

ENGINEERING ECONOMICS, ESTIMATION AND COSTING

VI Semester: CE								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACEB17	Core	L	T	P	C	CIA	SEE	Total
		3	-	-	3	30	70	100
Contact Classes: 45		Tutorial Classes: 15		Practical Classes: Nil			Total Classes: 60	
<p>COURSE OBJECTIVES: The student will try to learn:</p> <p>I The importance and fundamentals of estimation and costing for measuring quantities of construction materials using traditional methods involved in project works.</p> <p>II The basic concept of earth work related to roads and canals for estimating earth work quantity using sectional area methods.</p> <p>III The concept of bar bending schedule and rate analysis applied for determining quantity of steel and construction costs.</p> <p>IV The knowledge of structural valuation, tender documentation and conditions of contract for obtaining required information to file a contract bid in real time.</p>								
<p>COURSE OUTCOMES:</p> <p>CO 1 Choose the stages involved in construction like excavation, shuttering, bar bending, tendering and valuation for estimating the cost incurred in the project.</p> <p>CO 2 Apply the approximate method and the detailed estimating method for calculating various quantities such as brick work R. C Structures</p> <p>CO 3 Make use of the mid sectional area, and mean sectional area method for determining road embankment and cutting of earth work quantities.</p> <p>CO 4 Apply the concepts of prismatic and trapezoidal rule for calculating earth work quantities of various irrigation canal structures.</p> <p>CO 5 Analyze the quantities of materials of various components used in construction works such as beams, slabs, columns, and footings, as per specifications for preparation of Rate analysis.</p> <p>CO 6 Assess the overhead and contingent charges involved in the project to minimise the additional charges of the project.</p> <p>CO 7 Outline the quantities of steel and concrete for preparing bar bending schedule, quantities of various elements R.C.C structures such as retaining walls, water tanks and irrigation structures.</p> <p>CO 8 Explain the use of contract documents, types of contract and conditions of contract for preparation of bill of quantities and detailed abstracts of the projects.</p> <p>CO 9 Categorize various valuation methods of buildings according to the client requirement for estimating value of structures.</p> <p>CO 10 Choose standard specifications of various materials used in construction and evaluation for valuation of different items in the project.</p> <p>CO 11 Develop the knowledge on quantity surveying methods using advanced tools such as estimator, Revit for preparation of tender documents, bill of quantities and preparation of detailed schedule of various items..</p>								

MODULE-I	GENERAL ITEMS OF WORK IN BUILDING	Classes: 12
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.		
MODULE-II	EARTHWORKS	Classes: 12
Introduction to earth works, Earthwork calculations for roads and canals		
MODULE-III	RATE ANALYSIS	Classes: 12
Rate analysis - Working out data for various items of work over head. Rate analysis - Contingent charges. Contracts – Types of contracts – Contract documents – Conditions of contract		
MODULE-IV	REINFORCEMENT BAR BENDING	Classes: 12
Reinforcement bar bending and bar requirement schedules.		
MODULE-V	VALUATION	Classes: 12
Valuation of buildings, standard specifications for different items of building construction. Basic principles and methodology of Economics.		
Text Books:		
<ol style="list-style-type: none"> 1. B. N. Dutta, “Estimating and Costing”, UBS publishers,2000. 2. G. S. Birdie., “Estimating and Costing”, DhanpatRai publications,1988. 		
Reference Books:		
<ol style="list-style-type: none"> 1. Standard schedule of rates and standard data book by public works department,2015. 2. I.S. 1200 (Parts I to XXV – 1974/method of measurement of building and Civil Engineering works – B.I.S) 3. M. Chakraborti, “Estimation, costing and specifications”, Laxmi publications,1982. 4. National building code,2015. 		
Web References:		
<ol style="list-style-type: none"> 1. https://en.wikipedia.org/wiki/Estimation 2. https://theconstructor.org/practical-guide/quality-control/ 		
E-Text Books:		
<ol style="list-style-type: none"> 1. https://drive.google.com/file/d/0B-1pQnD2tCRIOWtWTURWRjR2WHM/view 		