

## ESTIMATION AND COSTING

<b>VII Semester: CE</b>								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACE017	Core	L	T	P	C	CIA	SEE	Total
		3	1	-	4	30	70	100
<b>Contact Classes: 45</b>		<b>Tutorial Classes: 15</b>		<b>Practical Classes: Nil</b>			<b>Total Classes: 60</b>	
<p><b>COURSE OBJECTIVES:</b>  <b>The course should enable the students to:</b></p> <p>I. Summarize the basic principal and standard methods for working out quantities in estimating.            II. Demonstrate the detailed estimate of buildings and workout rate analysis of the various items of work.            III. Understand the material requirements as per specified norms and standards.            IV. Assess the valuation of buildings and provide practical knowledge of standard specifications of items of buildings construction.</p> <p><b>COURSE OUTCOMES (COs):</b></p> <p>CO 1: Understand the preparation of an Abstract Estimate and detailed estimate of building.            CO 2: Determine earth work quantity for roads and canals.            CO 3: Understand preparation of Notice inviting tender document for bidding, tendering process and examining rate analysis of civil works.            CO 4: Design bar bending schedule for reinforcement works, Identify specifications and tendering process for contracts and create various tender documents for bidding purpose.            CO 5: Evaluate the valuation of building for different specifications and create new technologies to develop concrete estimating methods.</p> <p><b>COURSE LEARNING OUTCOMES (CLOs):</b></p> <ol style="list-style-type: none"> <li>1. Interpreting the preparation of an Abstract Estimate for a Residential Building.</li> <li>2. Organizing the units for various quantities of items of work.</li> <li>3. Associating the preparation of detailed estimation of building.</li> <li>4. Demonstrate the calculation of earth work quantity for roads and canals.</li> <li>5. Evaluate the quantity of earth work.</li> <li>6. Understand how to prepare a Notice inviting tender document for bidding.</li> <li>7. Analyze the building as per new estimated cost.</li> <li>8. Have knowledge on specifications and tendering process for contracts.</li> <li>9. Examining the rate analysis of various items of civil works.</li> <li>10. Create new technologies to develop concrete estimating methods for more ethical and enhanced usage.</li> <li>11. Calculate the quantities for different items of work.</li> <li>12. Identify specifications and tendering process for contracts.</li> <li>13. Classify the types, formation, terms and conditions in contracts and arbitration.</li> <li>14. Prepare a bid analysis for a given sub trade.</li> <li>15. Create various Tender documents for bidding purpose.</li> <li>16. Design and Prepare Bar bending schedule for reinforcement works and steel calculation.</li> <li>17. Evaluate the valuation of building for different specifications.</li> </ol>								

<p>18. Possess the knowledge and skills for employability.  19. Will able to value a property, price escalation recommendations and auditing.  20. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.</p>		
<b>UNIT-I</b>	<b>GENERAL ITEMS OF WORK IN BUILDING</b>	<b>Classes: 12</b>
<p>General items of work in building – Standard units principles of working out quantities for detailed and abstract estimates – Approximate method of estimating. Detailed estimates of buildings.</p>		
<b>UNIT -II</b>	<b>EARTHWORKS</b>	<b>Classes: 12</b>
<p>Earthwork for roads and canals.</p>		
<b>UNIT-III</b>	<b>RATE ANALYSIS</b>	<b>Classes: 12</b>
<p>Rate analysis - Working out data for various items of work over head.  Rate analysis - Contingent charges.</p>		
<b>UNIT-IV</b>	<b>REINFORCEMENT BAR BENDING</b>	<b>Classes: 12</b>
<p>Reinforcement bar bending and bar requirement schedules.  Contracts – Types of contracts – Contract documents – Conditions of contract.</p>		
<b>UNIT-V</b>	<b>VALUATION</b>	<b>Classes: 12</b>
<p>Valuation of buildings, standard specifications for different items of building construction.</p>		
<b>Text Books:</b>		
<ol style="list-style-type: none"> <li>1. B. N. Dutta, “Estimating and Costing”, UBS publishers, 2000.</li> <li>2. G. S. Birdie., “Estimating and Costing”, DhanpatRai publications, 1988.</li> </ol>		
<b>Reference Books:</b>		
<ol style="list-style-type: none"> <li>1. Standard schedule of rates and standard data book by public works department, 2015.</li> <li>2. I.S. 1200 (Parts I to XXV – 1974/method of measurement of building and Civil Engineering works – B.I.S)</li> <li>3. M. Chakraborti, “Estimation, costing and specifications”, Laxmi publications, 1982.</li> <li>4. National building code, 2015.</li> </ol>		
<b>Web References:</b>		
<ol style="list-style-type: none"> <li>1. <a href="https://en.wikipedia.org/wiki/Estimation">https://en.wikipedia.org/wiki/Estimation</a></li> <li>2. <a href="https://theconstructor.org/practical-guide/quality-control/">https://theconstructor.org/practical-guide/quality-control/</a></li> </ol>		
<b>E-Text Books:</b>		
<ol style="list-style-type: none"> <li>1. <a href="https://drive.google.com/file/d/0B-1pQnD2tCRIOWtWTURWRjR2WHM/view">https://drive.google.com/file/d/0B-1pQnD2tCRIOWtWTURWRjR2WHM/view</a></li> </ol>		