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**Brentwood Open Learning College**



**Diploma in Construction Management  
(Level 4)**

**Course Structure & Contents**

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## Unit 1

### Introduction to Construction Management

The unit 1 covers the following topics:

- **Introduction** (Market Size and its Importance, Features of Construction Industry, Complexity, Uniqueness, Mobility of Facilities, Multiplicity of Agencies, Organisation, Finance, Management)
- **Productivity and Labour Quality** (Productivity, Labour Quality, Safety Hazards)
- **Role of Construction Supervisor** (Position of the Construction Supervisor, Top Level Management, Mid Level Management, First-Line Management, Responsibilities of the Construction Supervisor, Construction Supervisor and the Phases of Construction Project, Supervision for the Owner/Consultant, Supervision for the Construction Agency, How will you accomplish this task successfully?)
- **Construction Supervision and Inspection and Testing** (Inspection, Construction Supervisor's Role in Ensuring Progress)

## Unit 2

### Development and Organization of Construction Projects

The unit 2 covers the following topics:

- **Introduction**
- **Project Life Cycle** (Project Phases and Processes, Project Initiation Phase, Planning and Designing Phase, Executing and Control Phase, Closing Phase, Fast Track Approach)
- **Project Initiation Phase** (Need Identification, Pre-feasibility Report and its Clearance, Feasibility Study, Market Analysis, Technical Analysis, Financial Analysis, Economic Analysis, Ecological Analysis, Feasibility Study Report, Investment Appraisal, Sources of Finance, Project Statutory Clearance, Project Scope Definition)
- **Project Planning and Design Phase** (Planning Processes, Designing Processes, Schematic Design Process, Design Development Process, Drawings and Specifications Documentation Processes, Drawing Sets, Specifications, Project Procurement Process)
- **Project Execution and Control Phase** (Project Execution Processes, Project Control Phase)
- **Project Close-Up Phase**
- **Project Organisation**

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## Unit 3

### Importance of Estimation in Construction Work

The unit 3 covers the following topics:

- **Introduction**
- **Estimate of a Construction Project** (Purpose of an Estimate, Components of an Estimate)
- **Estimation during Feasibility Studies** (Quick Method of Approximate Estimate, Cost Data)
- **Estimation during Project Report Stage and for Project Approval** (Execution Strategy, Estimating Procedure)
- **Estimating for Planning Bill of Quantities** (Departmental Construction, Construction through Contract, General Items, Estimating for Planning and Scheduling of Construction, Estimation for Variations)
- **Estimating, for Revision of Project Budgets** (Project Budget, Revised Project Budget)

## Unit 4

### Preliminary Investigations, Location and Site Selection

The unit 4 covers the following topics:

- **Introduction**
- **Types of Buildings** (Residential Buildings, Educational Buildings, Institutional Buildings, Assembly Buildings, Business Building, Zoning and Other Factors, Environmental Impact Study (EIS), Need For Expertise in Site Selection, Mercantile Buildings, Industrial Building, Storage Buildings, Hazardous Buildings, Other Classifications)
- **Criteria for Location and Site Selection** (Basic Requirements)
- **Climatic Considerations**
- **Topographic Considerations** (Topographic Data, Geological Information, Structure of the Rocks, Ground Stability, Constructions at Rocky Sites, Engineering Geology, Hydrology of the Area, Flood Plains and Flood Protection, Ground Water and Drainage, Water Supply Requirements, Soil Exploration, General Considerations, Description of Soils, Behaviour of Soil Types, Safe Bearing Capacity, Allowable Bearing Pressure)

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## Unit 5

### Site Organization

The unit 5 covers the following topics:

