

B.E. Semester: VI
Department of Civil Engineering
Subject Name: Estimation Costing and Valuation (CV603-N)
Course Category: Program Course Core (PCC)

A. Objectives of the Course:

- Determination of quantities of items and labour requirement of civil engineering works
- Preparation of estimate of the civil engineering works.
- To develop a student's skills in analyzing fluid flows through the proper use of modelling and the application of the basic fluid-flow principles

B. Teaching & Evaluation Scheme:

Teaching Scheme				Credit	Evaluation Scheme					Total Marks
L	T	P	Total		Theory		IE	CIA	Pra/Viva	
hrs	hrs	hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	
3	0	2	5	4	3	70	30	20	30	150

C. Detailed Syllabus:

1. Introduction:

Purpose of Estimating and Valuation, Types of Estimates

2. Estimate of Civil Structures:

Main Items and Their Unit of Measurement, Methods of Measurement, Methods of Estimating Quantities, Estimating Quantities of Building, Estimation of Quantity of Load Bearing Structure With Single Room and Two Rooms, Estimation of Quantity Single Storied Residential Building, Estimation of Quantity Different R.C.C. Structures, Estimation of Quantity of Water Supply and Sanitary Works, Estimation of Quantity of Culverts, Road Estimating, Estimation of Quantity of Trusses

3. Specification:

Objectives and Importance of Specification, Specification of Materials, Specification of Works, Specification as per Building Classification, Language of Specific Writing

4. Market Survey, Rate Analysis & Billing:

Traditional and Modular Materials, Market Survey of Materials of Construction, Wages of Labour, Tools Plant and Equipment of Construction

Rate Analysis: Prerequisites, Factors Affecting Rate Analysis, Over Head Expenses, Procedure for Rate Analysis, Schedule of Rates, Task Work: Labour Requirement for Different Works, Material Requirement for Different Works, Rate Analysis of Different Items of Work

Abstracting and Billing: Purpose of Abstract, Preparation of Abstract, Measurement and Billing, Checking of Bills and Final Bill Book Keeping: Work Abstract, Material at Site Account, Measurement Book, Muster Role Hiring And Maintenance of Equipment, Record of Bills, Vouchers and Receipt Book

5. Tenders and Contracts:

Tender Notice, Tender Document, Contract Contractor and Terms, Conditions of Contract, Agreement, Form of Contract, Responsibility of Owner, Architect, Contractor and Engineer

6. Valuation:

Purpose of Valuation, Types of property- Depreciation, Sinking Fund, Lease Hold and Free Hold Property, Obsolescence, Gross Income, Outgoing and Net Income, Capitalized Value and Year's Purchase. Rental Method of Valuations, and Typical Problems

D. Lesson Planning:

Unit No	Title of the Unit	Minimum Hours	Weightage (%)
1	Introduction	02	05
2	Estimate of Civil Structures	20	45
3	Specification	05	11
4	Market Survey, Rate Analysis & Billing	07	15
5	Tenders And Contracts	06	13
6	Valuation	05	11
Total:		45	100

E. List of Practical/Assignments:

- Detailed Estimate of Residential Building
- Detailed Estimate of R.C.C. Structures
- Detailed Estimate of Water Supply & Sanitary Work
- Detailed Estimate of Culverts and Bridges
- Detailed Estimate of Earthwork for Roads
- Detailed Estimate of Steel Roof Trusses
- Specifications
- Rate Analysis of Different Items for Construction Work
- Tenders and Contracts
- Valuation

F. Instructional method and pedagogy (Continuous Internal Assessment Scheme CIA):

- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed
- Lecture may be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lectures, practical and tutorial which carry 05 marks
- At regular intervals assignments is given. In all, a student should submit all assignments of 05 marks each
- Classroom participation and involvement in solving the problems in tutorial rooms carries 05 marks
- Viva voce will be conducted at the end of the semester of 05 marks
- One internal exam of 30 marks is conducted as a part of mid semester evaluation

G. Students Learning Outcomes:

On the successful completion of this course

- The students will get a diverse knowledge of estimating, costing and professional practice, which will be use full in tackling real life problems
- The students will be able to understand the procedure to carry out the estimation and steps to prepare reports of construction works
- The students will learn the purpose and importance of valuation

H. Recommended Study Materials:

a. Text book & Reference Books:

1. N. Dutta, Estimating and Costing In Civil Engineering, Ubs Publishers Distributors Ltd.
2. S. C. Rangwala, Estimating And Costing, Charotar Publishing House, Anand
3. G. S. Biridi, Textbook of Estimating & Costing, Dhanapat Rai & Sons. Delhi
4. M.Chakroborti, Estimating, Costing, Specification and Valuation.Calcutta
5. P.W.D. Hand Book Is Codes
6. Patil, B.S., Civil Engineering Contracts, Vol. – I, Orient Longman Publication, 1998.
7. Rangwala, S.C., Elements of Estimating and Costing, Professional practice, Charotar Publishing House, Anand
8. Aggarwal, A., Upadhyay, A.K., Civil Estimating, Costing &Valuation, S.K Kataria & Sons, New Delhi
9. Chandola, S.P. and Vazirani, Estimating and Costing, Khanna Publication

b. Indian Standards:

1. IS: 1200 (Part 1 – 28), Methods of Measurement of Building and Civil Engineering Works
2. IS: 3861: 2002, Method of Measurement of Plinth, Carpet and Rentable Area of Buildings

c. Web Materials:

1. <http://nptel.iitm.ac.in>
2. <http://www.mvsengineering.com>
3. bieap.gov.in