

EIGHTH SEMESTER		CIVIL ENGINEERING					
CF 732		COURSE CONTENTS					
CE-7104 Duration	Project Planning & Management	L	T	P	Max. Marks	Min. Marks	
	3 Hours	3	1	0	70	22	

UNIT - I

Preliminary and detailed investigation methods : Methods of construction, form work and centering. Schedule of construction, job layout, principles of construction management, modern management techniques like CPM/PERT with network analysis. Introduction to network analysis software like primavera.

UNIT - II

Construction equipments : Factors affecting selection, investment and operating cost, output of various equipments, brief study of equipments required for various jobs such as earth work, dredging, conveyance, concreting, hoisting, pile driving, compaction and grouting.

UNIT - III

Contracts : Different types of controls, notice inviting tenders, contract document, departmental method of construction, rate list, conditions of contract, arbitration, administrative approval, technical sanction.

UNIT - IV

Specifications & Public Works Accounts : Importance, types of specifications, specifications for various trades of engineering works.

Various forms used in construction works, measurement book, cash book, materials at site account, imprest account, tools and plants, various types of running bills, secured advance, final bill.

UNIT - V

Site Organization & Systems Approach to Planning : Accommodation of site staff, contractor's staff, various organization charts and manuals, personnel in construction, welfare facilities, labour laws and human relations, safety engineering.

Problem of equipment management, assignment model, transportation model and waiting line models with their applications, shovel truck performance with waiting line method.

Reference Books :-

1. Construction Equipment by Peurify
2. CPM by L.S. Srinath
3. Construction Management by S. Seetharaman
4. CPM & PERT by Weist & Levy
5. Construction, Management & Accounts by Harpal Singh
6. Tendering & Contracts by T.A. Talpasai

Seventh Semester			Civil Engineering			
CE 7341			COURSE CONTENTS			
CE-7101	Advanced Structural Design-II (Steel)	L	T	P	Max. Marks	Min. Marks
Duration	3 Hours	3	0	1	70	22

UNIT - I

Chimneys : Guyed and self supporting steel stacks.

UNIT - II

Bunkers, Silos.

UNIT - III

Water Tanks : Pressed steel tanks, tanks with ordinary plates, square, rectangular, circular with hemispherical bottom and conical bottom.

UNIT - IV

Design of industrial multiplex – multi storey frames, bracings, gantry girder. Design of Tubular structure

UNIT - V

Design of Plate girder and truss girder bridges.

Reference Books :

- (i) Design of Steel Structures – Ramammutham.
- (ii) Design of Steel Structures – Punia.
- (iii) Steel Structure by Ramchandra Vol.II.
- (iv) Steel Structure by Arya & Ajmani.
- (v) Design of Steel Structures – L.S. Negi.

EL-V

COURSE CONTENTS

CE 7351		L	T	P	Max. Marks	Min. Marks
CE-7102	Advance Soil Mechanics	3	0	1	70	22
Duration	3 Hours					

UNIT - I

Shallow Foundations : Type of foundations shallow and deep. Selection criteria, bearing capacity of foundation on cohesion less and cohesive soils. General and local shear failures. Factors effecting B.C. Theories of bearing capacity – Prandle, Terzaghi, Brinch Hansen's, Skempton, Meyerhoj's. IS code on B.C. Determination of bearing capacity. Limits of total and differential settlements. Plate load test.

UNIT - II

Deep Foundation : Pile foundation, Types of piles, estimation of individual and group capacity of piles in cohesion less and cohesive soils, static and dynamic formulae. Pile load test, Settlement of pile group, negative skin friction, under – reamed piles and their design. Piles under tension, inclined and lateral load foundation on expansive & swelling soil, caissons. Well foundation. Equilibrium of wells. Analysis for stability tilts and shifts, remedial measures.

UNIT - III

Soil Improvement Techniques : Compaction, Field and laboratory methods & their choice, proctor compaction test, Factors affecting compaction. Properties of soil affected by compaction. Various equipment for field compaction and their suitability. Field compaction control. Lift thickness.

Soil Stabilization : Mechanical, Lime, Cement, Bitumen, Chemical, Thermal, Electrical – Stabilization and stabilization by grouting. Geo – synthetics, types, functions, materials and uses.

UNIT - IV

Soil Exploration and Foundations on Expansive and Collapsible Soils : Methods of soil exploration. Planning of exploration programme for buildings, for buildings, highways and earth dams. Disturbed and undisturbed samples and samplers for collecting them. Characteristics of expansive and collapsible soils, their treatment, Construction techniques on expansive and collapsible soils. CNS layer.

UNIT - V

Sheet Piles/ Bulkheads and Machine Foundation : Classification of sheet piles/bulkheads. Cantilever and anchored sheet piles, cofferdams, materials, types and application. Modes of vibration. Mass – spring analogy, Natural frequency. Effect of Vibration on soils. Vibration isolation. Criteria for design. Design of block foundation for impact type of machine.

Laboratory Work : Laboratory work will be based in the course of Geo-tech. Engineering I & II as required for soil investigations of engineering projects and covered in the lab. Work of Geotech. Engineering - I.

Seventh Semester (AICTE)					Civil Engineering	
COURSE CONTENTS						
CE 436)	Advance Transportation Engineering	L	T	P	Max. Marks	Min. Marks
Duration	3 Hours	3	0	0	70	22

UNIT – I

Traffic Characteristics : (i) Road user's characteristics - general human characteristics, physical, mental and emotional factors, factors affecting reaction time, PIEV theory. (ii) Vehicular characteristics: Characteristics affecting road design-width, height, length and other dimensions. weight, power, speed and braking capacity of a vehicle.

UNIT – II

Traffic Studies : (i) Spot Speed Studies and Volume Studies. (ii) Speed and Delay Studies-purpose, causes of delay, methods of conducting speed and delay studies. (iii) Origin and Destination Studies (O & D) : Various methods, collection and interpretation of data, planning and sampling. (iv) Traffic Capacity Studies: Volume, density, basic practical and possible capacities, level of service. (v) Parking Studies: Methods of parking studies cordon counts, space inventories, parking practices.

UNIT – III

Traffic Operations and Control : (i) Traffic regulations and various means of control. (ii) One way streets- advantages and limitations. (iii) Traffic signals- isolated signals, coordinated signals, simultaneous, alternate, flexible and progressive signal systems. Types of traffic signals, fixed time signals, traffic actuated signals, speed control signals, pedestrian signals, flashing signals, clearance interval and problems on single isolated traffic signal.

UNIT – IV

Street Lighting : (i) Methods of light distribution. (ii) Design of street lighting system. (iii) Definitions- Luminaire, foot candle, Lumen, utilization and maintenance factors. (iv) Different types of light sources used for street lighting. (v) Fundamental factors of night vision.

UNIT – V

Accident Studies & Mass Transportation : (i) Accident Studies : Causes of accidents, accident studies and records, condition and collision diagram, preventive measures. (ii) Expressways and freeways, problems on mass transportation and remedial measures, brief study of mass transportation available in the country.