

DEPARTMENT OF CIVIL ENGINEERING

Course Module of the Subject Taught for the Session July -Dec2026-27 (ODD

Semester) Course Syllabi with CO's

Faculty Name : Manu Vijay				Academic Year: 2026-27			
Department: CIVIL ENGINEERING							
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
BCV702	Estimation and contract Management	CORE	RCC & Steel Engineering	3	2	-	50
Objectives	The objective of this course is to make students to learn: 1. Estimate the quantities of work, develop the bill of quantities and arrive at the Cost of civil engineering Project 2. Understand and apply the concept of Valuation for Properties 3. Understand, Apply and Create the Tender and Contract document.						
Topics Covered as per Syllabus							
MODULE 1							
Chapter 1: Estimation: Type of estimates, Understanding the enclosures of an estimate, General terminology, units of measurement, Preparation of abstract, approximate methods of estimating buildings, cost of materials and recommended labour coefficients. Building Estimate: Methods of taking out quantities and cost (center line method & long and short wall method). Preparation of detailed and abstract estimates for– Buildings – Masonry structures, framed structures. Flat, slopped RCC roofs with all building components.							
Chapter 2: Culverts (includes box culvert, pipe culvert and RC slab culverts) manhole and septic tank							
MODULE 2							
Chapter 1: Estimation of flat, slopped RCC roofs, steel truss. Culverts (including box culvert, pipe culvert and RC slab culverts) manhole and septic tank. Measurement of Earth Work for Roads: Methods for computation of earthwork bymid-section formula, trapezoidal or average end area or mean sectional area formula, prismoid formula.							
Chapter 2: Project Preparation: Preliminary Survey Report and Detailed Project Report							
MODULE 3							
.Specification for Civil Engineering Works: Objective of writing specifications essentials in specifications, general and detail specifications of different items of works in buildings and roads.							
Analysis of Rates : Factors Affecting Cost of Civil Works , Concept of Direct Cost , Indirect Cost and Project CostRate analysis and preparation of bills, Data analysis of rates for various items of Works, Sub-structure components, Rate analysis for R.C.C. slabs, columns and beams							
MODULE 4							
Contract Management-Tender and its Process: Invitation to tender, Prequalification, administrative approval & Technical sanction. Bid submission and Evaluation process. Contract Formulation: Letter of intent, Award of contract, letter of acceptance and notice to proceed. Features / elements of standard Tender document (source: PWD / CPWD / International Competitive Bidding – NHAI / NHEPC / NPC).Law of Contract as per Indian Contract act 1872, Types of Contract, Joint venture.							
Contract Forms: FIDIC contract Forms, CPWD, NHAI, NTPC, NHEPC							
MODULE 5							
Contract Management-Post award :Basic understanding on definitions, Performance security, Mobilization and equipment advances, Secured Advance, Suspension of work, Time limit for completion, Liquidated damages and bonus, measurement and payment, additions and alterations or variations and deviations, breach of contract, Escalation, settlement of account or final payment, claims, Delay’s and Compensation, Disputes & its resolution mechanism, Contract management and administration.							
Valuation: Definitions of terms used in valuation process, Purpose of valuation, Cost, Estimate, Value and its relationship, Capitalized value. Freehold and lease hold and easement, Sinking fund, depreciation–methods of estimating depreciation, Outgoings, Process and methods of valuation: Rent fixation, valuation for mortgage, valuation of land							

DEPARTMENT OF CIVIL ENGINEERING

List of Reference Books

1. Kohli D.D and Kohli R.C, "Estimating and Costing", 12 th Edition, S.Chand Publishers, 2014.
2. Vazirani V.N and Chandola S.P, "Estimating and costing", Khanna Publishers, 2015.
3. Rangwala, C. "Estimating, Costing and Valuation", Charotar Publishing House Pvt. Ltd., 2015.
4. Duncan Cartlidge , "Quantity Surveyor's Pocket Book", Routledge Publishers, 2012.
5. Martin Brook, "Estimating and Tendering for Construction Work", A Butterworth-Heinemann publishers, 2008.
6. Robert L Peurifoy , Garold D. Oberlender , " Estimating Construction Costs" – 5ed , Tata McGraw-Hill ,New Delhi.
7. David Pratt, "Fundamentals of Construction Estimating" – 3rd, Edition.
8. PWD Data Book, CPWD Schedule of Rates (SoR). and NH SoR – Karnataka FIDIC Contract forms.
9. B.S. Ramaswamy "Contracts and their Management" 3ed, Lexis Nexis (a division of Reed Elsevier India Pvt Ltd).

URLs : <https://www.youtube.com/watch?v=D04uxZpgp6M>

**RBT
LEVELS**

Course Outcomes	After the completion of the course the student will be able to, Taking out quantities and work out the cost and preparation of abstract for the estimated cost for various civil engineering works.	L4
	Prepare detailed and abstract estimates for various road works, structural works and water supply and sanitary works	L4
	Prepare the specifications and analyze the rates for various items of work	L4
	Assess contract and tender documents for various construction works.	L2
	Prepare valuation reports of buildings.	L2

Internal Assessment Marks: 40

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	BCV702	TITLE: Estimation and contract Management						Faculty Name:		Manu Vijay				
List of Course Outcomes	Program Outcomes													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	Total	
	CO-1	3	3	2	1	1			1		1		1	13
	CO-2	3	3	2	2	1			1				1	13
	CO-3	3	3	3	2	1			1		1		1	15
	C0-4	3	3	3	2	1			1		2		1	16
	C0-5	3	3	3	1	1			1		1		1	14
Total	15	15	13	8	5	-	-	5	-	5	-	5	71	

Note: 3 = Strong Contribution 2= Average Contribution 1 = Weak Contribution 0 = No Contribution

DEPARTMENT OF CIVIL ENGINEERING

The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Subject Code:	BCV702	TITLE: Estimation and contract Management	Faculty Name:	Manu Vijay	RBT LEVELS
List of Course Outcomes	Program Specific Outcomes				
	PSO1	PSO2	Total		
CO-1	3				L4
CO-2	3				L4
CO-3	3				L4
C0-4	3				L2
C0-5	3				L2
Total	15				-

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution 0 = No Contribution

