

**Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur**

Faculty of Engineering & Technology

**CIVIL ENGINEERING**

Scheme of Examination & Evaluation - CBS

**Semester: Seventh**

Subject Code	Course	Teaching Scheme (Clock Hours/ Week )					Evaluation Scheme								Duration of University Theory Exam (Hrs)
		Theory hrs/week	Tutorial hrs/week	Practical hrs/week	Total hrs/week	Credits	Assessment of Marks for Theory				Assessment of Marks for Practical				
							College Assessment (CA)	University Exam	Total Marks	Min. Marks	Internal	External	Total Marks	Min. Marks	
BECVE701T	Advanced Concrete Structures	3	1		4	4	20	80	100	40					4
BECVE701P	Advanced Concrete Structures			2	2	1					25	25	50	25	
BECVE702T	Estimating and Costing	3	1		4	4	20	80	100	40					4
<b>BECVE702P</b>	<b>Estimating and Costing</b>			<b>2</b>	<b>2</b>	<b>1</b>					<b>50</b>	<b>50</b>	<b>100</b>	<b>50</b>	
BECVE703T	Elective -I	3	1		4	4	20	80	100	40					3
BECVE704T	Construction Management and Law	4			4	4	20	80	100	40					3
BECVE705T	Transportation Engineering - II	3	1		4	4	20	80	100	40					3
BECVE706P	Industrial Case Study and Project Seminar			3	3	3					50	50	100	50	
<b>Total</b>		<b>16</b>	<b>4</b>	<b>7</b>	<b>27</b>	<b>25</b>	<b>100</b>	<b>400</b>	<b>500</b>		<b>125</b>	<b>125</b>	<b>250</b>		

**Note:** 1. External Practical Evaluation of “Estimating & Costing” shall be performance based (Manual or using suitable Software) on assigned problem by the External Examiner

2. Evaluation of Summer Training – 2 (ST-2) shall be done as Industrial Case Study Component & minimum two seminar should be delivered as continuous college assessment for project seminar component.

**SEVENTH SEMESTER B.E. CIVIL**

# ESTIMATING AND COSTING

**BECVE702T**  
**(L-3 Hrs/Week, T-1 Hrs/Week); Total Credits-4**

**Evaluation Scheme: (80/20)**  
**Exam Duration: 4 hrs**

## **COURSE OUTCOMES: The Students will be able to**

1. Prepare the preliminary estimate for administrative approval & technical sanction for a civil engineering project.
2. Write the specification of the works to be undertaken, prepare the tender documents, fill the contracts and make use of knowledge of different contract submission & opening in awarding the work to the contractor.
3. Use the concept of SD, EMD, MAS, Running Bill, Final Bill during the entire project
4. Schedule the project for its timely completion.
5. Use the technique of Rate analysis in estimating the exact cost of material & manpower and hence the entire project.
6. Estimate the bill of quantities using different techniques of preliminary & detailed estimation of buildings & roads
7. Arrive the exact value of the asset (movable & immovable) using different Valuation techniques.

## **Unit I**

**Introduction:** Importance and purpose of the subject, Units of measurement as per I.S.1200. Items of work and Description of items of work, administrative approvals, technical sanction, preliminary estimates. objectives, and its methods

Earthwork estimates in road, hill roads and canals, mass haul curves, methods of consumptions of earthwork.

## **Unit II**

**Detailed estimates,** objects, importance, accuracy. Methods of detailed estimates,

Detailed estimates of load bearing and framed structures. Calculation of reinforcing steel with Bar bending Schedule.

## **Unit III**

**Tenders and Contracts:** Method of carrying out works, tender notice, acceptance of tender, essentials of contract, type of contracts, contract documents, land acquisition act, Legal aspects of various contract provisions, Arbitration.

## **Unit IV**

**Specifications:** IS 1200 Introduction, Purpose and principles of specifications writing, Types of specifications, writing and developing detailed specifications of Important items of building and road work.

**Cost Accounting :** Various methods, classification of cost, direct and indirect charges, distribution of overheads, M.A.S. Account, issue rates and stores Account.

## **Unit V**

**Rate Analysis:** Introduction, Purpose and principles of CSR, Factors affecting analysis of rates, labour guidelines from National Building Organization, market rates of materials and labour, Rate analysis of major items of work

## **Unit VI**

**Valuation** :- Purpose of valuation, Factors affecting property price and cost, Types of Value. Real Estate, Tenure of land, Free hold and lease hold, sinking fund, Depreciation, and its methods, Capitalised value, Methods of valuation, Net & Gross income, Rent fixation.

## **REFERENCE BOOKS**

1. Estimating and Costing by Dutta
2. Estimating & Costing by Chakraborty
3. Valuation by Roshan Namavati
4. Philosophy of Valuation. – S. S. Rathore.

## ESTIMATING AND COSTING

**BECVE702PEvaluation Scheme: (50-Internal/50-External) (P-2 Hrs/Week); Total Credits-1**

PRACTICAL – Minimum 8 practical assignment based on

1. Preliminary estimate using Plinth area method.
2. Detailed estimate of Load bearing structure
3. Detailed estimate of Frame structure.
4. Calculation of steel with Bar bending Schedule.
5. Detailed estimate of earthwork of road for Approximate 1km length.
6. Draft Detailed specification for 8 major items.
7. Analysis the unit rate of 8 major items of work contained.
8. Draft a short tender notice for proposed work.
9. Calculation of annual and total Depreciation and book value of the end of each year.
10. Fixation of standard rent of property.
11. Market survey for material and labour rates for various items.
12. Detailed planning and estimate of plumbing work.
13. Detailed estimate of building using estimate software

