



GOVERNMENT OF TAMILNADU  
DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI

**STATE PROJECT COORDINATION UNIT**

*(Established Under Canada India Institutional Cooperation Project)*

**CURRICULUM**

Course Name	QUANTITY SURVEYING
Course Code	CE / 2020 / 018
Course Duration	80 Hours
Minimum Eligibility Criteria and Pre requisites (if any)	10 <sup>th</sup> / +2 / Diploma / Graduates
Course Objectives	<p>Training Module has been designed for the Participants to</p> <ul style="list-style-type: none"> <li>Understand the fundamental concepts of machine utilization</li> <li>Develop the skill to calculate appropriate cost of building</li> <li>Develop the skill to calculate ownership cost and operation cost</li> </ul>
Course Outcomes	<p>At the end of the training, participants will be able to</p> <ul style="list-style-type: none"> <li>Craft detailed specification and workout rate analysis for all works related to civil engineering projects</li> <li>Prepare cost estimate and valuation of civil engineering works</li> </ul>
Expected Job Roles	<ul style="list-style-type: none"> <li>Quantity Surveyor</li> </ul>

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
CE / 2020 / 018	QUANTITY SURVEYING	Theory	80	50	100	3 Hours
		Practical	----	----	---	
		<b>Total</b>	<b>80</b>	<b>50</b>	<b>100</b>	

**DETAILED SYLLABUS**

<b>UNIT NO.</b>	<b>MODULES</b>	<b>NO. OF THEORY HOURS</b>
<b>I</b>	<b>INTRODUCTION TO QUANTITY SURVEYING</b>	10
	Introduction to Estimation - Definition of estimation – Types of estimates – Approximate estimates – Detailed estimate – Various parts of detailed estimate.	
<b>II</b>	<b>APPROXIMATE ESTIMATE</b>	10
	Approximate estimates - Types of approximate estimates	
<b>III</b>	<b>PREPARATION OF DATA</b>	13
	Preparation of Data - Lead statement – Lead statement calculations – Schedule of Rates (S.S.R.B)	
<b>IV</b>	<b>RATE ANALYSIS</b>	10
	Rate analysis - Cost of materials and lead particulars – Cost of labor – Brick masonry and stone masonry – Lead statement - Problems solved	
<b>V</b>	<b>GROUP SYSTEM</b>	10
	Group system - Introduction to taking off and recorded dimensions - Aquarium dimensions – billing – Abbreviation in group systems	
<b>VI</b>	<b>ABSTRACTING AND BILLING</b>	12
	Abstracting - Function of abstracting – Preparing the Abstract – Method of writing Bill – Construction of sub structure	
<b>VII</b>	<b>RENT CALCULATIONS</b>	15
	Rent calculations - Fixation of rent – Outgoings – Types of outgoings – Gross income – Net income – Year purchase – Capital value – Capital cost – Standard Rent – Fair rent – Manual rent – Economical rent – Problems on rent calculations	
<b>TOTAL HOURS</b>		<b>80</b>

S.NO.	Sample Problems to Solve
1.	Concrete with 40mm size broken stone in lime mortar 1:2 - 5 m <sup>3</sup> sub data lime mortar 1:2 – 1 m <sup>3</sup>
2.	Cement concrete 1:2:4 using 40mm size stone - 10 m <sup>3</sup>
3.	Estimation of a two roomed building by group system
4.	A building is constructed at the cost of Rs.500000.00 on a free hold and measuring 1000 sq. m rate of land in neighborhood in Rs.1200 /- per sq. m calculate net rental and gross rent of property is expenditure on all outgoings including sinking fund Rs. 20000.00 assume 6% as net return on be cost of construction and 4% on the land value.
5.	A building was constructed in the year 2011 for a total cost of Rs.40 lakhs. Its Salvage value in the year 2030 is expected to be Rs.15 lakhs. Find the book value of the building in the year 2020 by sinking fund method, and also determine the annual installment of sinking fund, Assuming the rate of interest as 8%.
6.	A person is having a house building worth Rs.12,00,000 at present market value, constructed 10 years back in a plot area of 240m <sup>2</sup> . The present market value of land in the locality is Rs.3000 per m <sup>2</sup> . The cost of amenities provided to the building is Rs.1,20,000. Allowing a rate of depreciation of 2% and taking the nominal interest on investments as 9%, fix a fair monthly rent of the building.

