23SO8551: ESTIMATION, SPECIFICATION AND CONTRACTS
(SYLLABUS)

Course Code	23S08551	Year	III	Semester	I
Course Category	Skill Enhancement	Branch	CIVIL	Course Type	Theory and Particles
Credits	2	L-T-P	0-1-2	Prerequisites	Surveying, Computer aided Building Drawing Using AUTO CAD
Continuous Internal Evaluation	30	Semester End Evaluation	70	Total Marks:	100

Course Learning Objectives:

The objective of this course is to enable the students to:

1. Understand the quantity calculations of different components of the buildings.
2. Understand the rate analysis of different quantities of the buildings components.
3. Learn various specifications and components of the buildings.

Course Outcomes:

Course will enable the student to:

CO	Statement	Blooms level
CO 1	**Understand** and explain different types of contracts, contract documents, and standard specifications for building construction. Interpret general building works and procurement practices, including e-procurement and reverse auctions	**L2**
CO 2	**Develop** the ability to estimate quantities and costs using both approximate and detailed methods, including long wall–short wall and centerline methods.	**L3**
CO 3	**Apply** the principles of rate analysis to compute unit rates for key construction activities such as earthwork, masonry, concrete, plastering, and painting, including reinforcement schedules.	**L4**
CO 4	**Prepare** complete building estimates using manual and software-based methods and interpret abstract estimates and bar bending schedules effectively.	**L4**
CO5	**Utilize** construction estimation techniques and standard software tools to generate comprehensive, accurate estimates and project costing documentation.	**L4**

Course Articulation Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	3	2	2	2	-	-	-	2	1	2	3	2
CO2	3	3	2	1	2	-	-	-	2	2	2	3	2
CO3	3	3	3	2	3	-	-	-	2	2	2	3	3
CO4	3	2	3	2	3	-	-	-	2	2	2	3	2
CO5	2	2	3	2	3	-	-	-	2	2	2	3	2
Avg	3	3	3	2	3	-			2	2	2	3	2

Syllabus

COURSE CONTENT		
Contracts & Valuation		
Experiment 1	Study of types of contracts, contract documents, and conditions of contract	CO1, CO5
Experiment 2	Valuation techniques and introduction to e-procurement and reverse auctions	
Experiment 3	Study of standard specifications for different building construction items	
Quantity Estimation Techniques		
Experiment 4	Preparation of approximate estimate using plinth area and cubic content method	CO1, CO2
Experiment 5	Preparation of detailed and abstract estimates	
Rate Analysis and Reinforcement Scheduling		
Experiment 6	Rate analysis for major items of work like masonry, concrete, plastering, painting	CO3, CO4, CO5
Experiment 7	Earthwork calculation for roads and canals	
Experiment 8	Bar bending schedule (BBS) preparation	
Detailed Estimation (Individual Wall Method)		
Experiment 9	Estimating using Long wall & Short wall method (Single room)	CO2, CO3, CO4
Experiment 10	Estimating using Long wall & Short wall method (Double room)	
Detailed Estimation (Centre Line Method & Software)		
Experiment 11	Estimating using Centre Line Method (Single room)	CO2, CO4, CO5
Experiment 12	Estimating using Centre Line Method (Double room)	
Experiment 13	Introduction to Estimation Software (e.g., Building Estimator / MS Excel-based tools)	

Learning Resource(s)
Text Book(s)

[1]. 'Estimating and Costing' by B.N.Dutta,UBS publishers, 2000.

[2]. 'Civil Engineering Contracts and Estimates' by B.S.Patil, Universities Press (India) Pvt. Ltd., Hyd

[3]. Construction Planning and Technology' by Rajiv Gupta, CBS
Publishers & Distributors Pvt. Ltd. New Delhi.

[4]. 'Estimating and Costing'by G.S. Birdie.

Reference Book(s)

[1]. 'Standard Schedule of rates and standard data book' by public work department.

[2]. IS1200 (PartsItoXXV-1974/ Method of Measurement of Building Civil Engg Works–B.I.S.)

[3]. 'Estimation, Costing and Specifications' by M.Chakraborthi; Laxmi publications.

[4]. National Building Code