

## THIRD YEAR

N o.	subject	Studying Hours						
		First Semester			Second Semester			Unit s
		Theoret ical	Practic al	Applicato ry	Theoretic al	Practic al	Applicato ry	
1	Engg.& Numerical Analysis	2	1	2	2	1	2	5
2	Theory of Structures	3	-	1	3	-	1	6
3	Soil Mechanics	2	2	1	2	2	1	6
4	Reinforced Concrete	3	-	1	3	-	1	6
5	Irrigation & Drainage	2	-	1	2	-	1	4
6	Engg. Economy & Administration	2	-	-	2	-	-	4
7	Traffic Engg.	1	1	1	1	1	1	3
8	Engg. Applications by Computer	1	2	1	1	2	1	4
Total		16	6	8	16	6	8	38
Total hour at Week		30			30			

### CE 301 Theory of Structures

Introduction, Stability and Determinacy of Structures, Types of Trusses,

Analysis of Trusses, Axial Force, Shear, and Bending Moment Diagrams for

Frames and Arches, Analysis of Arches, Influence Lines in Statically

Determinate Structures, Deflections of Statically Determinate Structures, Unit

Load Method, Least Work Method, Conjugate-Beam Method, Deflections of

Statically Indeterminate Structures, Approximate Analysis of Statically

Indeterminate Structures, Consistence Deformation Method, Least Work

Method, Moment Distribution Method, Slop Deflection Method, Stiffness

Method.

### **CE 302 Soil Mechanics**

Description and Classification, Soil Compaction, Stress Distribution,

Principal and effective Stresses, Permeability, Seepage Stress-Strain

Relationship, Undrained Pore water Pressure, Consolidation and Settlement,

Shear Strength and Stress-Strain Relationship for Drained and Undrained

Conditions.

### **CE 303 Reinforced Concrete**

Properties of Concrete and Reinforcing Steel, Flexural Analysis and

Design of Beams (Rectangular, T and L, Doubly Reinforced and General

Shaped Sections), Approximate Analysis of Continuous Beams, Shear and

Diagonal Tension in Beams and Shear Design, Torsional Design of Beams,

Bond, Anchorage, Length of Development, Splices, Serviceability (Crack-

Width and Deflection), One-Way Slabs, Two-Way Slabs, Columns (Short and

long Columns).

### **CE 304 Irrigation and Drainage Engineering**

Introduction, Soil-Water Relation, Relation between Discharge, Depth, Time and Area, Irrigation Efficiencies, Hydraulic Design of Canal, Method of Irrigation, Salinity Problem, Flow of Water into and through the Soil, Drainage (Define, Benefits, etc), dynamic of Groundwater, Depth and Spacing of Drains, Hydraulic Design of Pipe Drains, Drainage Wells.

### **CE 305 Engineering and Numerical Analysis**

Ordinary Differential Equations of the First Order, Ordinary Linear Differential Equations, System of Differential Equations, Fourier Series and Integral, Partial Differential equations.

Approximations and Errors, Solution of Nonlinear Equations (Roots of Equations), System of Linear equations, Curve Fitting (Interpolation and Least Squares Regression), Numerical Integration, Numerical Solution of Ordinary Differential Equations, The Finite-Difference Method for Boundary-Value Problems, Numerical Solution of Partial Differential Equations.

### **CE 306 Traffic Engineering**

Vehicle Speed, Vehicle Headway Distributions, Traffic Volume, Fundamental Relationships between Speed-Flow and Density, Capacity and Level of Service of Two-Line Highways, Intersections Design, Intersection Control, Car Parking, Road User

Safety.

### **CE 307 Engineering Management and Economy**

#### Engineering Economy

Introduction to Science of Economy, Economies for Organization,

Costs, Incomes, Slope and Elasticity of Economical Function, Interest and

Interest's Rules, Depreciation, Alternatives, Economical Studies, Using of Statistical Methods in Engineering Economy.

#### Engineering Management

Definition, Management Duties during Construction of Project, Requirements of Successful Project Planning, Project Planning Methods (BarChart, Net-Work Analysis and Grid Methods) Crash Program Updating the Plan, Resources Allocation.

### **CE 308 Computer Applications in Civil Engineering**

Introduction, Analysis of 2D Frames, Analysis of 2D Trusses, Analysis of

Space Frames, Analysis of Space Trusses, Design of R.C. Frames (According

to ACI Code), Design of Steel Frames (According to AISC), Analysis of

Design of Structures subjected Lateral & Environmental Loadings (Wind &

Earthquake Loadings)