



Department of Civil Engineering		
B.E/B.Tech/M.E/M.Tech : Civil Engineering	Regulation: 2018	LP: CE18701
PG Specialisation : NA		Rev. No: 01
Sub. Code / Sub. Name : CE18701/ Principles of Construction Management		Date: 27/07/2022
Unit : I		

Unit Syllabus: THE OWNERS' PERSPECTIVE

9

Introduction - Project Life Cycle - Types of Construction - Selection of Professional Services - Construction Contractors - Financing of Constructed Facilities - Legal and Regulatory Requirements - Changing Environment of the Construction Industry - Role of Project Managers

Objective: Describe the steps involved in project life cycle and explain the factors influencing changing environment of construction industry

Session No *	Topics to be covered	Ref	Teaching Aids
1	Introduction	2-Ch.1; Pg. 4-5 5-Ch.1; Pg. 1-3	PPT
2	Project Life Cycle	2-Ch.1; Pg. 5-7 5-Ch.1; Pg. 3-8 6- Ch.2; Pg. 69-74	PPT
3	Types of Construction	2-Ch.1; Pg. 7-10	PPT
4	Selection of Professional Services	2-Ch.1; Pg. 11-13	PPT
5	Construction Contractors	2-Ch.1; Pg. 13-14 5-Ch.1; Pg. 14	PPT
6	Financing of Constructed Facilities	2-Ch.1; Pg. 14-15 4-Ch.6; Pg.52-53	PPT
7	Legal and Regulatory Requirements	2-Ch.1; Pg. 15-16 4-Ch.32; Pg.399-405	PPT
8	Changing Environment of the Construction Industry	2-Ch.1; Pg. 16-22	PPT
9	Role of Project Managers	2-Ch.1; Pg. 22-23 5-Ch.2; Pg. 34-36	PPT

Content beyond syllabus covered (if any):

* Session duration: 50 minutes



Sub. Code / Sub. Name: CE18701/ Principles of Construction Management

Unit: II

Unit Syllabus: ORGANIZING FOR PROJECT MANAGEMENT

9

Project Management – modern trends - Strategic Planning - Effects of Project Risks on Organization - Organization of Project Participants -Traditional Designer-Constructor Sequence - Professional Construction Management - Owner-Builder Operation - Turnkey Operation - Leadership and Motivation for the Project Team

Objective: Identify the various risks and prepare the organizational structure for the construction project

Session No *	Topics to be covered	Ref	Teaching Aids
10	Project Management	2-Ch.2; Pg. 25-27 5-Ch.1; Pg. 11-13	PPT
11	Modern trends - Strategic Planning	2-Ch.1; Pg. 27-31 4-Ch.38; Pg.440-446	PPT
12	Effects of Project Risks on Organization	2-Ch.1; Pg.31-335- Ch.14; Pg. 511-523 6-Ch.14; Pg. 542-546	PPT
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13	Organization of Project Participants	2-Ch.1; Pg.33-37 5-Ch.2; Pg. 26-31 4-Ch.16; Pg.207-212 3-Ch.7; Pg. 206-212 6-Ch.3; Pg. 98-115	PPT
14	Traditional Designer-Constructor Sequence	2-Ch.1; Pg.37-38	PPT
15	Professional Construction Management	2-Ch.1; Pg.38-40	PPT
16	Owner-Builder Operation	2-Ch.1; Pg.40	PPT
17	Turnkey Operation	2-Ch.1; Pg.41	PPT
18	Leadership and Motivation for the Project Team	2-Ch.1; Pg.41-43 6-Ch.5; Pg.216	PPT
Content beyond syllabus covered (if any): Risk Identification Process			

* Session duration: 50 minutes



Sub. Code / Sub. Name: CE18701/ Principles of Construction Management

Unit: III

Unit Syllabus: DESIGN AND CONSTRUCTION PROCESS

9

Design and Construction as an Integrated System - Innovation and Technological Feasibility - Innovation and Economic Feasibility - Design Methodology - Functional Design - Construction Site Environment.

Objective: Summarise the design methodology, technological and economic feasibility involved in construction projects

Session No *	Topics to be covered	Ref	Teaching Aids
19	Design and Construction as an Integrated System	2-Ch.3; Pg.45-47	PPT
20	Design and Construction as an Integrated System	2-Ch.3; Pg.45-47	PPT
21	Innovation and Technological Feasibility	2-Ch.3; Pg.47-49 4-Ch.2; Pg.18-19	PPT
22	Innovation and Technological Feasibility	2-Ch.3; Pg.47-49 4-Ch.2; Pg.18-19	PPT
23	Innovation and Economic Feasibility	2-Ch.3; Pg. 49-52 4-Ch.2; Pg.19-20	PPT
24	Innovation and Economic Feasibility	2-Ch.3; Pg. 49-52 4-Ch.2; Pg.19-20	PPT
25	Design Methodology	2-Ch.3; Pg. 52-55 4-Ch.2; Pg.20	PPT
26	Functional Design	2-Ch.3; Pg. 55-60	PPT
27	Construction Site Environment	2-Ch.3; Pg. 60-65	PPT

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Content beyond syllabus covered (if any): Case study: Detailed Project Report

* Session duration: 50 minutes



Sub. Code / Sub. Name: CE18701/ Principles of Construction Management

Unit: IV

Unit Syllabus: LABOUR, MATERIAL AND EQUIPMENT UTILIZATION 9

Historical Perspective - Labour Productivity - Factors Affecting Job-Site Productivity - Labour Relations in Construction - Problems in Collective Bargaining - Materials Management - Material Procurement and Delivery - Inventory Control - Tradeoffs of Costs in Materials Management. - Construction Equipment - Choice of Equipment and Standard Production Rates - Construction Processes Queues and Resource Bottlenecks.

