Program :	**Diploma in Civil Engineering**
Course Code : **4018**	Course Title: **Estimation and Costing Lab**
Semester : **4**	Credits: **1.5**
Course Category: **Program Core**	
Periods per week: **3 (L:0, T:0, P:3)**	Periods per semester: **45**

Course Objectives:

- To impart the knowledge about the procedure for estimating and costing of Civil Engineering works

- To develop in the student the skill in the use of spreadsheet for the preparation of abstract of estimate for construction projects.

- To impart the ability to use software for estimation and costing like steel roof truss, Estimate capacity of reservoir from contour map etc.

- To prepare valuation certificates and statements of a real and a landed property.

Course Prerequisites:

Topic	Course code	Course name	Semester
Elementary Mathematics			1 & 2
Building Drawing and Planning		Building Drawing and Estimation	3
Building construction and construction materials		Building construction and construction materials	3

Course Outcomes:

COn	Description	Duration (Hours)	Cognitive level
CO1	Identify the basic principles for estimation and costing of Civil Engineering works	9	Understanding
CO2	Prepare detailed estimate for infrastructure works using spreadsheet	13	Applying
CO3	Prepare abstract of estimate for construction projects using spreadsheet.	12	Applying

CO4	Prepare valuation certificates and statements of a real and a landed property and fix rent of properties- existing government building	7	Applying
	Series Tests	4	

CO-PO Mapping:

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3						
CO2				3			
CO3				3			
CO4	3				3		

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

Course Outline:

On completion of the course student will be able to:

Module Outcomes	Description	Duration (Hours)	Cognitive level
CO1	**Identify the basic principles for estimation and costing of Civil Engineering works**		
M1.01	Prepare the list of items to be executed with units for detailed estimate of a given structure from the given drawing.	3	Understanding
M1.02	Prepare a report on market rates for given material, labour wages, hire charges of tools & Equipment.	3	Understanding
M1.03	Study of items with specification given in DSR using PRICE Software.	3	Understanding
CO2	**Prepare detailed estimate for infrastructure works using spreadsheet**		
M2.01	Prepare detailed estimate of road of one kilometer length from the given drawing. (CC Road and WMM)	4	Applying
M2.02	Prepare detailed estimate of well from the given set of drawings.	3	Applying
M2.03	Prepare detailed estimate of small Septic tank and soak pit from the given set of drawings.	3	Applying

M2.04	Prepare detailed estimate of a steel roof truss	3	Applying
	Series Test-1	2	
CO3	**Prepare abstract of estimate for construction projects using spreadsheet**		
M3.01	Prepare rate analysis and record in Measurement Book (MB).	6	Applying
M3.02	Prepare bill of quantities of given item from actual measurements	6	Applying
CO4	**Prepare valuation certificates and statements of a real and a landed property and fix rent of properties- existing government buildings.**		
M4.01	Open ended experiment- Detailed estimate and abstract of estimate, valuation certificate, Fix the rent.	7	Applying
	Series Test II	2	

Text / Reference:

T/R	Book Title/Author
T1	Datta, B.N., Estimating and Costing in Civil engineering, UBS Publishers Distributors Pvt. Ltd. New Delhi.
R2	Rangwala,S.C., Estimating and Costing, Charotar Publishing House PVT. LTD., Anand.
R3	Birdie,G.S., Estimating and Costing, Dhanpat Rai Publishing Company(P) Ltd. NewDelhi.
R4	V N Vazirani & S P Chandola, Civil engineering Estimating and Costing, Khanna Publishers
R5	Chakraborti,M., Estimating and costing, specification and valuation in civil engineering, Monojit Chakraborti, Kolkata.
R6	IS 1200-1968; Methods of measurement of Building & Civil Engineering works.
R7	CPWD Schedule of Rates for Delhi-2018
R8	CPWD Analysis of Rates for Delhi-2018, Vol I and II
R9	Ministry of Road Transport and Highways (MORT&H) Specifications and Analysis of Schedule of Rates.
R10	IRC SP: 20 Rural Roads Manual

Online Resources:

Sl.No	Website Link
1	https://nptel.ac.in/
2	http://egyankosh.ac.in/
3	https://swayam.gov.in/
4	http://www.vlab.co.in/