

## ESTIMATION AND VALUATION BEG450 CI

**Year: IV**

**Semester: I**

Teaching Schedule  Hours/  Week			Examination Scheme						Total Marks
			Final				Internal Assessments		
			Theory		Practical		Theory Marks	Practical Marks	
L	P	T	Duration	Marks	Duration	Marks			
3	-	3	3	80	-	-	20	-	100

### Course Objective:

The objective of this course is to give the students basics knowledge of estimating and valuation of civil engineering works. After completing this course the students will also be able to analyze the rates and estimate the various construction works.

### Course Contents:

#### 1.0 Introduction

**(2 hrs)**

- 1.1 General (definition, principle, Importance and purpose)
- 1.2 Estimated cost and actual cost
- 1.3 System of Units
- 1.4 Units of measurement and payments for items of work and materials
- 1.5 Data requirement of estimating

#### 2.0 Method of Estimating

**(3 hrs)**

- 2.1 Methods of measurements of building and civil engineering works
- 2.2 Subheads of various items of work
- 2.3 Various methods of calculating quantities: center line method, long and short wall method; crossing method
- 2.4 Abstracting bill of quantities
- 2.5 Transportation cost, overheads and contingency.

#### 3. Specification

**(3 hrs)**

- 3.1 Introduction
- 3.2 Importance
- 3.3 Purpose of specification
- 3.4 Types of specification – general, detailed
- 3.5 Detail of specification writing of building works

- 3.5.1 Site works
- 3.5.2 Civil works
- 3.5.3 Building materials and finishing
- 3.5.4 Water supply and sanitary work in building.

#### **4.0 Types of Estimates (4 hrs)**

- 4.1 Approximate estimates
- 4.2 Detailed estimates
- 4.3 Revised estimates
- 4.4 Supplementary estimates
- 4.5 Annual repair or annual maintenance estimates
- 4.6 Extension and improvement of estimates
- 4.7 Complete estimates

#### **5.0 Detailed Estimates (20 hrs)**

- 5.1 Estimate of walls
- 5.2 Estimates for a one room building and two room building
- 5.3 Estimate of earthwork of road construction in plane area and hill area
- 5.4 Estimate of earth work in canal
- 5.5 Estimate of an Aqueduct
- 5.6 Estimate of Siphon.
- 5.7 Estimate of R.C.C. Slab Culvert.
- 5.8 Estimate of R.C.C. Tee-Beam Decking
- 5.9 Estimate of a water supply (underground RCC water tank) and sanitation (Soak pit and Septic tank) system of a residential building

#### **6. Analysis of Rates (8 hrs)**

- 6.1 Introduction
- 6.2 Purposes of rate analysis
- 6.3 Importance of rate analysis
- 6.4 Requirements of rate analysis
- 6.5 Factors affecting the rate analysis
- 6.6 Cost of items
- 6.7 Norms and standards of Nepal for rate analysis and cost estimates
- 6.8 Procedure of rate analysis: for building works, for sanitary and water supply works, for road works, for irrigation works, for suspension and suspended bridge works

#### **7. Valuation (5 hrs)**

- 7.1 Introduction
- 7.2 Purpose of valuation
- 7.3 Principles of valuation
- 7.4 Terms used in valuation
- 7.5 Methods of determining value of property
- 7.6 Methods of valuation report writing

**Course Project:**

Detailed Estimates and Costing of a Two Storey Residential Building in a Particular Place of Nepal. (The Nepalese Norms and Standards of Rate Analysis should be followed)

**References:**

- Amarjit Aggarwal, Civil Engineering Quantity Surveying and Valuation, Katson Publishing House, 1985.
- Seymour Berger and Jules B. Godel, Estimating and Project Management for Small Construction Firms, Van Nostrand Reinhold Publishing Company, New York, 1977