RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Civil Engineering, V-Semester

Departmental Elective CE- 503 (A) Structural analysis-II

Unit. I

Moment distribution method in analysis of frames with sway, analysis of box frames, analysis of portals with inclined members, analysis of beams and frames by Kani's method.

Unit. II

Plastic analysis of beams and frames.

Unit. III

Analysis of tall frames, wind and earthquake loads, codal provisions for lateral loads. Approximate analysis of multistory frames for vertical and lateral loads.

Unit. IV

Matrix method of structural analysis: force method and displacement method.

Unit. V

Influence lines for intermediate structures, Muller Breslau principle.

Reference Books :-

1. Wang C.K. Intermediate structural analysis, McGraw Hill, New York.
2. Kinney Streling J. Indeterminate structural Analysis, Addison Wesley.
3. Reddy C.S., Basic Stgructural Analysis, Tata McGraw Hill Publishing Company, New Delhi.
4.Norris C.H.,Wilbur J.B. and Utkys. Elementary Structural Analysis, McGraw Hill International,Tokyo.
5. Weaver W & Gere JM, Matrix Methods of Framed Structures, CBS Publishers & Distributors, Delhi

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Civil Engineering, V-Semester

Departmental Elective CE- 503 (B) Construction Planning & Management

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.

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, security deposit and earnest money, 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 modals 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

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Civil Engineering, V-Semester

Departmental Elective CE- 503 (C) Quantity surveying & Costing

Unit – I

Introduction: Purpose and importance of estimates, principles of estimating. Methods of taking out quantities of items of work. Mode of measurement, measurement sheet and abstract sheet; bill of quantities. Types of estimate, plinth area rate, cubical content rate, preliminary, original, revised and supplementary estimates for different projects.

Unit – II

Rate Analysis: Task for average artisan, various factors involved in the rate of an item, material and labour requirement for various trades; preparation for rates of important items of work. Current schedule of rates. (C.S.R.)

Unit – III

Detailed Estimates: Preparing detailed estimates of various types of buildings, R.C.C. works, earth work calculations for roads and estimating of culverts Services for building such as water supply, drainage and electrification.

Unit – IV

Cost of Works: Factors affecting cost of work, overhead charges, Contingencies and work charge establishment, various percentages for different services in building. Preparation of DPR.

Unit – V

Valuation: Purposes, depreciation, sinking fund, scrap value, year's purchase, gross and net income, dual rate interest, methods of valuation, rent fixation of buildings.

Reference Books:-

1. Quantity Surveying & Costing – B.N. Datta
2. Estimating & Costing for Civil Engg. – G.S. Birdi
3. Quantity surveying & costing – Chakraborty
4. Estimating & Costing – S.C. Rangawala

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Civil Engineering, V-Semester

Departmental Elective CE- 503 (D) Marine Construction

Unit – I

History of water transportation at world level and at national level development and policy, classification of harbours, natural and artificial. Major ports in India, administrative set up. 2.

Unit – II

Harbour Planning: Harbour components, ship characteristics, characteristics of good harbour and principles of harbour planning, size of harbour, site selection criteria and layout of harbours. Surveys to be carried out for harbor planning

Unit – III

Natural Phenomena: Wind, waves, tides formation and currents phenomena, their generation characteristics and effects on marine structures, silting, erosion and littoral drift.

Unit – IV

Marine Structures: General design aspects, breakwaters -function, types general design principles, wharves, quays, jetties, piers, pier heads, dolphin, fenders, mooring accessories – function, types, suitability, design and construction features.

Unit – V

Docks and Locks: Tidal basin, wet docks-purpose, design consideration, operation of lock gates and passage, repair docks -graving docks, floating docks.

References books: –

1. A course in docs and harbours: S. P. BINDRA
2. Harbour docs and tunneliing: R. SRINIVASAN
3. Doc and harbour engineering: OZA