Objective: Describe how to manage Labour, Material and Equipment effectively in construction projects

Session No *	Topics to be covered	Ref	Teaching Aids
28	Historical Perspective - Labour Productivity	2-Ch.4; Pg. 68-69 1-Ch.14; Pg. 589-595	PPT
29	Factors Affecting Job-Site Productivity	2-Ch.4; Pg. 69- 72	PPT
30	Labour Relations in Construction - Problems in Collective Bargaining	2-Ch.4; Pg. 72-74	PPT
31	Materials Management	2-Ch.4; Pg. 74-75 5-Ch.11; Pg. 429-433 4-Ch.19; Pg.269-273	PPT
32	Material Procurement and Delivery - Inventory Control	2-Ch.4; Pg. 75-77 5-Ch.11; Pg. 429-433 1-Ch.8; Pg. 353-355	PPT
33	Tradeoffs of Costs in Materials Management	2-Ch.4; Pg. 77-79 5-Ch.11; Pg. 429-447 1-Ch.8; Pg. 357-358	PPT
34	Construction Equipment	2-Ch.4 Pg. 79-82 5-Ch.9; Pg. 337-353 4-Ch.17; Pg.213-251	PPT
35	Choice of Equipment and Standard Production Rates	2-Ch.4; Pg. 83-86 5-Ch.9; Pg. 337-353 4-Ch.18; Pg.257-261	PPT
36	Construction Processes Queues and Resource Bottlenecks.	2-Ch.4; Pg. 87-94	PPT

Content beyond syllabus covered (if any):

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31	Materials Management	2-Ch.4; Pg. 74-75 5-Ch.11; Pg. 429-433 4-Ch.19; Pg.269-273	PPT
32	Material Procurement and Delivery - Inventory Control	2-Ch.4; Pg. 75-77 5-Ch.11; Pg. 429-433 1-Ch.8; Pg. 353-355	PPT
33	Tradeoffs of Costs in Materials Management	2-Ch.4; Pg. 77-79 5-Ch.11; Pg. 429-447 1-Ch.8; Pg. 357-358	PPT
34	Construction Equipment	2-Ch.4 Pg. 79-82 5-Ch.9; Pg. 337-353 4-Ch.17; Pg.213-251	PPT
35	Choice of Equipment and Standard Production Rates	2-Ch.4; Pg. 83-86 5-Ch.9; Pg. 337-353 4-Ch.18; Pg.257-261	PPT
36	Construction Processes Queues and Resource Bottlenecks.	2-Ch.4; Pg. 87-94	PPT

Content beyond syllabus covered (if any):

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Sub. Code / Sub. Name: CE18701/ Principles of Construction Management

Unit: V

Unit Syllabus: COST ESTIMATION

9

Costs Associated with Constructed Facilities - Approaches to Cost Estimation - Type of Construction Cost Estimates - Effects of Scale on Construction Cost - Unit Cost Method of Estimation - Methods for Allocation of Joint Costs - Historical Cost Data - Cost Indices - Applications of Cost Indices to Estimating - Estimate Based on Engineer's List of Quantities - Estimation of Operating Costs.

Objective: Illustrate the different types of construction cost estimates

Session No *	Topics to be covered	Ref	Teaching Aids
37	Costs Associated with Constructed Facilities	2-Ch.5; Pg.98-99 4-Ch.6; Pg.48-51	PPT
38	Approaches to Cost Estimation - Type of Construction Cost	2-Ch.5; Pg.100-105 3-Ch.5; Pg. 146 - 157	OPPT
39	Effects of Scale on Construction Cost	2-Ch.5; Pg.105-109 4-Ch.6; Pg.51	PPT
40	Unit Cost Method of Estimation	2-Ch.5; Pg.109-111	PPT
41	Methods for Allocation of Joint Costs	2-Ch.5; Pg. 111- 112	PPT
42	Historical Cost Data - Cost Indices	2-Ch.5; Pg.113-116	PPT
43	Applications of Cost Indices to Estimating	2-Ch.5; Pg.117-119	PPT
44	Estimate Based on Engineer's List of Quantities	2-Ch.5; Pg.119-120	PPT
45	Estimation of Operating Costs.	2-Ch.5; Pg.123-124	PPT

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Content beyond syllabus covered (if any):

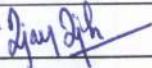
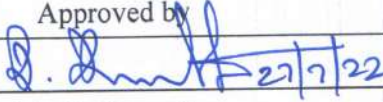
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REFERENCES:

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2. Chris Hendrickson and Tung Au, Project Management for Construction – Fundamental Concepts for Owners, Engineers, Architects and Builders, Prentice Hall, Pittsburgh, 2000.
3. George J.Ritz, Total Construction Project Management - McGraw-Hill Inc, 1994.
4. Dr.S.Seetharaman, "Construction Engineering and Management", Umesh Publication 2015.
5. Kumar Neeraj Jha, Construction Project Management Theory and Practice 2nd Edition, Pearson Pvt Ltd, New Delhi, 2015
6. Harold Kerzner Project Management: A Systems Approach to Planning, Scheduling, and Controlling, John Wiley & Sons, 8th Edition, 2003

	Prepared by	Approved by
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Date	27-07-2022	27-07-2022
Remarks *:		
Remarks *:		

* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD