GANPAT UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

Programme	Bachelor of Technology	Branch/Spec.	Civil Engineering
Semester	VI	Version	2.0.0.0
Effective from Academic Year	2024-25	Effective for the Batch admitted in	July 2022
Course Code	2CI6104	Course Name	Estimating and Costing

Teaching Scheme						Examination Scheme (Marks)			
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	02	00	02	00	04	Theory	40	60	100
Hours	02	00	04	00	06	Practical	30	20	50

Pre-requisites

Course Outcomes

On successful completion of the course, the students will be able to:

CO1	Understand and interpret the purpose, importance, types of estimates, and approximate estimating methods used in civil engineering works.
CO2	Estimate quantities and costs of complete building works, including masonry, flooring, staircases, RCC components, and other building elements.
CO3	Estimate quantities and costs of civil engineering works such as roads, culverts, earthworks for dams and canals, water supply, sanitation, and septic tanks.
CO4	Analyze construction rates by considering material costs, labour output, influencing factors, and the Schedule of Rates (SOR) for major building and civil engineering items.
CO5	Prepare abstracts, bills, and cost statements, and understand and draft specifications for civil engineering works.

Theory Syllabus

Unit	Content	Hrs.
1	**General:** Purpose and importance of estimation, role of surveyor works. Types of estimates approximate estimating techniques for various civil engineering works, understanding of working drawings, ISI codes for measurements.	5
2	**Estimation of Buildings:** Estimation with central line method and short & long wall method, Estimation of earthwork and masonry, flooring, walls, openings, RCC components, staircase, timber and steel work, load bearing and framed structures.	9
3	**Estimation of other Civil Engineering Structures:** Estimating of different roads and culverts. Earthwork estimation for earthen dam and irrigation channels. Rough estimation of domestic water supply, sanitation and septic tanks. Estimation of domestic electrical fixtures and work.	5
4	**Analysis of Rates:** Purpose and principal factors affecting the rates of an item of work, output of labour force. Analysis of rates for important building items and other typical civil engineering works mentioned above, S. O. R. statements.	5
5	**Abstracting and Billing:** Abstracting methods relevant to ISI standards, preparation of abstract statements, cost analysis and statements.	3
6	**Specification Writing:** Purpose and basic principles of specifications, types of specification, study of important Specification. Specification drafting for important civil engineering items - brief and detailed specification.	3

Practical Content

Practical Assignments and tutorials are based on the above syllabus.

Text Books	
1	Dutta B. N., “Estimating and Costing “, S. Dutta& Co., Lucknow - 1 (1997) UBS Publisher.
2	DD Kohli and RC Kohli “Estimation and Costing” by S. Chand Publication.
3	Rangwala, “Estimating Costing And Valuation” by Charotar Publication.
Reference Books	
1	M. Chakraborti, “Estimating, Costing, Specification & Valuation In Civil Engineering” by Chakraborti Publisher.
2	S. P Mahajan and Sanjay Mahajan, “Quantity Surveying and Valuation” by Satya Publishers.
ICT/MOOCs Reference	
1	https://onlinecourses.swayam2.ac.in/nou20_cs11/preview
2	https://www.coursera.org/learn/construction-cost-estimating3

Mapping of CO with PO and PSO:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	0	0	0	0	2	0	0	2	0	3	2	0	2	2
CO2	2	1	0	0	2	0	0	2	0	1	0	0	2	0	1
CO3	2	1	2	0	0	3	0	0	2	1	3	0	2	0	2
CO4	2	0	0	2	2	0	0	0	2	2	3	0	2	0	2
CO5	0	0	3	0	0	2	2	3	0	0	2	2	0	1	2