

Branch Name:	Civil Engineering
Program Code:	ET401
Course Name:	Estimating, Costing & Valuation
Course Code:	2ET4010504
Pre-requisite Course:	---

COURSE OBJECTIVE:

Following are the objectives of this course:

- To know types of estimate and duties of an Estimator.
- Preparation of rate analysis of civil engineering works.
- To know the rates of various items of civil works.
- To prepare estimate and cost of a civil engineering project.
- To know the rates of various items of civil works

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
3	-	4	5	60	40	40	60

DETAILS OF COURSE CONTENTS:

S. No.	Topic	Total Hrs.	Weightage In Percentage
1	Introduction and Measurement 1.1. Meaning & objectives of estimating & costing. 1.2. Types of estimate and Data required. 1.3. Quality and duties of good estimator. 1.4. Distinguish the terms: Overhead charges, Water charges, Contingencies, Provisional sum, Prime cost, Provisional Quantities, Spot items, Day work. 1.5. Measurement unit of different construction items and materials 1.6. Unit conversion and measurement rules 1.7. Mode of measurements, purpose and accuracy criteria for content related item of construction. 1.8. Multiplying factors for painting works.	06	15
2	Specifications 3.1. Definition, purpose & importance of specifications. 3.2. Types of specifications.	04	10

	3.3. Principle of writing specification. 3.4. Specification of Earthwork in Excavation, cement concrete, Brick masonry, R.C.C. Work, Plastering Work, Painting, Flooring. 3.5. Specification report of whole project with material		
3	Rate Analysis 4.1. Definitions, importance, purpose & factors affecting the rate analysis. 4.2. Task work and Factors affecting Task work. 4.3. Labour required for different works and rates. 4.4. Study of S.O.R. and market rates. 4.5. Rate analysis for different construction item like Excavation, BBCC, PCC, Brick masonry Work, R.C.C. Work, Plastering, flooring, painting etc. 4.6. Survey of current market rate of different construction item and materials	08	20
4	Detailed Estimation 5.1. Purpose of detailed estimation. 5.2. Methods of detailed estimation. (Center line method and long wall - short wall method.) 5.3. Estimate for Compound wall, steps, One/ two room building. 5.4. Estimate for Residential building (excavation, PCC, footing, earth filling, brickwork, RCC, plastering, flooring, etc.). 5.5. Quantity of earthwork for roads and canals. 5.6. Estimate of RCC structures like beam, column, slab and retaining wall. 5.7. Preparation of Abstract sheet for residential bungalow for home loan.	18	35
5	Valuation 6.1. Define terms: Cost, Price, Value, Real estate, Personal estate. 6.2. Objects of valuation. 6.3. Mortgage, freehold property, lease-hold property 6.4. Property income, gross income, net income, outgoing. 6.5. Depreciation and obsolescence. 6.6. Different forms of value like Market value, book value, distress value, scrap value, salvage value, accommodation value, replacement value, sentimental value, speculative value, monopoly value. 6.7. Factors affecting the value of a property.	6	20

	6.8. Characteristics of good valuer. 6.9. Miscellaneous topics its computation and application Annuity and its types, Sinking fund, Amortization, Year's purchase, Capitalized value, Types of rent. 6.10. Purpose and Preparation of Valuation report 6.12. Valuation methods for property. 6.13. Valuation methods for open land. 6.14. Valuation report – case study.		
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COURSE OUTCOME:

On the completion of the course student will be able to:

1. Explain types of estimate and duties of an Estimator.
2. Determine the rates of various items of civil works.
3. Understand rate analysis of civil engineering works.
4. Calculate estimate and cost of a civil engineering project.
5. Evaluate present cost of existing structures and open land property

LIST OF PRACTICAL:

The exercises / practical should be properly designed and implemented with an attempt to develop different types of practical skills so that students are able to acquire the competencies / Course outcomes. Following is the list of practical exercise for guidance.

SR. No.	Practical Exercises
1	Interpret civil engineering drawings (plan, section and elevation)
2	List of various items to be provided to learn the modes of measurements according to prevailing IS.
3	List out measurement unit of various construction items.
4	Write specifications for at least 10 items of construction work.
5	Collect market rate of construction materials, labour and construction items to compare with SOR.
6	Analyze rate for at least 10 items of residential building construction.
7	Detailed estimate of a small residential building having two rooms from a given working drawing. (centre line and Long wall ,short wall method)
8	Detailed estimate of a residential building having drawing room, bed rooms, kitchen, store, W.C. bath, staircase, verandah, balcony, passage from given working drawing.
9	Estimate in detail for earthwork of road / canal/ dam works.
10	Detail Estimates of RCC Beam, RCC slab, RCC column and RCC Retaining wall
11	Solve at least 10 examples related to various form of value, depreciation, loan amount, annual rent, capitalized value, year purchase, etc.

LIST OF REFERENCES:

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| 1. Estimating & Costing in Civil Engg. | B.N. Dutta |
| 2. Estimating & Costing (Civil Engg.) | S.C.Rangwala |
| 3. Estimating & Costing | M.C.Chakraborty |
| 4. A text book of Estimating & Costing | G.S.Birdie |
| 5. Estimating & Costing | Vazirani&Chandola |
| 6. Estimating & Costing (Civil Engg.) | D.D.Kohli, Ar. R.C.Kohl |

CLO	Description	Bloom's Taxonomy Level
CLO1	Explain types of estimate and duties of an Estimator.	1 Remembering 3 Applying
CLO2	Determine the measurement and specification of various items of civil engineering structures.	2 Understanding 4 Analysing
CLO3	Understand rate analysis of civil engineering works.	2 Understanding 4 Analysing
CLO4	Calculate estimate and cost of a civil engineering project.	5 Evaluating 2 Understanding
CLO5	Evaluate present cost and valuation of existing structures and open land property	5 Evaluating 2 Understanding

Course Learning Outcomes	Program Outcomes(Pos)											
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
CLO1	L											
CLO2	M	M										
CLO3	H		M				H					
CLO4	H	H			I	L				I	L	
CLO5	L		L				H					