

Estimating and Costing I
EG 2202 CE

Year: II
Semester: II

Total: 7 Hrs. /week
Lecture: 3 Hrs./week
Tutorial: 3 Hrs./week
Practical: 1 Hrs./week
Lab: Hrs./week

Course Description:

This course focuses on familiarization of estimating and costing of building works.

Course Objectives:

After the completion of this course, students will be able to:

1. Understand the estimated cost, actual cost and types of estimation;
2. Understand the procedures methods of measuring and quantifying the building works and
3. Prepare the estimating the cost of building works.

Course Contents:

Theory

Unit 1: Introduction

[5 Hrs.]

- 1.1 Definition of Estimating
- 1.2 Purpose of Estimating
- 1.3 Estimate versus Actual cost
- 1.4 Administrative approval
- 1.5 Technical sanction
- 1.6 Capital cost
- 1.7 District Rates
- 1.8 Abstract of cost
- 1.9 Bill of quantities
- 1.10 Contingency
- 1.11 Plinth area
- 1.12 Carpet area
- 1.13 Work charged establishment

Unit 2: Types of Estimates:

[6 Hrs.]

- 2.1 Approximate estimate
- 2.2 Detailed estimate
- 2.3 Revised estimate
- 2.4 Supplementary estimate
- 2.5 Annual repair and maintenance estimate
- 2.6 Extension and improvement estimate
- 2.7 Split up of the cost of building work
- 2.8 Internal Electrification, Sanitary and Water Supply works

Unit 3: Estimation of Building

[26 Hrs.]

- 3.1. Data required for preparation of detailed estimate
- 3.2. Principle of units of measurement
- 3.3. Units of measurement and payment for Earthwork, Concrete Work, Soling, Damp Proof Course, Masonry Works
- 3.4. Limits of measurement and degree of accuracy

- 3.5. Methods of estimate of building works
- 3.6. Long wall and Short wall method
- 3.7. Centre Line method
- 3.8. Estimating quantities of materials in Building works (One Room, Two Room Building)
- 3.9. Earthwork in excavation and filling
- 3.10. Brickwork (Foundation and Super Structure)
- 3.11. Stone works
- 3.12. Plastering and Painting works
- 3.13. PCC
- 3.14. RCC
- 3.15. Metal works

Unit 4: Analysis of Rates

[8 Hrs.]

- 4.1. Introduction
- 4.2. Purpose of analysis of rates
- 4.3. Requirements of rate
- 4.4. Factor affecting analysis of rates
- 4.5. Importance of rate analysis
- 4.6. Terms used in analysis of rates- Overhead cost, Task or out turn work, Labour rate, Material rate, Through rate
- 4.7. Government procedure of preparing analysis of rates for building works

Tutorial

[45 Hrs.]

Taking out detailed quantities and prepare the estimate for the following:

1. Estimate of a 9" thick wall
2. Estimate one room building with RCC flat roof
3. Estimate one room building (having verandah) with RCC flat roof
4. Estimate steel reinforcement of footing, RCC beam, column and slab
5. Estimate brick masonry retaining walls
6. Estimate steel tubular truss and purlins
7. Estimate dog legged staircase
8. Determine approximate quantities of materials and labour for building based on CBRI, Roorkee
9. Perform computerized estimation of quantities of building work
10. Field visit of an under-construction building

References:

1. Amarjit Aggarwal "Civil estimating quantity surveying and valuation" Katson Publishing House, Ludhiyana, 1985
2. P.K. Guha "Quantity Surveying" (Principles and application Khanna Publishers

Evaluation Scheme

Unit	Title	Hrs.	Marks Distribution
1	Introduction	5	8
2	Types of Estimate	6	12
3	Estimation of Building	26	44
4	Analysis of Rates	8	16
		45 Hrs.	80