

	MOHAMED SATHAK A J COLLEGE OF ENGINEERING Chennai 603103		Fromat no.	TLP 05
			Rev.Date	01/02/2021
	LESSON PLAN - THEORY		Rev. No.	0

Department of Civil Engineering			
Name of the Subject	ESTIMATION, COSTING & VALUATION ENGINEERING	Name of the handling Faculty	Mr.C.Navaneetha Krishnan
Subject Code	CE8701	Year / Sem	IV / VII
Acad Year	2022 - 2023	Batch	2019 - 2023

### Course Objective

The students will acquire knowledge in estimation, tender practices, contract procedures, and valuation and will be able to prepare estimates, call for tenders and execute works.

### Course Outcome

Explain estimate the quantities for buildings

Compare the rate analysis for all building works, canals, and roads and cost estimate.

Justify the types of specifications, principles for report preparation, tender notices types.

Explain the types of contracts

Prepare the valuation for building and land.

Lesson Plan							
Sl. No.	Topic(s)	T / R*	Periods Required	Mode of Teaching (BB / PPT / NPTEL / MOOC / etc )	Blooms Level (L1-L6)	CO	PO
		Book					

### UNIT I QUANTITY ESTIMATION

1	Philosophy – Purpose – Methods of estimation	T1	1	BB	L1	CO1	PO1-PO3
2	Types of estimates – Approximate estimates – Detailed estimate	T1	1	BB	L2	CO1	PO1-PO3
3	Estimation of quantities for buildings	T1	2	BB	L3	CO1	PO1-PO3
4	Estimation of quantities for bituminous and cement concrete roads	T1	2	BB	L3	CO1	PO1-PO3
5	Estimation of quantities for septic tank, soak pit	T1	1	BB	L3	CO1	PO1-PO3
6	Estimation of quantities for retaining walls	T1	1	BB	L3	CO1	PO1-PO3
7	Estimation of quantities for culverts	T1	1	BB	L3	CO1	PO1-PO3

**Suggested Activity: Problem Solving- Estimate of buildings (Shop Building)**

**Evaluation method : Paper base evaluation**

### UNIT II RATE ANALYSIS AND COSTING

9	Standard Data – Observed Data	T1	1	BB	L2	CO2	PO1-PO3
10	Schedule of rates – Market rates	T1	1	BB	L2	CO2	PO1-PO3
11	Standard Data for Man Hours and Machineries for common civil works	T1	1	BB	L2	CO2	PO1-PO3
12	Rate Analysis for all Building works	T1	1	BB	L3	CO2	PO1-PO3
13	Rate Analysis for canals	T1	1	BB	L3	CO2	PO1-PO3
14	Rate Analysis for Roads	T1	1	BB	L3	CO2	PO1-PO3
15	Cost Estimates (additional practice in class room using Computer softwares)	T1	1	BB	L3	CO2	PO1-PO3

16	(Analysis of rates for the item of work asked, the data regarding labour, rates of material and rates of labour to be given in the Examination Question Paper)	T1	2	BB	L3	CO2	PO1-PO3
<b>Suggested Activity: Power point Presentation - Problems on estimate of structures</b>							
<b>Evaluation method : PPT base evaluation</b>							
<b>UNIT III SPECIFICATIONS, REPORTS AND TENDERS</b>							
17	Specifications - Detailed and general specifications	T1	1	BB	L2	CO3	PO1-PO3
18	Constructions – Sources – Types of specifications	T1	1	BB	L2	CO3	PO1-PO3
19	Principles for report preparation – report on estimate of residential building	T1	1	BB	L3	CO3	PO1-PO3
20	Report on estimate of Culvert – Roads	T1	1	BB	L3	CO3	PO1-PO3
21	TTT Act 2000 - Tender Notices - Types	T1	1	PPT	L2	CO3	PO1-PO3
22	Tender procedures – Drafting model tenders	T1	1	PPT	L2	CO3	PO1-PO3
23	E-tendering-Digital signature certificates	T1	1	PPT	L2	CO3	PO1-PO3
24	Encrypting -Decrypting	T1	1	PPT	L2	CO3	PO1-PO3
25	Reverse auctions.	T1	1	PPT	L2	CO3	PO1-PO3
<b>Suggested Activity: Assignment - Preparation of tender notice</b>							
<b>Evaluation method : Paper base evaluation</b>							
<b>UNIT IV CONTRACTS</b>							
26	Contracts & Types of contracts	T2	1	BB	L2	CO4	PO1-PO3
27	Formation of contract - Contract conditions	T2	1	BB	L2	CO4	PO1-PO3
28	Contract for labour, material, design, construction	T2	2	BB	L2	CO4	PO1-PO3
29	Drafting of contract documents based on IBRD / MORTH	T2	2	BB	L2	CO4	PO1-PO3
30	Standard bidding documents	T2	1	BB	L2	CO4	PO1-PO3
31	Construction contracts – Contract problems	T2	1	BB	L2	CO4	PO1-PO3
32	Arbitration and legal requirements.	T2	1	BB	L2	CO4	PO1-PO3
<b>Suggested Activity: Assignment - Report preparation</b>							
<b>Evaluation method : Paper base evaluation</b>							
<b>UNIT V VALUATION</b>							
33	Definitions – Various types of valuations	T1	1	PPT	L1	CO5	PO1-PO3
34	Valuation methods	T1	1	PPT	L2	CO5	PO1-PO3
35	Necessity - Capitalised value	T1	1	PPT	L2	CO5	PO1-PO3
36	Depreciation	T1	1	PPT	L2	CO5	PO1-PO3
37	Escalation	T1	1	PPT	L2	CO5	PO1-PO3
38	Value of Land & building	T1	1	BB	L2	CO5	PO1-PO3
39	Calculation of Standard rent	T1	1	BB	L2	CO5	PO1-PO3
40	Mortgage	T1	1	PPT	L2	CO5	PO1-PO3
41	Lease	T1	1	PPT	L2	CO5	PO1-PO3
<b>Suggested Activity: MCQ-Problems on valuation</b>							
<b>Evaluation method : Choice base evaluation</b>							
<b>Content Beyond the Syllabus Planned</b>							
1	Preparation of building estimation of homes						