- **Introduction**
- **Access to Site and Site Roads** (Access to Site, Site Roads)
- **Site Organisation** (Subsurface Drainage)
- **Site Accommodation** (Sitting of Administrative Office, Types of Construction, Temporary Housing for Labourers, Essential Facilities, Temporary Services)
- **Storage for Materials** (Cement, Lime, Masonry Units, Aggregates, Fly ash, Timber, Structural and Reinforcing Steel, Doors, Windows and Ventilators, Roofing Materials, Boards, Plastic and Rubber Sheets, Glass Sheets, Asbestos Cement Pipes and Fittings , Polyethylene Pipes, Unplasticised PVC Pipes, Pipes of Conducting Materials, Piling and Poles, Paints, Varnishes and Thinners, Bitumen, Tar and Asphalt, Flammable Materials, Water, Sanitary Appliances)
- **Storage for Equipment and Tools**
- **Plant Requirements and Movement of the Plants**
- **Site Electricity** (Supply Intake Arrangements)
- **Water for Construction** (Sources of Water, *Public Water Supply*, Ground Water, Other Sources, Site Protection)
- **Types of Fencing** (Fencing Materials, Small Sites, Large Sites, Gates for Fences, Additional Security Measures, Hutting, Administration Offices, Entrance and Exit Control)

## Unit 6

### Planning for Equipment

The unit 6 covers the following topics:

- **Introduction**
- **Equipment Selection** (Equipment Productivity Management, Product Features and Attachments, Supplier Support, Cost)
- **Equipment Planning**
- **Matching of Construction Equipment and Plant** (Construction Plant and Job Layout)
- **Financing**
- **Hire-Purchase Options**
- **Owning and Operating Cost**

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## Unit 7

### Equipment Management

The unit 7 covers the following topics:

- **Introduction**
- **Equipment Management Organisation**
- **Spare Parts Inventory** (Interchangeability of Spare Parts, Inventory Management)
- **STOCK PLANNING**
- **Economic Life**
- **Replacement Analysis**
- **Necessity of Maintenance Management**
- **Principal Aspects and Methods of Maintenance**
- **Equipment Servicing and Servicing Facilities**
- **Field Repair and Maintenance Facilities** (Tools and Aids for Maintenance, Lubrication Requirements of Construction Equipment, Storage and Handling of Lubricants)
- **Inspection and Maintenance Program**
- **Data Bank**
- **Equipment Management Information Service**

## Unit 8

### Material Management

The unit 8 covers the following topics:

- **Introduction**
- **Definition and Scope** (Materials Planning and Control, Purchasing, Stores and Inventory Control, Importance of Materials Management, Issues in Materials Management, Issues Relating to Materials Planning, Materials Identification, Standardisation, Make or Buy, Coding & Classification, Quality Specification Introduction)
- **Issues Relating to Purchasing** (Centralised Vs Decentralised Purchasing, Single Source Vs Multiple Source Purchasing, Vendor/Ancillary Development, Size and Timing of Purchase Orders, ABC Analysis, HML Classification, VED Classification, FSN Classification, Vendor Rating, Weighted Point Method, Check List Method, Critical Incidents Method, Quality Assurance of Incoming Materials)
- **Issues Relating to Storage and Material Handling** (Optimum Level of Inventory, Location and Layout of Store, Storage System, *Fixed Location, Random Location, Zoned Location*, Receiving Inspection and Record Keeping, Material Handling and Equipment)

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- **Integrated Materials Management Approach** (Advantages in Integrated Materials Management Approach, Better Accountability, Better Coordination, Better Performance, Adaptability to EDP, Miscellaneous Advantages)
  - **Material Management in Construction** (Materials Costs, Labour Costs, Special Materials Costs)
  - **What Encompasses Modern Construction Material Management**

## Unit 9

### Purchase and Stores Management

The unit 9 covers the following topics:

