Basic concepts of electrical wiring
7. Lifts
8. Lighting
9. Fire Protection
10. Sound and Acoustics

Code CE 58 C Programming

1. Introduction
2. Elements of C
3. Console Input –Output
4. Control Flow
5. Arrays
6. Functions
7. Pointers
8. Structures and Enumerated Data Types

Code CE 59 Computer in Business Systems

1. Business Data Processing
2. Business Files
3. Design, Analysis and Development of
4. Computerized Payroll
5. Fox Pro

Diploma VIth Sem

Sr.No.	Code	Subject
1	CE61	Public health Engineering -II
2	CE62	Irrigation Engineering -II
3	CE63	Steel Structures Design and Drawing
4	CE64	R.C.C. Design and Drawing
5	CE65	Estimating and Costing –II
6	CE66	Elective Repair and Maintenance of civil works Appropriate Technology Environmental Engineering
7	CE67	Elective II Management Entrepreneurship Development Production System Management

VIth Sem.

Code CE 61 Public health Engineering –II

1. Introduction
2. Quantity of Sewage
3. Characteristics and Compositions of sewage
4. Building Drainage
5. Sewers
6. Appurtenances
7. Laying of Sewers
8. Maintenance
9. Sewage Disposal
10. Treatment and Disposal
11. Septic Tanks
12. Rural Sanitation

Code CE 62 Irrigation Engineering – II

1. Canals
2. Water Logging
3. Diversion Head Works
4. Cross Drainage works
5. Distributor works
6. Well irrigation

Code CE 63 Steel Structure Design and Drawing

1. Introduction

2. Structural Steel Connection
3. Tension Members
4. Compression Members
5. Column Bases
6. Beams and Lintels
7. Roof Trusses
8. Plate Girder

Code CE 64 R.C.C. Design and Drawing

1. Introduction
2. Flexural Members
3. Analysis and design of Beams
4. Stabs
5. Compression Members
6. Design of Footing
7. Retaining Wall
8. Priestesses Concrete

Code CE 65 Estimating and Costing – II

1. Preparing Details Estimates for the various items of work from the given drawing for
2. Valuation of property and rent fixation
3. Contract System
4. Procedure of Works
5. Public works accounts
6. Stores tools and plants

Code CE 66 Repair and Maintenance of Civil works

1. Principle of maintenance
2. Maintenance Standards
3. Defects
4. Maintenance Organization
5. Maintenance Problems and Their Solution

Code CE 67 Appropriate Technology

1. Introduction
2. Materials
3. Mud walls
4. Thatched Roofs
5. Low cost Housing
6. Rural Sanitation
7. Rural Sanitation
8. Rural Roads
9. Miscellaneous

Code CE 68 Repair and Maintenance of Civil Works

1. Environment and Ecology
2. Factors affecting Environmental

- pollution
- 3. Water Pollution
- 4. Air Pollution
- 5. Noise Pollution
- 6. Land Pollution
- 7. Environmental Impact Assessment
- 8. Global Environmental Issues
- 9. Non conventional Sources of energy in environmental protection
- 10. Pollution control acts
- 11. Environment

Code CE 69 Management

- 1. Principles of Management
- 2. Human Resources Development
- 3. Wages and Incentives
- 4. Financial Management
- 5. Material Management
- 6. Marketing Management
- 7. Tax System and Insurance
- 8. Labour Legislation and Pollution control Acts
- 9. Entrepreneurship Development

Code CE 70 Entrepreneurship Development

- 1. Entrepreneurship
- 2. Industrial Policy
- 3. Entrepreneurship support System
- 4. Entrepreneurship Development
- 5. Setting up SSI
- 6. Raw material management
- 7. Marketing Facilities
- 8. Financial Sources for SSI
- 9. Contracts and Tenders
- 10. Projects Report
- 11. ISO : 9000 Series of Quality Syst

Code CE 71 Production System Management

- 1. Introduction
- 2. New Product Design
- 3. Demand Forecasting
- 4. Production Planning and Control
- 5. Capacity Planning and Control
- 6. Material Requirement Planning
- 7. Process Planning
- 8. Production Control
- 9. Make of Buy Decision

10. Application of LPP in Production Management
11. Group Technology
12. Just in Time Manufacturing

B. Tech Civil Engineering Syllabus
Vth Semester

Design of Concrete Structure
Analysis of Structure
Geo - technical Earthquake Engineering
Computer Aided Civil Engineering Drawing
Soil Mechanics
Geodesy

B. Tech Civil Engg. Syllabus

Vth Sem.

CoDesign of Concrete Structure:- Introduction, types of cement, aggregate, components of concrete, mix design and its philosophy, design of singly and doubly reinforced beams, flanged beam columns, foundations, walls, other components of buildings, other important reinforced concrete structures, methods for reinforced concrete design, pre-stressed concrete, laboratory tests.

Analysis of Structure :- Introduction, indeterminate structures virtual work and energy principle, slope deflection method, Maxwell' reciprocal theorem, rolling loads and influence lines, moment distribution method, kani's method, stiffness and flexibility approach, finite element approach, plasticity theory and its applications for structures, for structures laboratory experiments.

Geo technical Earthquake Engineering :- Introduction, earthquake and its effect, magnitude and intensity of earthquakes, faults, seismometers and accelerometers, properties of soil during and after earthquakes, geo technical earthquake hazards and its remedy (e.g ground improvement, ant liquefaction measures), earthquake resistant design of geo technical structures, prediction of earthquake, Indian Standard Code as design tool for earthquake resistant design.

