

State Institute of Technical Teachers Training & Research, Kalamassery

**COURSE TITLE : QUANTITY SURVEYING-1**  
**COURSE CODE : 4013**  
**COURSE CATEGORY : B**  
**PERIODS/WEEK : 6**  
**PERIODS/SEMESTER : 78**  
**CREDIT : 5**

**TIME SCHEDULE**

Module	Topics	Period
1	Definitions and units of measurements Earth work computation Estimation of road work	19
2	Detailed Estimate of single storey building	20
3	Detailed Estimate for finishing work, water supply & sanitary work of single storey building. Detailed estimate for WBM road	22
4	Analysis of rates Abstract of estimates of typical building	17
<b>TOTAL</b>		<b>78</b>

**COURSE OUTCOME**

Sl.	Sub	Student will be able to
1	1	Prepare estimate for civil engineering work.
	2	Prepare check list of items of construction
	3	Prepare rate analysis of item of construction.

**SPECIFIC OUTCOMES**

Upon completion of the study, the student should be able to:

**MODULE-I**

- 1.1.0 Understand the importance of Quantity surveying and the role of quantity surveyor**
- 1.1.1 Define the terms quantity surveyor, quantity surveying,
- 1.1.2 List the duties and requirements of quantity surveyor
- 1.1.3 List the elements of estimate
- 1.1.4 Explain different types of estimate-detailed estimate , supplementary estimate, revised estimate, annual repair and maintenances, approximate estimate

## State Institute of Technical Teachers Training & Research, Kalamassery

- 1.1.5 Calculate the approximate cost of the building using plinth area method cubic content method and service unit method
- 1.1.6 Identify different units of measurements and accuracy of measurements.
- 1.1.7 Define the terms sundries, Lump sum, Lead and lift, contingencies, unforeseen items, work charged establishment. Estimate PAC
- 1.1.8 Identify the different methods of earth work volume computation - Trapezoidal – mid section, mean section (trapezoidal and Prismoidal formula)
- 1.1.9 Compute the quantities of earth work from Longitudinal section and Cross section in cutting and filling (no transverse slope)
- 1.1.10 Compute Capacity of reservoir from contour map using trapezoidal rule and prismoidal rule

### **MODULE-II**

#### **DETAILED ESTIMATE OF SINGLE STORY BUILDING**

##### **2.1.0 Understand given drawing and compute quantities**

- 2.1.1 Describe different methods of taking quantities by centre line method, long and short wall method
- 2.1.2 Compute the estimate of compound wall, steps, doors, windows and ventilators
- 2.1.3 Compute the quantities except finishing work for One roomed building (RCC roof- Flat & Sloped), Two roomed building (RCC roof-Flat & Sloped),A residential building with RCC roof-(Flat & Sloped) ,office building with RCC roof

### **MODULE-III**

##### **3.1.0 Understand given drawing and compute quantities**

- 3.1.1 Compute quantities of all finishing work ,water supply and sanitary items for One roomed building (RCC roof-Flat & Sloped), Two roomed building (RCC roof-Flat & Sloped),A residential building with RCC roof-Flat & Sloped ,office building with RCC roof.
- 3.1.2 Compute the method of taking quantities of masonry well , RCC water tank and WBM road

### **MODULE-IV**

##### **4.1.0 Analysis of rates and abstract of estimate**

- 4.1.1 Define cost of materials at source and at site – conveyance charges – Lump sum items - extra labour – contractor's profit
- 4.1.2 Identify standard data book -schedule of rates
- 4.1.3 Prepare conveyance statement
- 4.1.4 Prepare rate analysis using standard data book, conveyance statement and schedule of rate
- 4.1.5 Identify Rules of measurements – rules regarding tolerance of wastage of materials and extra labour.
- 4.1.6 Understand the idea of preparing the abstract of Estimate

## State Institute of Technical Teachers Training & Research, Kalamassery

**Note:** While taking estimates students should be taken to field for taking the actual measurements of each typical case and asked to compute quantities. Practical sessions are included for this exercise.

Examination of this paper will be conducted similar to theory paper

### **CONTENT DETAILS**

#### **MODULE-I**

Quantity surveying-quantity surveyor– duties of quantity surveyor-essential requirements of quantity surveyor – Estimate -types – detailed estimate , supplementary estimate, revised estimate, annual repair and Maintenance, approximate estimate-types of approximate estimate-problems-Units of measurements for different items as per standard – sundries- Lump sum- Lead and lift- contingencies-unforeseen items-work charged establishment-Estimate PAC-Earth work computation – Trapezoidal – mid section-mean section (trapezoidal) - Prismoidal formula –computation of earth work from Longitudinal section and Cross section (no transverse slope)- Capacity of reservoir from contour map

#### **MODULE – II**

Different methods of taking out quantities – Center line method – long wall short wall method  
Compute quantities of a compound wall – steps - doors-windows-ventilator

#### **Taking out quantities of all items of the following excluding finishing items**

1. One roomed building (RCC roof-Flat & Sloped)
2. Two roomed building (RCC roof-Flat & Sloped)
3. A residential building with RCC roof-Flat & Sloped
4. An office building with RCC roof

#### **MODULE – III**

Taking out quantities of all finishing items and water supply and sanitary items

1. One roomed building (RCC roof-Flat & Sloped)
2. Two roomed building (RCC roof-Flat & Sloped)
3. A residential building with RCC roof-(Flat & Sloped)
4. An office building with RCC roof
5. Masonry Well.
6. Ground level RCC water tank.
- 7 W B M road

**MODULE – IV**

cost of materials at source and at site – conveyance charges – standard data book –schedule of rates – Lump sum items –extra labour – contractor’s profit- conveyance statement for different materials– schedule of rates labour and materials -Analysis of rates-preparation of standard DATA of CPWD with specification as per CPWD standard- Rules of measurements – rules regarding tolerance of wastage of materials- general rules for taking measurements as per CPWD standard-abstract of estimate-preparation of abstract of estimate

**REFERENCE BOOKS**

1. B.N.Dutta : Estimating & Costing ; UBS Publishers.
2. S.C.Rangawala :Estimating & Costing ; Charotar Publishing House.
3. PWD Schedule of rates
4. CPWD data book