

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC SEMESTER : VI

CIVIL ENGINEERING

Subject Name: **CONSTRUCTION MANAGEMENT AND ECONOMICS**

| Sr. No. | Course Contents |
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| 1. | General: Construction as industry, scope, objectives and functions of administration in construction industry, interactions of construction economy, engineer and constructor, construction resources and co-ordination. |
| 2. | Management: Management, definitions, functions, principles, systems, tools and techniques |
| 3. | Planning: Definition, Bar charts, network techniques, network analysis, Crashing, optimization, updating, resource allocation, resource levelling, resource smoothening. |
| 4. | Organising: Definition, functions, types of organization structures suitability |
| 5. | Controlling: Definition, establishing control standards. Measurements of variations with respect to control standards. |
| 6. | Monitoring: Definition, mitigating, variations with respect to control standards. |
| 7. | Human Resource Management: Characteristics, sources, labour relations, legislature and welfare, labour turn-over efficiency, wages and other incentives. |
| 8. | Materials Management: Modes and limits of procurement, types of materials and storage, distribution, accounting and control, order point and order quantity, disposal of surplus-materials, selective inventory control, Job layout |
| 9. | Equipment Management: Classification and characteristics of construction equipments, sources, owning and operating cost, economic life, replacement analysis, equipment v/s labour intensive works, and their balancing |
| 10. | Economic Analysis: economic analysis of alternatives and decision making, equivalence, break-even & sensitivity analysis, and construction cost index and its applications. Budget; functions, inflation deflation, engineer's budget. |
| 11. | Quality Management: Quality Control system, Quality assurance system, Quality review and Quality audit based on ISO: 9001-2001 series. |

Reference Books:

1. Construction planning equipments & methods By R.L.Peurifoy & C.J.Schexnayder.
2. Construction Equipment and its planning and application By Dr.Mahesh Verma
3. Construction Management and Accounts By Harpal singh
4. Construction Management and Accounts By V.N.Vazirani and S.P.Chandola
5. Project planning and Control with PERT and CPM By Dr.B.C.Punamia and K.K. Khandelwal
6. Engineering Economics By R.Panneerselvam
7. Construction Engineering & Management By S.Seetharaman
8. Construction of Structures and Management of Works By S.C.Rangwala