### **HARDWARE REQUIREMENT**

<b>SL. NO.</b>	<b>LIST OF TOOLS / EQUIPMENTS / MATERIALS</b>
1.	Surveying Magnetic Locators
2.	Ductile iron water lines
3.	Electronic levels
4.	Measurement Book

### **SOFTWARE REQUIREMENT**

<b>SL. NO.</b>	<b>NAME OF THE SOFTWARE</b>
1.	NIL

### **REFERENCE BOOKS**

<b>SL. NO</b>	<b>NAME OF THE BOOK</b>	<b>AUTHOR</b>	<b>PUBLISHER</b>
1.	Quantity Surveying	Dutta. B. N.	UPS Publisher Pvt., Ltd., 2003
2.	Quantity Surveying	Kohl. D.	Chand & Company Ltd., 2004

## ASSESSMENT AND CERTIFICATION

S.No	Criteria for Assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory conducted internally in the CIICP Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory.
3.	The assessment for theory part will be based on the marks scored in the end theory examination on the knowledge bank of questions.
4.	The passing criteria for successful completion of training is every trainee should score 50% of marks in the End Theory and Practical examination.
5.	On successful completion of training, Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnics.

## END EXAMINATION ALLOCATION OF MARKS

S. No.	Description	Maximum Marks
1.	THEORY EXAM PART – A (20 Qns x 2 Marks) : 40 PART – B (10 Qns x 3 Marks) : 30 PART – C ( 6 Qns x 5 Marks) : 30	100
<b>TOTAL</b>		<b>100</b>

## **THEORY MODEL QUESTION PAPER**

**CE / 2020 / 018 – QUANTITY SURVEYING**

(Maximum Marks: 100)

### **PART - A**

Answer any **Twenty** Questions

**20 x 2 = 40 Marks**

- 1) Define estimate.
- 2) What are the types of estimate?
- 3) Why revised estimate is prepared?
- 4) Define painting co-efficient.
- 5) Define lead statement.
- 6) Define sub date.
- 7) What is SSRB?
- 8) Define detailed estimate.
- 9) What is abstract estimate?
- 10) Explain methods of writing bill?
- 11) What are systems of Estimate?
- 12) What are the methods of Squaring?
- 13) Define billing.
- 14) Write the abbreviations for D.P.C, B.W, C.M& R.C.C?
- 15) Write measuring unit for Brick work, plastering, partition wall?
- 16) Define out goings.
- 17) What are the Types of outgoing?
- 18) Define market value and book value.
- 19) Define the terms: Gross income and net income.
- 20) What is meant by Sinking fund?
- 21) Define term Rent.
- 22) What are the types of rent?
- 23) Define the term Year of purchase.
- 24) Define capital value and salvage value.
- 25) What is M-Book?

### **PART - B**

Answer any **Ten** Questions

**10 x 3 = 30 Marks**

- 1) What are the differences between revised estimate and sub estimate?
- 2) Explain how will you work out the rough estimate for the following civil work  
i) Hospital ii) A water supply Scheme

- 3) Explain the method of writing bill?
- 4) Why the rent calculation is necessary?
- 5) What is lead statement and write the table format for lead statement?
- 6) Explain about S.S.R.B?
- 7) Write the order of taking off Quantity for a building?
- 8) Write order of Abstracting?
- 9) What are the methods of writing bill?
- 10) How to casing and reducing the abstract bill is done?
- 11) Write the details about Sinking fund and Co-Efficient of Sinking fund?
- 12) Write the difference between Scrap value and Salvage value?
- 13) What the factors affecting the value of a Property?
- 14) Write the Types of leases?
- 15) Write the classification of Properties?

### **PART - C**

Answer any **Six** Questions

**6 x 5 = 30 Marks**

- 1) Explain the various types of estimate?
- 2) Explain briefly about M-BOOK?
- 3) Explain the methods of writing a bill?
- 4) A building owner sets a Rs.25000 as sinking fund in the bank every year from the rent of the building. If the rate of interest of the bank is 9% , What will be the amount available with him After 20 Years?
- 5) Write the methods of calculation of Depreciations?
- 6) A shopping complex was purchased for Rs 20,00,000. Assume salvage value after 7 years as Rs. 15,00,000 find the annual Depreciation by (i) Straight line method (ii) Constant Percentage method (iii) Sinking fund method assuming 6% interest?
- 7) Calculate the fair rent of residential building, the cost of building at the present rate is Rs. 6, 50,000. The age of building is 30 years. The plot area is 250m<sup>2</sup>. The cost of land in the locality is Rs. 850 per m<sup>2</sup> the present value of the sanitary and water supply works out to Rs. 75,000. Allow a depreciation of 1.5%.
- 8) The cost of the construction of polytechnic college building of yearly intake 120 students is found to be Rs. 96 lakhs. Allowing 10% increase in the cost of material and labours determine the probable expenditure towards the construction of a new building for a Polytechnic college of yearly intake 180 students?
- 9) Determine the quantity of work and material for R.C.C flooring with Tiles.Room Size 10mX10m, ii) R.C.C mix 1:2:3, iii) tiles size 600mmX600mmX12mm.
- 10) Prepare the cutting length and quantity of steel for a Beam of size 300mmX500mm to a length of 5M.

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