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Estimating Costing and Valuation — Complete Syllabus

BTEUP Diploma in Civil Engineering • 5th Semester • Session 2026-27
Subject 5.2 (Practicum/Theory) • Total 100 Marks • 3 Credits • L 1 – P 4

Examination Scheme

Code	Paper	Type	L - P	Credits	Internal	External	Total
5.2	Estimating Costing and Valuation	Practicum/ Theory	1 - 4	3	Theory 20 + Practical 20	Theory 60 (3 hrs)	100
Estimating Costing and Valuation Total				3	40	60	100

What This Subject Aims To Do

To learn the procedure for estimating and costing of civil engineering works, perform rate analysis for different items associated with construction projects, and use software for detailed estimates related to civil infrastructural projects.

Unit-Wise Complete Topic List

Unit	Topic	Periods	Marks Share
1	Fundamentals of Estimating and Costing	10	10%
2	Estimate	20	25%

3	Rate Analysis	15	25%
4	Tender and Contractorship	15	25%
5	Real Estate (Regulation and Development) Act-2016 and Valuation	10	15%

Unit 1 — Fundamentals of Estimating and Costing (10 Periods, 10%)

Topics: Estimating and costing — meaning, purpose, administrative approval, technical sanction and budget provision; measurement: units of measurement for various items of work, rules for deduction in different category of work as per IS:1200; types of estimates — approximate and detailed estimate; types and uses of estimates: revised estimate, supplementary estimate, repair and maintenance estimate, renovation estimate; roles and responsibility of estimator; standard formats of measurement sheet, abstract sheet, face sheet; modes of measurement and desired accuracy in measurements for different items of work as per IS:1200.

Unit 2 — Estimate (20 Periods, 25%)

Topics: Detailed estimate — definition and purpose, data required for detailed estimate — civil cost, GST, contingencies, supervision charges, agency charges, work charged establishment, procedure for preparation of detailed estimate — taking out quantities and abstracting; long wall and short wall method, centre line method; bar bending schedule for footing, column, beam, lintel, chajja and slab elements; earthwork — quantities for roads, embankment and canal by — mid sectional area method, mean sectional area method, prismoidal and trapezoidal formula method; a small residential building with a flat roof comprising of — two rooms with W.C., bath, kitchen and verandah; WBM road and pre-mix carpeting; single span RCC slab culvert; earthwork for plain and hill roads; RCC work in beams, slab, column and lintel, foundation; 10 users septic tank.

Unit 3 — Rate Analysis (15 Periods, 25%)

Topics: Calculation of quantities of materials for: cement mortars of different proportion, cement concrete of different proportion, brick/stone masonry in cement mortar of different proportion, plastering, pointing and painting, D.P.C. and flooring; categories of labours, their daily wages, types and number of labours for different items of work; rate analysis: definition, purpose and importance, procedure for rate analysis; preparing rate analysis of different items of work pertaining to buildings and roads.

Unit 4 — Tender and Contractorship (15 Periods, 25%)

Topics: Tender, tender forms and documents, tender notice, submission of tender and deposit of earnest money, security deposit, retention money, maintenance period; meaning of contract, types of contracts, their advantages, disadvantages and suitability, system of payment; exercises on writing detailed specifications of different types of building works: earthwork, brick work and RCC work.

Unit 5 — Real Estate (Regulation and Development) Act-2016 and Valuation (10 Periods, 15%)

Topics: Introduction: purpose and salient features of Act; definition and functions of real estate projects, promoter, agent and allottees; registration of real estate projects; valuation: purpose of valuation, principles of valuation; definition of various terms related to valuation like depreciation, sinking fund, salvage and scrap value, market value, fair rent, year's purchase etc.

Reference Books (as listed in the syllabus)

- Datta, B.N., Estimating and Costing in Civil engineering, UBS Publishers Distributors Pvt. Ltd., New Delhi.
- Peurifoy, Robert L., Oberlender, Garold, Estimating construction cost (fifth edition), McGraw Hill Education, New Delhi.
- Rangwala, S.C., Estimating and Costing, Charotar Publishing House Pvt. Ltd., Anand.
- Birdie, G.S., Estimating and Costing, Dhanpat Rai Publishing Company (P) Ltd., New Delhi.
- Patil, B.S., Civil Engineering Contracts and Estimates, Orient Longman, Mumbai.
- Chakraborti, M., Estimating and costing, specification and valuation in civil engineering, Monojit Chakraborti, Kolkata.
- CPWD and PWD Schedule of Rates.
- Ministry of Road Transport and Highways (MORT&H) Specifications and Analysis of Schedule of Rates.
- D.V.Gupta, Vikram Singh, Quantity Surveying & valuation of Building & Civil Works, Asian Publishers, Muzaffarnagar, ISBN No. 978-93-5502-154-0.

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Source: BTEUP 3rd Year curriculum (folder2627), approved in C.D.C. meeting held on 16.07.2026. Topic lists follow the official syllabus; short explanations are the author's own plain-English summaries, not syllabus text.

Please confirm with your own polytechnic for any local changes.