

B.E. Semester: VIII
Civil Engineering
Subject Name: Estimation, Costing & Valuation (CV802)

A. Course objective :

- Determination of quantities of items and labour requirement of civil engineering works.
- Preparation of estimate of the civil engineering works.
- Preparation of specification of construction items.
- To introduce the students in depth knowledge of professional practice as well the quantity analysis of construction works like, multi-storied structures, Water works & sanitary works, Irrigation works, Road estimates, culverts, etc.

B. Teaching /Examination Scheme

Teaching scheme				Total Credit	Evaluation Scheme					Total
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract/ Tut.	
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	
03	02	00	05	05	03	70	30	20	30	150

C. Detailed Syllabus

Module I

- 1 Introduction:** Purpose of estimating and valuation, Types of estimates.
Building Estimate: 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 & 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 and bridges, Road estimating, Estimation of quantity of Trusses.
 Introduction to estimates of other Civil engineering structures.

Specification: Objectives and importance of specification, Specification of materials, specification of works, specification as per building classification, Language of specific writing

Module II

- 2 Market Survey:** 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

Module III

- 3 Tenders And Contracts:** Tender notice, tender document, Contract-contractor and terms and conditions of contract, Agreement, Form of Contract, Responsibility of owner, Architect, Contractor and Engineer

Book Keeping: Work abstract, material at site account, measurement book, muster role hiring and maintenance of equipment, record of bills, vouchers and receipt book

Module IV

- 4 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

Sr. No.	Title of the Unit	Minimum Hours	Weightage
1.	Introduction & Building Estimate & Specification	15	25%
2	Market Survey, Rate Analysis and Abstracting and Billing	12	25%
3	Tenders And Contracts and Book Keeping	9	25%
4	Valuation	9	25%

E. List of Tutorial

1	Detailed Estimate of Residential buildings
2	Detailed Estimate of R.C.C. Structures
3	Detailed Estimate of Water supply & Sanitary work

4	Detailed Estimate of Culverts and Bridges
5	Detailed Estimate of Earthwork for Roads
6	Detailed Estimate of Steel Roof Trusses
7	Specifications
8	Rate Analysis of Different Items for Construction work
9	Tenders and Contracts
10	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 and practical which carries marks.
- At regular intervals assignments will be given. Students should submit all assignments during given period.
- Classroom participation and involvement in solving the problems in Tutorial rooms Carries Marks
- Internal exam of 30 marks will be conducted as a part of mid semester evaluation.
- Experiments shall be performed in the field related to course contents.
- The course includes a practical, where students have an opportunity to build an appreciation for the concept being taught in lectures.

G. Students Learning Outcomes:

- 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 Books:

1. B. 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

B. Reference Books:

1. Patil, B.S., Civil Engineering Contracts, Vol. – I, Orient Longman Publication, 1998.
2. Rangwala, S.C., Elements of Estimating and Costing, Professional practice, Charotar Publishing House, Anand.
3. Aggarwal, A., Upadhyay, A.K., Civil Estimating, Costing &Valuation, S.K Kataria & Sons, New Delhi.
4. Chandola, S.P. and Vazirani, Estimating and Costing, Khanna Publication.