

SARDAR RAJA COLLEGES

SARDAR RAJA COLLEGE OF ENGINEERING, ALANGULAM.

DEPARTMENT OF CIVIL ENGINEERING



SUBJECT CODE : CE 2353

SUBJECT NAME : CONSTRUCTION PLANNING & SCHEDULING.

YEAR / SEMESTER: III / VI

STAFF NAME: Prof.S.ARUL SATHIYARAJ,

A.P, DEPT.OF CIVIL ENGINEERING.

OBJECTIVE

At the end of this course the student is expected to have learnt how to plan construction projects, schedule the activities using network diagrams, determine the cost of the project, control the cost of the project by creating cash flows and budgeting and how to use the project information as an information and decision making tool.

UNIT I CONSTRUCTION PLANNING 6

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

UNIT II SCHEDULING PROCEDURES AND TECHNIQUES 12

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 11

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 8

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 8

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.

TEXT BOOKS

1. Chitkara, K.K. “Construction Project Management Planning”, Scheduling and Control, Tata McGraw-Hill Publishing Co., New Delhi, 1998.
2. Srinath,L.S., “Pert and CPM Priniples 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., C.Phillips and Davis, “Project Management with CPM”, PERT and Precedence Diagramming, Van Nostrand Reinhold Co., Third Edition, 1983.
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.

MICRO LESSON PLAN

NO OF HOURS	LECTURE TOPICS	READINGS
UNIT I CONSTRUCTION PLANNING		
1	Basic concepts in the development of construction plans.	R-4
2	Choice of Technology and Construction method.	
3	Defining Work Tasks. Definition.	
4	Precedence relationships among activities.	
5	Estimating Activity Durations.	
6	Estimating Resource Requirements for work activities. Coding systems.	
UNIT II SCHEDULING PROCEDURES AND TECHNIQUES		
7	Relevance of construction schedules.	R-4
8	Bar charts.	
9	The critical path method, Calculations for critical path scheduling.	
10	Activity float and schedules-Presenting project schedules.	
11	Critical path scheduling for Activity-on-node and with leads, Lags and Windows	
12	Calculations for scheduling with leads, lags and windows	
13	Resource oriented scheduling.	
14	Scheduling with resource constraints and precedence's.	
15	Use of Advanced Scheduling Techniques.	
16	Scheduling with uncertain durations.	
17	Crashing and time/cost tradeoffs. Improving the Scheduling process.	
18	Introduction to application software.	
UNIT III COST CONTROL MONITORING AND ACCOUNTING		
19	The cost control problem.	R-4
20	The project Budget.	
21	Forecasting for Activity cost control.	
22	Financial accounting systems and cost accounts.	
23	Financial accounting systems and cost accounts.	
24	Control of project cash flows.	
25	Control of project cash flows.	
26	Schedule control.	
27	Schedule control.	
28	Schedule and Budget updates.	
29	Relating cost and schedule information.	

UNIT IV QUALITY CONTROL AND SAFETY DURING CONSTRUCTION		
30	Quality and safety Concerns in Construction.	R-4
31	Organizing for Quality and Safety.	
32	Work and Material Specifications.	
33	Total Quality control.	
34	Quality control by statistical methods.	
35	Statistical Quality control with Sampling by Attributes.	
36	Statistical Quality control by Sampling and Variables. Safety.	
37	Statistical Quality control by Sampling and Variables. Safety.	
UNIT V ORGANIZATION AND USE OF PROJECT INFORMATION		
38	Types of project information.	R-4
39	Accuracy and Use of Information.	
40	Computerized organization and use of Information.	
41	Organizing information in databases.	
42	Relational model of Data bases.	
43	Other conceptual Models of Databases.	
44	Centralized database Management systems.	
45	Databases and application programs-Information transfer and Flow.	