

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN ENVIRONMENTAL ENGINEERING

SEMESTER: V

Subject Name: **Estimating and Costing of Environmental Structures**

Sr. No.	Course Content
1.	Introduction: 1.1 Introduction of drawings of various Environmental engineering structures 1.2 Recall methods of taking out quantities (i) Centerline method (ii) Long wall and short wall method 1.3 Standard format of measurement sheet, abstract sheet and its use.13
2.	Detailed Estimate: 2.1 Grit chamber 2.2 Primary settling tank 2.3 Sludge drying be 2.4 Aeration tank 2.5 Septic Tank with soak pit 2.6 Chimney 2.7 Surface Drain 2.8 Sewer Line
3	Tender: 3.1 Types of Tender 3.2 Security of tenders 3.3 Procedure for acceptance of tender. 3.4 Tender notice and contract agreement 3.5 Powers of accepting tenders 3.6 various types of bills 3.6.1 Running bill 3.4.2 Final bill 3.6.3 First and final bill.
4	Contract: 4.1 Advantages & disadvantages of carrying-out works by department & on contract. 4.2 Factors governing the selection of work to be done under contract or on departmental work basis. 4.3 Types of contract, 4.4 Conditions of contract 4.5 Termination of contract 4.6 Define, Tender, Earnest Money, Security Deposits
5	Rate Analysis : 5.1 Rate analysis of important items e.g. Canal, Stone masonry, Acid resisting tile flooring, Sewer pipe line (effluent pipe line). 5.2 Special item related to environment structures.

6	Valuation: 6.1 Define terms: Cost, Price, Value, Real estate, Personal estate. 6.2 Objects of valuation. 6.3 Mortgage, freehold property, leasehold property. 6.4 Property income, gross income, net income, outgoing. 6.5 Depreciation and obsolescence. 6.6 Types of Value 6.7 Factors affecting the value of a property. 6.8 Characteristics of good valuer. 6.9 Sinking fund : its computation and application. 6.10 Valuation methods for property. 6.11 Installments for repayment of loan.
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Term Work:

1. Detailed estimate of Septic Tank with soak pit
2. Detailed estimate of Grit chamber
3. Detailed estimate of Primary settling tank
4. Detailed estimate of Sludge drying bed
5. Detailed estimate of Aeration tank
6. Detailed estimate of Surface Drain
7. Detailed estimate of Chimney
8. Detailed estimate of Sewer Line
9. Tutorial based on Tender
10. Tutorial based on Contract
11. Rate Analysis
12. Problems on Valuation

Note:

Use Computer Software for Rate analysis and Valuation examples.

Reference Books:

1. Estimating & Costing in Civil Engg. - Theory and practice, B. N. Datta.
2. I.S. code. 1200 (Part I to XXX), B.I.S., Delhi.
3. Estimating & Costing, S. C. Rangwala.
4. Estimating & Costing, G.S.Birdie.
5. Estimating & Costing, N. A. Shah.
6. Theory & Practice of Valuation, Roshan H. Namavati.
7. Valuation of Real properties, S. C. Rangwala.
8. Estimating & Costing, M. C. Chakraborty.
9. Estimating & Costing, Vazirani & Chandola.
10. Civil Estimating, Costing & Valuation, Amarjit Aggarwal, A K Upadhyay.