

## Th5. ESTIMATION & COST EVALUATION – II

Name of the Course: Diploma in Civil Engineering			
Course code:		Semester	5th
Total Period:	60	Examination	3 hrs
Theory periods:	4P/week	Class Test:	20
Maximum marks:	100	End Semester Examination:	80

### A. RATIONALE

The course exposes the students to the techniques and best practices to prepare detailed estimates of roads, bridges, culverts, irrigation structures and PWD works.

### B. COURSE OBJECTIVES

On completion of the course, students will be able to

1. Create detailed estimate of culverts and bridges
2. Prepare estimates of irrigation structures
3. Prepare estimates of a macadam road and a national highway in cutting and filling
4. Prepare detailed estimates for septic tank and soak pits
5. Prepare detailed estimates of miscellaneous works
6. Comprehend the management practices in Public Works Department
7. Interpret the building bylaws furnished by regulatory bodies

### C. TOPIC WISE DISTRIBUTION OF PERIODS

Chapter	Name of topics	Hours
1.	Detailed estimate of culverts and bridges	12
2.	Estimate of irrigation structures	14
3.	Detailed estimate of roads	12
4.	Detailed estimates of miscellaneous works	12
5.	PWD accounts works	10

### D. COURSE CONTENTS:

1. **Detailed estimate of culverts and bridges**
  - 1.1 Detailed estimate of a RCC slab culvert with right angled wing walls with bar bending schedule.
  - 1.2 RCC Hume pipe culvert with splayed angled wing wall
2. **Estimate of irrigation structures**
  - 2.1 Detailed estimate of simple type of vertical fall to given specification
  - 2.2 Detailed estimate of drainage siphon to given specification.
3. **Detailed estimate of roads**
  - 3.1 Detail estimate of a water bound macadam road
  - 3.2 Detailed estimate of a flexible pavement in cutting / filling
  - 3.2 Detailed estimate of septic tank and soak pit for 50 users
4. **Miscellaneous estimates**

4.1 Tube well, Piles and Pile cap, Isolated and combined footings.

## 5. PWD Accounts works

### 5.1 Works

5.1.1 Classification of work-original, major, petty, repair work, annual repair, special repair, quadrantal repair.

5.1.2 Concept of Method of execution of works through the contractors and department, contract and agreement, work order, types of contract, piece work agreement.

### 5.2 Accounts of works –

#### 5.2.1 Explanation of various terms

Administrative approval, technical sanction, tender, preparation of notice inviting tender, quotations, earnest money, E-tendering, security deposit, advance payment, intermediate payment, final payment, running bill, final bill, regular and temporary establishment, cash, major & subhead of account, temporary advance (imprest money), supervision charges, suspense account, debit, credit, book transfer, voucher and related accounts .

5.2.2 Measurement book use & maintenance, procedure of marking entries of measurement of work and supply of materials, labour employed, standard measurement books and common irregularity

5.2.3 Muster roll : Its preparation & use for making payment of pay & wages

5.2.4 Acquittance Roll : Its preparation & use for making payment of pay & wages

5.2.5 Labour & labour report, method of labour payment, use of forms and necessity of Submission

5.2.6 Classification of stores, receipt / issue statement on standard form, method of preparation of stock account, preparation and submission of returns, verification of stocks, shortage and excess

5.3 Building BYLAWS and REGULATORY Bodies, Development authorities, types and their levels, RERA etc.

## E. SYLLABUS COVERGE UPTO INTERNAL ASSESSMENT

Chapters 1, 2, 3

## F. RECOMMENDED BOOKS

Sl. No	Name of Authors	Titles of Book	Name of Publisher
1	M.Chakraborty.	Estimating, Costing, specification & Valuation in Civil Engineering	Published by author
2	B.N.Dutta.	Estimating & Costing	UBSPD
3	Birdi & Ahuja.	Estimating & Costing	Dhanpat Rai Publication
4	Latest Orissa PWD Schedule of Rates & Analysis of rates		Govt. of Odisha