

CE 425 ESTIMATION & CONSTRUCTION PLANNING**Course Description and Objective:**

By the end of the course students will be in a position to estimate quantities of various items of a residential building. He will also be in a position to estimate the earth work required in roads and canals. He will be able to calculate rates of various items of work. He will learn the methods of building valuation and rent fixation.

Course Outcomes:

- Prepare quantity estimates for buildings
- roads, rails and canal works
- Calculate the quantity of materials required for civil engineering works as per specifications
- Evaluate contracts and tenders in construction practices

UNIT – I

Procedure of Estimating : Methods of estimating; Main items of work; Deduction for openings; Degree of accuracy; Units of measurement.

Methods of Building Estimates : Individual wall method; Centre line method; Arch masonry calculation; Estimate of steps.

UNIT – II

Estimate of Buildings : Centre line method - Estimate of residential building ;Estimate of a building from line plan.

Estimate of Buildings : Individual Wall Method - Estimate of residential building; Estimate of a building from line plan.

UNIT – III

Estimate of RCC works : Standard hooks and cranks; Estimate of RCC slab; RCC beam; RCC T-beam slab and RCC column with foundation.

Road Estimate : Estimate of earthwork; Estimate of pitching of slopes; Estimate of earthwork of road from longitudinal sections; Estimate of earthwork in hill roads.

Canal Estimate : Earthwork in canals–different cases; Estimate of earthwork in irrigation channels.

UNIT – IV

Specifications : Purpose and method of writing specifications; General specifications. Detailed Specifications for Brick work; R.C.C; Plastering; Mosaic Flooring; R.R.Stone Masonary.

Analysis of Rates : Task or out – turn work; Labour and materials required for different works; Rates of materials and labour; Preparing analysis of rates for the following items of work:

- i) Concrete ii) RCC Works iii) Brick work in foundation and super structure
- iv) Plastering v) CC flooring vi) White washing.

UNIT – V

PWD Accounts and Procedure of Works : Organization of Engineering department; Work charged establishment; Contract; Tender; Tender notice; Tender Schedule; Earnest money; Security money; Measurement book; Administrative approval; Technical sanction; Plinth area; Floor Area; Carpet area; Approximate Estimate; Plinth area estimate; Revised Estimate; Supplementary estimate.

Valuation : Cost; Price & value; Methods of valuation; Out goings; Depreciation; Methods for estimating cost depreciation; Valuation of building.

Miscellaneous Topics : Gross income; Net income; Scrap value; Salvage value; Obsolescence; Annuity; Capitalized value; Years purchase; Life of structures; Sinking fund; Standard rent; Process of fixing standard rent; Mortgage.

TEXT BOOK :

1. B.N. Dutta, "Estimating & Costing in Civil Engineering", 22nd ed., U.B.S. Publishers & Distributors, New Delhi, 2001.

REFERENCE BOOK :

1. S. C. Rangwala, "Valuation of Real properties", 12th ed., Charotar Publishing House, Anand, 2002.