Marwadi University

Master of Technology

Construction Project Management

Advanced Quantity Estimation

01CP0202

Objective of the Course:

- To work out the quantity of material required for various activities of the construction and infrastructural facilities
- To understand the importance of specifications, its types and drafting general specifications for civil works.
- To understand the market rates and rate analysis for construction work
- To understand the Valuation Process in construction.

Credit Earned: 4

Students learning outcomes:

After successful completion of the course, it is expected that student will be able to,

1. Estimate the quantities of different items of work and prepare Bill of Quantities for a Construction Project.
2. Analyze the rates of different items of work and work out estimated cost of the construction project.
3. Conduct the Valuation process on Existing and New Structures.
4. Understand the importance of Specifications in Construction as per the Indian Standards.

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	IA (M)	CSE (I)	Viva (V)	Term Work (TW)	
03	01	00	04	50	30	20	25	25	150

Detailed Syllabus

Sr No.	Title of the unit	Number of hours
1	**Quantity Estimation for Buildings**	**12**
	Definition, Types of Estimates, Need for Estimation, Types of Estimates, Estimating various quantities of building, Units, Deductions in Civil Works. Estimate the Quantites of Brickwork, Plaster, PCC, RCC. Estimate for panelled and glazed doors, windows, ventilators, Estimation of Steel for RCC works.	

2	**Quantity Estimation for other Structures**	**12**
	Estimating of septic tank, soak pit, sanitary and water supply installations, water supply pipe line, sewer line, tube well, open well Estimate of bituminous and cement concrete roads, estimate of retaining walls, culverts, estimating of irrigation works	
3	**Specifications and Rate analysis**	**06**
	Schedule of rates, Market rates, Analysis of rates, Specifications, Detailed and general specifications for buildings and Roads.	
4	**Valuation**	**12**
	Definition, Price-cost, depreciation, sinking fund. Factor affecting value, rent and standard rent, Years Purchase and valuation tables. Methods of valuation for buildings and land.	
	Total	**42**

Suggested Theory Distribution

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
15%	15%	20%	20%	20%	10%

Instructional Method and Pedagogy:

1. Use of Learning Management system like canvas
2. Demonstration through presentations on power point and videos and lectures
3. Brainstorming and group discussion sessions
4. Collaborative learning

Recommended Study Material

Text Books:

1. Dutta, B.N., "Estimating and Costing in Civil Engineering", UBS Publishers & Distributors Pvt. Ltd., 2003

2. Kohli, D.D and Kohli, R.C., "A Text Book of Estimating and Costing (Civil)", S.Chand & Company Ltd., 2004

Reference Books:

1. B. N. Dutta, Estimation and Costing In Civil Engineering, Ubs Publishers Distributors, Ltd.
2. S. C. Rangwala, Estimating and Costing, Charotar Publishing House.

3. G. S. Birdie, Textbook of Estimating & Costing, Dhanpat Rai and Sons, Delhi.
4. M. Chakraborti, Estimating, Costing, Specification and Valuation.
5. P.W.D. Handbook and SOR, IS Code – 1200.
6. A. S. Kotadia, Professional Practice and Valuation, Mahajan Publications.
7. S. C. Rangwala, Valuation of Real Properties, Charotar Publication.