

INSTITUTE	DIPLOMA STUDIES
PROGRAM	DIPLOMA ENGINEERING (CIVIL ENGINEERING)
SEMESTER	4
COURSE TITLE	QUANTITY SURVEY AND VALUATION
COURSE CODE	09CI1406
COURSE CREDITS	4

Objective:

- 1 To explain the principles and methods of quantity surveying and valuation.
- 2 To take out quantities of various items of work from drawings and specifications
- 3 To prepare detailed estimates and cost of construction projects
- 4 To carry out rate analysis for different construction items.
- 5 To apply valuation methods to determine the value of different properties.

Course Outcomes: After completion of this course, student will be able to:

- 1 Select modes of measurements for different items of works.
- 2 Prepare approximate and detail estimate of civil engineering works
- 3 Take out quantity of various items used in civil engineering works
- 4 Use relevant software for estimating the quantities and cost of item of works
- 5 Justify rate for given items of work using rate analysis techniques.

Pre-requisite of course: Basic knowledge of Building Planning

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	4	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	Area and volume Area and volume of various shapes used in civil engineering Area of the triangle, trapezoid and various other shapes, Volume of cube, cuboid, pyramid, frustum of pyramid Cone, frustum of cone and various other shape used in foundation	2

Contents : Unit	Topics	Contact Hours
2	Estimation and modes of measurement Qualities of good estimator, Role and responsibility of estimator various types of estimates, factors affecting estimation of building, Various methods of estimate Service unit method, Plinth area rate method, Cubical content method, Typical bay method, Approximate quantity method (with simple numerical), different items and units of measurement, Market rates of material and labour, Introduction to schedule of rates, Standard formats of Measurement sheet, Abstract sheet, Face sheet., Rules for deduction in different category of work as per IS:1200, Description / specification of items of building work as per PWD /DSR	8
3	Estimate for Civil Engineering Works Long wall and Short wall method, Centre line method, Bar bending schedule for footing, column, beam, Lintel, chajja and slab elements, Earthwork - Quantities for roads, Embankment and canal by – Mid sectional area method, mean sectional area method, Prismoidal and trapezoidal formula method., Use of computer /softwares/ programs for detailed estimate Preparation of Civil Engineering Works	8
4	Rate analysis Rate Analysis: Definition, purpose and importance., Lead (Standard and Extra), lift, overhead charges, water charges and contractors profit, Task work- Definition, types, Task work of different skilled labor for different items., Categories of labors, their daily wages, types and number of labors for different items of work, Preparing rate analysis of different items of work pertaining to buildings and roads.	5
5	Valuation Definitions of value, Price and cost, Depreciation, Sinking fund different type of values and their significance, Methods of valuation of buildings and land, Estimation of values of different types of buildings and lands	5
Total Hours		28

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	Experiment 1 Area calculation of various shapes used in construction (rectangle, triangle, circle, trapezium, irregular plots)	2
2	Experiment 2 Volume calculation of various construction shapes (cube, cuboid, cylinder, cone, sphere)	2
3	Experiment 3 Estimation using Long Wall & Short Wall method for building works	6

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
4	Experiment 4 Estimation using Centre Line method for building works	6
5	Experiment 5 Preparation and verification of Bar Bending Schedule (BBS) from RCC drawings	6
6	Experiment 6 Calculation of earthwork in road construction (cutting and filling using cross-sections)	6
7	Experiment 7 Preparation of Excel sheet for Long Wall & Short Wall & centre line method method estimation	6
8	Experiment 8 Rate analysis of brick work structures including material and labour cost	4
9	Experiment 9 Valuation of construction equipment based on cost and life	4
10	Experiment 10 Study and calculation of different methods of depreciation (SLM, DBM, sinking fund)	4
11	Experiment 11 Valuation of land and buildings with example on years purchase method	6
12	Experiment 12 Field visit to residential building site to study measurement of quantities (brickwork, plastering, RCC) and compare with estimation methods	4
Total Hours		56

Textbook :

- 1 Professional practice and valuation, A.S.Kotadiya, Mahajan Publication, 2015

References:

- 1 Estimation and costing in civil engineering, Estimation and costing in civil engineering, B.N.Dutta, UBSPD, 2015

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation

Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
20.00	20.00	25.00	25.00	10.00	0.00

Instructional Method:

- 1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, Quiz, brainstorming
- 2 The internal evaluation will be done on the basis of continuous evaluation of students in the class-rooms.

Supplementary Resources:

- 1 <https://nptel.ac.in/courses/105104161>