- **Introduction**
- **Elements of Purchasing** (Right Price, Right Quality, Right Time, Right Source, Right Quantity, Right Place, Fundamental Objectives of Purchasing)
- **MATERIALS PURCHASING SYSTEM** (Indenting, Enquiry Stage, Offer Processing Stage, Ordering Systems, Cash Purchase, Tender System, Open Tender, Limited Tender, Single Tender, Rate and Running Contract, Sub-contracting, Systems Contract, Stockless Purchase, Blanket Order, Seasonal Buying, Receipt of Material, Transportation and Inspection, Material procurement Cycle)
- **Warehouses or Stores** (Objectives and Functions of Stores, Location and Layout of Stores, Location Determinants of Stores, General Criteria for Layout of Stores)
- **Preservation of Stores Material**
- **Stores Systems and Procedures** (Management of Receipts, Issue Control, Stores Documentation,

## Unit 10

### Specialised Buying & Vendor Management

The unit 10 covers the following topics:

- **Introduction**
- **Vendor Management** (What is the Right Source?, Identification of the Right Source, Source Selection, Vendor Registration and Development, Vendor Rating, Aims of Vendor Rating, Advantages of Vendor Rating, Vendor Rating Methods, Parameters of Vendor Rating)
- **Learning Cycle and Training** (Pitfalls of Learning Curve?)
- **Documenting the Processes, Codification and ISO 9000**

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- **Material Management Computerisation**

## **Unit 11**

### **Quality Control Management**

The unit 11 covers the following topics:

- **Introduction**
- **Quality Control** (Disadvantages of Quality Control, Communication, Quality Control and Quality Assurance, Internal Quality Control Programme, Consultants for Quality Control)
- **Economic Objectives of Quality Control**
- **Field Quality Control**
- **Achieving Field Quality Control** (Ensuring Quality Control in the Field)
  
- **Promotion of Quality Control in the Field**
- **Contractor Quality Control** (Advantages of Contractor Quality Control, Disadvantages of Contractor Quality Control)
- **Importance of Specifications**
- **Incentives and Penalties in Specifications** (Incentives, Penalties, Workmanship as a Mark of Quality)
- **Final Inspection**

## **Unit 12**

### **Human Resource Management**

The unit 12 covers the following topics:

- **Introduction**
- **Human Resource Management** (Concept, Growth, Role and Functions, Manpower Planning for Construction Companies, Objectives, Techniques of Manpower Planning, Line & Staff Functions, Recruitment, Sources of Recruitment, Internal Sources, External Sources, Selection, Stages of Selection, Placement, Induction and Training, Purpose of Training, Types of Training Programmes, Methods of Training, Time Office and Establishment Functions, Establishment Functions, Influencing Factor, Components of Salary, Discipline, Positive Discipline, Separation, Voluntary Separation, Involuntary Separation)

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## Unit 13

### Legal Aspects of Contracts

The unit 13 covers the following topics:

- **Introduction**
- **Definition of a Contract**
- **Essential Elements of a Contract** (Agreement, Lawful Subject Matter, Valid Consideration, Competent Parties, Provisions of the Law with Regard to Form)
- **Types of Construction Contract** (Competitive Bid Contracts, Lump Sum Contracts, Unit Price Contracts, Combined Lump Sum and Unit Price Contracts, Negotiated Contracts, Cost plus Percentage of Cost Contracts, Cost plus Fixed Fee Contracts with a Profit Sharing Clause, Cost plus Fixed Fee Contracts with a Bonus Clause, Cost plus a Sliding Scale of Fees Contracts, Cost plus a Guaranteed Ceiling Price Contracts, Management Contracts, Architect-Engineer-Management Contracts, Combined Engineering and Construction Contracts, Joint Venture Contracts, Incentive Type Contracts for Work Outside the Country, Equipment Rental Contracts, Guaranteed Maximum Cost)
- **Purchase Orders as Contracts**
- **Subcontracts** (Awarding Subcontracts)
- **Selection of Type of Contract**
- **Project Insurance**
- **Insurance Contracts and Claims** (Insurance Contracts, Insurance Claims)
- **Procedures for Disputes at Law** (Consumer Protection)
- **Mediation**
- **Arbitration**