

(PCC-CVE402-T) Construction Engineering & Management

Week	Lecture No.	Topic	Remarks
1	1	Introduction to Construction: Unique features, Project Types & Features	
	2	Phases of a Project, Agencies Involved, Execution Methods	
	3	Project Planning: Stages, Role of Client & Contractor, Level of Detail	
2	4	Process of Development of Plans & Schedules, WBS, Activity Lists	
	5	Assessment of Work Content, Concept of Productivities, Estimating Durations	
	6	Sequence of Activities, Activity Utility Data	
3	7	Techniques of Planning: Bar Charts, Gantt Charts	
	8	Networks: Basic Terminology, Types of Precedence Relationships	
	9	CPM Networks: AOA & AON Representation	
4	10	Computation of Float Values, Critical & Semi-Critical Paths, Calendaring	
	11	CPM: Network Analysis	
	12	PERT: Assumptions, Three Time Estimates, Analysis, Slack Computations	
5	13	PERT: Network Analysis	
	14	Calculation of Probability of Completion	
	15	Construction Equipment Basics: Conventional vs. Mechanized Methods	
6	16	Equipment for Earthmoving, Dewatering	
	17	Concrete Mixing, Transporting & Placing	
	18	Cranes, Hoists, Lifting Equipment, Equipment for Material Transportation	
7	19	Minor Test	
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8	22	Equipment Productivities	
	23	Site Layout: Enabling Structures, Site Organization, Documentation	
	24	Manpower Planning: Organizing, Staffing, Motivation	
9	25	Materials Planning: Procurement, Inventory Control	
	26	Equipment Planning & Organizing	
	27	Funds: Cash Flow, Sources of Funds, Histograms, S-Curves	
10	28	Earned Value	
	29	Resource Scheduling: Bar Chart, Line of Balance Technique	
	30	Resource Constraints & Conflicts, Aggregation, Allocation, Smoothing	
11	31	Resource Leveling, Common Good Practices in Construction	
	32	Project Monitoring & Control: Supervision, Record Keeping	
	33	Periodic Progress Reports & Meetings, Updating Plans	
12	34	Time & Cost Overruns: Causes, Corrective Measures	
	35	Lean Construction	
	36	BIM in Project Management	
13	37	Quality Control: Concept of Quality, Quality of Constructed Structures	
	38	Use of Manuals & Checklists, Role of Inspection, Statistical Q.C.	
	39	Safety, Health & Environment on Sites: Accidents & Causes	
14	40	Minor Test	
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15	43	Effects of Accidents, Preventive Measures	
	44	Costs of Accidents, Occupational Health Problems	
	45	Organizing for Safety & Health	