

## **CE8012 CONSTRUCTION PLANNING AND SCHEDULING**

### DETAILED SYLLABUS

#### **OBJECTIVE:**

- To make the students to learn about planning of construction projects, scheduling procedures and techniques, cost and quality control projects and use of project information as decision making tool.

#### **UNIT I CONSTRUCTION PLANNING**

Basic concepts in the development of construction plans-Choice of Technology and Construction method -Defining Work Tasks- Work breakdown structure- Definition-Precedence relationships among activities-Estimating Activity Durations-Estimating Resource Requirements for work activities-coding systems.

#### **UNIT II SCHEDULING PROCEDURES AND TECHNIQUES**

Relevance of construction schedules-Bar charts - The critical path method-Calculations for critical path scheduling-Activity float and schedules-Presenting project schedules-Critical path scheduling for Activity-on-node and with leads, Lags and Windows-Calculations for scheduling with leads, lags and windows-Resource oriented scheduling-Scheduling with resource constraints and precedences -Use of Advanced Scheduling Techniques-Scheduling with uncertain durations-Crashing and time/cost trade-offs -Improving the Scheduling process – Introduction to application software.

#### **UNIT III COST CONTROL MONITORING AND ACCOUNTING**

The cost control problem-The project budget-Forecasting for Activity cost control - financial accounting systems and cost accounts-Control of project cash flows-Schedule control-Schedule and Budget updates -Relating cost and schedule information.

#### **UNIT IV QUALITY CONTROL AND SAFETY DURING CONSTRUCTION**

Quality and safety Concerns in Construction-Organizing for Quality and Safety-Work and Material Specifications-Total Quality control -Quality control by statistical methods -Statistical Quality control with Sampling by Attributes-Statistical Quality control by Sampling and Variables-Safety.

#### **UNIT V ORGANIZATION AND USE OF PROJECT INFORMATION**

Types of project information-Accuracy and Use of Information-Computerized organization and use of Information - Organizing information in databases-relational model of Data bases -Other conceptual Models of Databases-Centralized database Management systems -Databases and application programs-Information transfer and Flow.

#### **TEXTBOOKS:**

1. Chitkara, K.K. "Construction Project Management Planning", Scheduling and Control, Tata McGraw Hill Publishing Co., New Delhi, 2009

2. Srinath, L.S., "Pert and CPM Principles and Applications", Affiliated East West Press, 2001

**REFERENCES:**

1. Chris Hendrickson and Tung Au, "Project Management for Construction – Fundamentals Concepts for Owners", Engineers, Architects and Builders, Prentice Hall, Pittsburgh, 2000.
2. Moder. J., Phillips. C. and Davis E, "Project Management with CPM", PERT and Precedence Diagramming, Van Nostrand Reinhold Co., 3rd Edition, 1985.
3. Willis., E.M., "Scheduling Construction projects", John Wiley and Sons, 1986.
4. Halpin, D.W., "Financial and Cost Concepts for Construction Management", John Wiley and Sons, New York, 1985.