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Construction Management — Complete Syllabus (Program Elective-02, Option A)

BTEUP Diploma in Civil Engineering • 6th Semester • Session 2026-27

Subject 6.1 (Program Elective-02, Option A) • Total 100 Marks • 4 Credits • L 3 - T 1 •

Choose this OR Advance Construction Technology

Examination Scheme

Code	Paper	Type	L - P	Credits	Internal	External	Total
6.1	Program Elective-02: Construction Management	Theory	3 - 0	4	Theory 40	Theory 60 (3 hrs)	100
Construction Management Total				4	40	60	100

What This Subject Aims To Do

To understand contract management and associated labour laws, prepare and understand the principles involved in site layout, know the procedure for scheduling of various activities in a construction project, understand labour laws and the procedure for arbitration and settlements, and know different safety measures in construction projects.

Unit-Wise Complete Topic List

Unit	Topic	Periods	Marks Share
1	Construction Industry and Management	8	15%
2	Construction Planning	12	25%

3	Organization	10	20%
4	Accounts and Entrepreneurship	17	25%
5	Inspection, Quality Control and Safety in Construction	9	15%

Unit 1 — Construction Industry and Management (8 Periods, 15%)

Topics: Significance of construction management, main objectives of construction management and overview of the subject, functions of construction management — planning, organising, staffing, directing, controlling and coordinating, meaning of each of these with respect to construction job, classification of construction into light, heavy and industrial construction; stages in construction from conception to completion, the construction team: owner, engineer, architect and contractors, their functions and inter-relationship, resources for construction industry.

Unit 2 — Construction Planning (12 Periods, 25%)

Topics: Importance of construction planning — stages of construction planning — pre-tender stage, contract stage; contracts and e-tendering — different types of contracts — penalties and arbitration; scheduling construction works by bar charts — definition of activity, identification of activities, preparation of bar charts for simple construction work, preparation of schedules for labour, materials, machinery and finances for small works; scheduling by network techniques — introduction to network techniques; PERT and CPM, differences between PERT and CPM terminology; methods of recording progress: analysis of progress, taking corrective actions, keeping head office informed, cost time optimisation for simple jobs — direct and indirect cost, variation with time, cost optimisation.

Unit 3 — Organization (10 Periods, 20%)

Topics: Types of organisations: line, line and staff, functional and their characteristics; site organisation: principle of storing and stacking materials at site, location of equipment, preparation of actual job layout for a building, organising labour at site; important Acts for labour welfare: Labour Welfare Fund Act 1936 (as amended), Payment of Wages Act 1936 (as amended), Minimum Wages Act 1948 (as amended), Acts relating to labour safety.

Unit 4 — Accounts and Entrepreneurship (17 Periods, 25%)

Topics: Introduction, technical sanction, allotment of funds, re-appropriation of funds, bill, contractor ledger, measurement book, running and final account bills complete, preparation of bill of quantities (BOQ), completion certificate and report, hand receipt, acquittance roll, muster roll labour, casual labour roll, duties and responsibility of different cadres, budget-stores, returns, account of stock, misc. P.W. advances, T & P — verification, survey report, road metal material charged direct to works, account — expenditure and revenue head, remittance and deposit head, definition of cash, precaution in custody of cash book, imprest account, temporary advance, treasury challan, preparation of final bills; students must learn to prepare accounts register; definition and concept, role and significance, risk and awards, requirement of an entrepreneur, development programmes existing in India; GST — income tax — excise duty — labour cess.

Unit 5 — Inspection, Quality Control and Safety in Construction (9 Periods, 15%)

Topics: Need for inspection and quality control, principles of inspection, stages of inspection and quality control for — earth work, masonry, RCC, sanitary and water supply services; safety in construction industry — causes of accidents, remedial and preventive measures; safety campaign and safety devices, safety training, fire safety.

Reference Books (as listed in the syllabus)

- Sharma S C and Deodhar S V, Construction Engineering and Management, Khanna Book Publishing, New Delhi.
- Gahlot, P.S. and Dhir, B.M, Construction planning and management, New Age International (P) Ltd. Publishers, New Delhi.
- Shrivastava, U.K., Construction planning and management, Galgotia Publication Pvt Ltd., New Delhi.
- Mantri, S., The A To Z of Practical Building Construction and its Management, Satya Prakashan, New Delhi.
- Khanna, O.P., Industrial Engineering and management, Dhanpat Rai, New Delhi.
- Punmia, B.C. and Khandelwal, K.K., Project Planning and Controlling with PERT And CPM, Laxmi Publications (P) Ltd.
- Sengupta, B., Guha H., Construction Management and Planning, Tata-McGraw Hill.
- Harpal, Singh, Construction Management and accounts, Mc-Graw Hill.
- Sharma, S.C., Industrial Engineering and Management, Khanna Publications, New Delhi.

follow the official syllabus; short explanations are the author's own plain-English summaries, not syllabus text.
Please confirm with your own polytechnic for any local changes.