2	Structural evaluation of building													
Text Books														
1	B.N Dutta ‘Estimating and Costing in Civil Engineering’, UBS Publishers & Distributors (P) Ltd, 2010.													
2	B.S.Patil, ‘Civil Engineering Contracts and Estimates’, University Press, 2006													
3	D.N. Banerjee, ‘Principles and Practices of Valuation’, V Edition, Eastern Law House, 1998													
Reference Books														
1	Hand Book of Consolidated Data – 8/2000, Vol.1, TNPWD													
2	Tamilnadu Transparencies in Tender Act, 1998													
3	Arbitration and Conciliation Act, 1996													
Website / URL References														
1	<a href="https://onlinecourses.swayam2.ac.in/nou20_cs11">https://onlinecourses.swayam2.ac.in/nou20_cs11</a>													
Blooms Level														
Level 1 (L1) : Remembering		Lower Order Thinking	Fixed Hour Exams	Level 4 (L4) : Analysing					Higher Order Thinking	Projects / Mini Projects				
Level 2 (L2) : Understanding				Level 5 (L5) : Evaluating										
Level 3 (L2) : Applying				Level 6 (L6) : Creating										
Mapping syllabus with Bloom’s Taxonomy LOT and HOT														
Unit No	Unit Name					L1	L2	L3	L4	L5	L6	LOT	HOT	Total
Unit 1	QUANTITY ESTIMATION					1	1	7	0	0	0	9	0	9
Unit 2	RATE ANALYSIS AND COSTING					0	3	6	0	0	0	9	0	9
Unit 3	SPECIFICATIONS, REPORTS AND TENDERS					0	7	2	0	0	0	9	0	9
Unit 4	CONTRACTS					0	9	0	0	0	0	9	0	9
Unit 5	VALUATION					1	8	0	0	0	0	9	0	9
Total						2	28	15	0	0	0	45	0	45
Total Percentage						4.45	62.22	33.33	0	0	0	100	0	100
CO PO Mapping														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2											1	2
CO2	3	2											1	2
CO3	3	2											1	2
CO4	3	2											1	2
CO5	3	2											1	2
Avg	3	2											1	2
Justification for CO-PO mapping														
CO1	PO1 : Engineering Knowledge in different types of structures. , PO2 : Estimation of buildings ,PSO1: Apply their skills to estimate structures, PSO2 : Apply their acquired professional skills to estimate structures													
CO2	PO1 : Engineering Knowledge in rate analysis. , PO2 : Apply their knowledge in cost estimate, PSO1: Apply their skills to estimate structures, PSO2 : Apply their acquired professional skills to estimate structures													
CO3	PO1 : Engineering Knowledge in report preparation. , PO2 : Analyse different types of tenders, PSO1: Apply their skills in drafting model tender, PSO2 : Apply their acquired professional skills to analyse tender													

CO4	<b>PO1 : Engineering Knowledge in formation of contract. , PO2 : Drafting of contract documents , PSO1: Apply their skills in Arbitration and legal requirements, PSO2 : Apply their acquired professional skills in Standard bidding documents</b>				
CO5	<b>PO1 : Engineering Knowledge in valuation, PO2 : Problem analysis in valuation of buildings, PSO1: Apply their skills to prepare reports on works, PSO2 : Apply their acquired professional skills to create reports of engineering works.</b>				
3	High level	2	Moderate level	1	Low level

\*Kindly sign with date

Name & Sign of Faculty Incharge :Mr.C.Navaneethakrishnan

Name & Sign of Subject Expert :Mr.C.Navaneethakrishnan

Head of the Department :Dr.R.Someswaran

Format No :231kn