Computer Aided Civil Engineering Drawing:- Introduction, AutoCAD-an introduction, types of structures, plan, elevation, sectional view of super and sub structures, foundation layout for super-structures, detailed drawings for each components of such structures, step wise construction based on drawings.

Soil Mechanics: - Introduction, definitions different types of soil, clay mineralogy, soil structures, permeability, seepage, capillarity, compaction, consolidation, shear stress, total and effective stress in soil, earth pressure, arching in soil stresses in soil due to external load bulk heads types of bulk heads, free earth support method, fixed earth support method, stability of slopes, pavement design, foundation types, bearing capacity and settlement of foundations, field and laboratory investigations of soil.

Geodesy:- Introduction measurements in field, mapping, basic theory of measurements, triangulation, tachometry, astronomical survey, photogrammetry and error analysis, field tests.

VIth Semester

Computer Application in Civil Engineering
Properties of Civil Engineering Materials
Design of Steel Structures
Transportation Engineering
Waste and Water Treatment
Numerical Analysis

VIth Sem.

Computer Application in Civil Engineering: - Introduction an introduction to FORTRAN, C, C++, software to be used in Civil Engineering, Programming and analysis of continuum and discrete structures, stiffness and flexibility methods, Eigen value and eigen vector, pre and post processing, graphical user interface, application of software in civil Engineering.

Properties of Civil Engineering Materials :- Introduction, building stones and aggregates, clay products i.e, bricks, tiles, terracotta, etc, lime cements mortars, concrete, timber, plywood and allied products, plastics and allied products glass and allied products, paints and allied products, ferrous, non- ferrous metals and alloys, gypsum and allied products adhesives i.e glues, asphalt bitumen, felts, blast furnace slag, flashy, concrete hollow blocks, coal, tar, pitch and linoleum.
 Design of Steel Structures :- introduction, riveting and welding, tension members, compression members, members under bending, members under axial load and moment, eccentrically loaded members, design of trusses, gantry girders, plate girders base for columns and footing, industrial structures, plastic, design of structures.

Transportation Engineering :- Introduction, transport systems, its characteristics, social and economical factors, planning and design of transport facility, design standards, design of highway, railways and airports, different types of intersections, traffic safety and traffic management, laboratory tests.

Water and water Treatment :- Water and waste water treatment Introduction, water supply and waste water system, analysis of water and waste water, requirements for treatment & treatment process, design of treatment units, disposal of sludge of waste water, design of sewerage systems, water distribution networks, rural sanitation, reunification of effluent and its reuses.

Numerical Analysis :- Introduction, Solution of non linear algebraic equations, Interpolation & approximation, differentiation & integration, system of linear equations, Eigen values & Eigen vectors problems, round off and conditioning.

VIIth Semester

Introduction to Water Resource Engineering
Design of Water Resource System
Contract Specification & Quantities
Design of Bridge Structures
Computer Aided Design
Design of Pre- Stressed Concrete Structures
Disaster Management

VIIth Sem.

Introduction to Water Resource Engineering :- Introduction, hydrology, irrigation methods, determination of water required for crops, analysis of run off, hydrographs, confined and unconfined aquifers, determination of discharge, reservoir types and its planning, mass curve, life of reservoir, cost aspects, flood routing, design analysis of dam.

Design of Water Resource System :- Introduction, planning water resources, flood and flood routing, spillways, weirs on permeable foundation, exploration of ground water, well hydraulic, pumping tests. Masonry works, construction .

Contract Specification and Quantities :- Introduction, specifications for different quantities estimation of earthwork, quantities of cement, sand and gravel for massive concrete work, steel and other estimations, evaluation of cost for

different quantities, schedule of rates, sanction, project, technical report, accounts and procedure of works, planning of colony and village housing.
 Design of Bridge Structures:- Introduction, types of bridge, design and analysis of important bridges, design and analysis of important foundations for bridges.
 Computer Aided Design :- Introduction, brief introduction to programming languages, computer graphics knowledge based expert system, database management system, web page design, pre and post processing, application in engineering and science.
 Design of Pre- stressed Concrete Structures :- Introduction, pre- tensioned and post-tensioned members, pre- stressing systems, losses in pre-stress, design of

pre-stress members under flexure, shear and torsion, pre-stress transfer, load balancing techniques.

Disaster Management :- Introduction, hazard and its types, effect of natural and man made hazards, preparedness, prevention, mitigation, warning and management for natural and man made hazards, rehabilitation and reconstruction, education and training for disasters, case studies, application of computer for analyzing disasters.

VIIIth Semester

Construction Planning & Technology
Expert system
Earth quake Engineering
Foundation Engineering
Major Project

VIIIth Sem

Construction Planning & Technology :-

Expert Systems :- Introduction, Components of an expert system, stages in expert system development, knowledge representation, inference mechanism, Knowledge based approaches for engineering and science design, building expert systems, applications.

Earth Quake Engineering :- Introduction single degree of freedom system, multi degree of freedom system, magnitude and intensity of earthquake, seismometers and earthquake zones of different countries, design earthquakes, earthquake resistant design as per Indian Standard code, seismic soil- structure interaction, geo technical earthquake engineering disaster management for earthquakes.

Foundation Engineering :- Introduction types of foundations, bearing capacity of shallow foundations, bearing capacity of deep foundations, stresses in soil immediate and long term settlement of foundations, drainage and dewatering, construction of foundations static dynamic seismic soil- foundation structure interaction.

