

GUJARAT TECHNOLOGICAL UNIVERSITY

Environmental Engineering

B. E. SEMESTER: VI

Subject Name: **Estimating, Specifications and Project Management**

Sr. No.	Course Contents	Total Hrs
1.	Construction Technology: - Subsurface investigation - Foundations - Masonry Construction - Plain and Reinforced Concrete construction - Plastering	6
2.	(a) Elements of Estimating and Costing: Types of estimate: Detailed estimate and approximate estimate, Methods of estimate: Long wall short wall method and centre line method Units of measurement: Modes and units of measurement for different types of trades Quantity survey, Uses of estimates. (b) Rate Analysis: Prerequisites, factors affecting rate analysis; procedure for rate analysis; schedule of rates; task work; revision of rates. (c) Detailed estimation of full scale water treatment/sewage treatment/effluent treatment plant.	16
3.	Specifications: Importance: requisites of good specifications; classification of specifications; specifications of typical items; standard specification.	4
4.	Contracts: Meaning and important legal aspects of contracts; types of contracts and their suitability; contract documents; termination of contracts; contractual disputes and arbitration, standing contracts.	4
5.	Conditions Of Contract: Important requisites of conditions of contract; subject matter of conditions of contract; typical conditions of contract.	4
6.	Tenders: Meaning, types, content, procedure, tender documents, unbalanced tender; scrutiny and acceptance of tender.	2

7.	Project Management with Network Technique: Project planning, scheduling, controlling, bar chart and mile stone charts, elements of network, development of network, time estimates, time computation, network analysis-PERT and CPM	12
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Term work:

1. Construction Technology: Sketches related to brick masonry, Foundation
2. Methods of Quantity estimates : Long-wall short wall method and centre line method
3. Examples: Rate Analysis
4. Specifications
5. Contracts and condition of contracts
6. Tenders
7. Project management: PERT,CPM (examples)
8. Detailed estimate of full scale water treatment/sewage treatment/effluent treatment plant.

Reference Books:

1. Estimation & Costing in civil Engineering - B.N. Dutta.
2. Project Planning and Control with PERT & CPM- Dr. B.C. Punamia.
3. Elements of Estimation & Costing – Rangwala.
4. Estimation, costing, specification & valuation in civil Engg. By M.Chakroborti.