

## CONSTRUCTION PROJECT MANAGEMENT

### BEG 492 MS

Year: IV

Semester: I

Teaching Schedule			Examination Scheme						Total Marks
			Final				Internal Assessments		
Hours/ Week			Theory		Practical		Theory Marks	Practical Marks	
L	P	T	Duration	Marks	Duration	Marks			
3	-	2	3	80	-	-	20	-	100

#### Course Objective:

- To establish an understanding of how construction industry operates including the Project life cycle and participants involved.
- To introduce the principles of project management and its functions
- To provide the students with essentials of construction management including Procurement, planning, estimating, and scheduling
- To familiarize students with measuring and managing performance in Construction
- To present and discuss some tools to improve performance at project and Organizational level
- To increase the awareness of students on the emerging issues and advanced Processes in construction

#### Course Contents:

##### 1.0 Introduction

(3 hrs)

- 1.1 Construction management as a discipline
- 1.2 Context of construction management
- 1.3 Characteristics of the construction industry
- 1.4 Domestic and global construction market

##### 2.0 Construction Project Management

(4 hrs)

- 2.1 Definition of a project
- 2.2 Nature of construction projects
- 2.3 Project life-cycle
- 2.4 Principles of Project management
- 2.5 Project management functions.

- 3.0 Construction Cost Estimation and Bidding (5 hrs)**
- 3.1 Planning and design
  - 3.2 Project scope management
  - 3.3 Elements of cost estimation
  - 3.4 Estimating methods
  - 3.5 Project budgeting
  - 3.6 Bidding
- 4.0 Construction Project Planning and Scheduling (10 hrs)**
- 4.1 Scheduling process
  - 4.2 work breakdown structures
  - 4.3 Scheduling techniques
  - 4.4 Critical path method
  - 4.5 Resource management
  - 4.6 Project crashing.
- 5.0 Construction Procurement (5 hrs)**
- 5.1 Investing in construction projects
  - 5.2 Project finance
  - 5.3 Procurement strategies
  - 5.4 Project delivery methods
  - 5.5 Contract types
  - 5.6 National and International contracts
  - 5.7 Contract and claim management.
- 6.0 Construction Equipment (4 hrs)**
- 6.1 Equipment for excavation, fill, transportation and compaction
  - 6.2 Aggregate handling and concrete construction equipment
  - 6.3 Equipment for construction of pipes and caissons
  - 6.4 Cranes for lifting materials and parts
  - 6.5 Equipment for tunnel construction
  - 6.6 Equipment for hydraulic construction
  - 6.7 Equipment for highway and pavement construction
- 7.0 Performance Measurement (4 hrs)**
- 7.1 Definition of performance
  - 7.2 Performance issues in construction
  - 7.3 Factors affecting project success
  - 7.4 Industry reports
  - 7.5 Performance measurement tools
  - 7.6 Key performance indicators.
- 8.0 Personnel Management in Construction Project (5 hrs)**
- 8.1 Management principles: administration and organization principles
  - 8.2 Centralization and leadership styles
  - 8.3 Supervisory and leadership styles
  - 8.4 Importance of communication
  - 8.5 Information systems for decisions
  - 8.6 Motivating and directing: human elements, elements, evaluation and merit rating
  - 8.7 Personnel selection, testing and training

8.8 Trade unions and relation with management

**9.0 Performance Improvisation in Construction**

**(5 hrs)**

9.1 Benchmarking

9.2 Risk management

9.3 Financial management

9.4 Claims and dispute resolution

9.5 Human resources management

9.6 Knowledge management

9.7 Total quality management

9.8 Strategic use of IT Strategic collaborations

9.9 Health and safety.

**References:**

- Fewings, P., Construction Project Management, Taylor and Francis, New York
- Farland, M. C., Management – Principles and practice”, M.C. Farland.
- Vazirani, V. N. and Chandola, S. P., Construction Management and Accounts.
- Staya Narayan, B., Construction Planning and Equipment
- Ruskin, A. M., and Eugene Estes, W., Project Management, Marcel Dekker Publishers, 1982.
- Moder, J. J. and Philips, C., R. Project Management with CPM and PERT, Philips ,Van Nostrand Reinhold Publishers, Latest edition
- Chandra, P., Projects: Preparation, Appraisal, Implementation, Tata McGraw Hill Publishing Company Ltd. New Delhi