

**NIRMA UNIVERSITY**  
**School of Engineering, Institute of Technology**  
**B.Tech. in Civil Engineering**  
**Semester- VII**

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3	0	2	4

<b>Course Code</b>	2CL702
<b>Course Name</b>	Professional Practice

**Course Outcomes:**

At the end of the course, student will be able to –

1. Calculate the quantity of residential building and compute the probable cost
2. Estimate the quantity of RCC elements for various structures
3. Assess the probable cost of infrastructure projects
4. Appraise the need of specification, tendering, contract and valuation for construction projects

**Syllabus:**

**Teaching hours: 45**

**Unit 1: Quantity Estimation of Residential Building**

**Hours: 16**

Introduction of construction project team, role of owner, engineer, contractor, quantity surveyor, purpose of estimation, methods of estimation, unit and rules for measurement, Quantity estimation of excavation, back-filling, brickwork in foundation and plinth, PCC, DPC, Brickwork in Super Structure, Plastering and Pointing, Painting, Flooring, Skirting, Coping, etc.

**Unit 2: Quantity Estimation of RCC Elements**

**Hours: 06**

Need of Bar Bending Schedule, Quantity estimation for RCC Staircase, Beam, Column, Footing, Slab, Retaining Wall, Weather Shed, Lintel

**Unit 3: Quantity Estimation of Infrastructure` Projects**

**Hours: 11**

Road: Quantity estimation of earthwork, sub-grade, sub-base, base, surface course. bridges: quantity estimation of pile, pile cap, pier, pier cap, girder, slab, crash barrier etc. Quantity estimation for pipe and box culvert etc.

**Unit 4: Rate Analysis**

**Hours: 04**

Purpose, factors, methods, schedules of rate.

**Unit 5: Introduction to Specification, Tendering, Contracting and Valuation** **Hours: 08**

Specification: Objectives, importance, types, specification for material and workmanship. Tendering: types, pre-qualification of contractors, documents, preparation, submission, opening, scrutiny, award of contract, rejection, contract documents; Contracts: Types, validity, forms, termination, legal aspects, conditions of contract. Valuation: Definition, purpose, different forms of value, methods.

**Self-Study:**

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

**Laboratory Work:**

Laboratory work will be based on above syllabus with minimum 06 exercise to be incorporated

**Suggested Readings:**

1. Dutta B.N., Estimating & Costing in Civil Engineering, UBS Publishers.
2. Patil B.S., Civil Engineering Contracts, University Press.
3. Kohli D.D. & Kohli R.C., Estimating & Costing, S.Chand Publication.
4. Rangwala S.C. and Rangwala K.S., Estimating, Costing and Valuation, Charotar Publishing House.
5. Chakraborti, M. Estimating, Costing, Specification and Valuation in Civil Engineering. Chakraborti Publisher.
6. Birdie G.S., Estimating & costing, Dhanpat Rai Publishing.

L= Lecture, T= Tutorial, P= Practical, C= Credit

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w.e.f. academic year 2021-22 and onwards