



Department of Civil Engineering		
B.E/B.Tech/M.E/M.Tech : Civil Engineering	Regulation: 2018	LP: CE 18603
PG Specialisation : NA		Rev. No: 01
Sub. Code / Sub. Name : CE18603/ Construction Planning and Scheduling		Date:12/03/2022
Unit : I		

Unit Syllabus: CONSTRUCTION PLANNING 9

Basic Concepts in the Development of Construction Plans – Choice of Technology and Construction Method – Defining Work Tasks – Defining Precedence Relationships among Activities – Estimating Activity Durations – Estimating Resource Requirements for Work Activities – Coding Systems.

Objective: Plan the activities in construction considering the technology and duration

Session No *	Topics to be covered	Ref	Teaching Aids
1	Basic Concepts in the Development of Construction Plans	2-Ch.9; Pg. 195-196 1-Ch.2; Pg 63-74 4-Ch.3; Pg. 23 -27	PPT
2	Basic Concepts in the Development of Construction Plans	2-Ch.9; Pg. 195-196 1-Ch.2; Pg 63-74 4-Ch.3; Pg. 23 -27	PPT
3	Choice of Technology and Construction Method	2-Ch.9; Pg. 196	PPT
4	Defining Work Tasks	2-Ch.9; Pg. 196-198 1-Ch.3; Pg.113-125 5-Ch 11; Pg.396 - 402	PPT
5	Defining Precedence Relationships among Activities	2-Ch.9; Pg. 195-201 1-Ch.4.; Pg.159-170	PPT
6	Defining Precedence Relationships among Activities	2-Ch.9; Pg. 195-201 1-Ch4.; Pg.159-170	PPT
7	Estimating Activity Durations	2-Ch.9; Pg. 201-204 1-Ch.3; Pg.136-142	PPT
8	Estimating Resource Requirements for Work Activities	2-Ch.9; Pg. 204-205 1-Ch.3; Pg.142-14	PPT
9	Coding Systems	2-Ch.9; Pg. 205-207 1-Ch.18.; Pg.774-780	PPT

Content beyond syllabus covered (if any):

* Session duration: 50 minutes



Sub. Code / Sub. Name: CE18603/ Construction Planning and Scheduling

Unit: II

Unit Syllabus: SCHEDULING PROCEDURES AND TECHNIQUES

9

Construction Schedules – Critical Path Method – Scheduling Calculations – Float – Presenting Project Schedules – Scheduling for Activity-on-Node and with Leads, Lags, and Windows – Scheduling with Resource Constraints and Precedences – Use of Advanced Scheduling Techniques – Scheduling with Uncertain Durations – Calculations for Monte Carlo Schedule Simulation – Crashing and Time/Cost Tradeoffs – Improving the Scheduling Process.

Objective: Carry out the scheduling procedures using advanced scheduling techniques

Session No *	Topics to be covered	Ref	Teaching Aids
10	Construction Schedules – Critical Path Method	2-Ch.10; Pg.209-212 1-Ch.4.; Pg.159-200 5-Ch.12; Pg. 449-481 4-Ch.8; Pg. 79-84	BB
11	Scheduling Calculations – Float – Presenting Project Schedules	2-Ch.10; Pg.212-222 1-Ch.4.; Pg.159-200 5-Ch.12; Pg. 449-481 4-Ch.9; Pg. 129-140	BB
CAT – 1			
12	Scheduling for Activity-on-Node and with Leads, Lags, and Windows	2-Ch.10; Pg. 222-231 1-Ch.5.; Pg.212-222 5-Ch.12; Pg. 449-481 4-Ch.11; Pg. 161-167	BB
13	Scheduling for Activity-on-Node and with Leads, Lags, and Windows	2-Ch.10; Pg. 222-231 1-Ch.5.; Pg.212-222 5-Ch.12; Pg. 449-481 4-Ch.11; Pg. 161-167	BB
14	Scheduling with Resource Constraints and Precedences	2-Ch.10; Pg. 231-234 4-Ch.14; Pg. 193-196 3-Ch.11; Pg.229-236	BB



15	Use of Advanced Scheduling Techniques	2-Ch.11; Pg. 237	BB
16	Scheduling with Uncertain Durations	2-Ch.11; Pg. 237-24 1-Ch.16.; Pg.699-716	BB
17	Calculations for Monte Carlo Schedule Simulation	2-Ch.11; Pg. 241-245 1-Ch.16.; Pg.704-716	BB
18	Crashing and Time/Cost Tradeoffs – Improving the Scheduling Process	2-Ch.11; Pg. 245-251 1-Ch.4.; Pg.200-209 4-Ch.13; Pg.176-189 3-Ch.9; Pg.196-208	BB
Content beyond syllabus covered (if any):			

* Session duration: 50 mins



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Unit: III

Unit Syllabus: COST CONTROL, MONITORING AND ACCOUNTING 9

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 - introduction to computer tool for scheduling

Objective: Predict the problems related to cost control and accounting.

Session No *	Topics to be covered	Ref	Teaching Aids
19	The Cost Control Problem	2-Ch.12; Pg.254 1-Ch.15.; Pg.629-635 5-Ch.15; Pg. 565-571 4-Ch.34; Pg. 416-419	PPT
20	The Project Budget	2-Ch.12; Pg.255-258 1-Ch.12.; Pg.521-523	PPT
21	Forecasting for Activity Cost Control	2-Ch.12; Pg.258-263 1-Ch.15.; Pg.649-662	PPT
22	Financial Accounting Systems and Cost Accounts	2-Ch.12; Pg.263-267	PPT
23	Control of Project Cash Flows	2-Ch.12; Pg. 267-269 1-Ch.12.; Pg.513-521	PPT
24	Schedule Control	2-Ch.12; Pg. 269-271 1-Ch.15.; Pg.649-662 5-Ch.15; Pg. 580-590 6-Ch. 8; Pg. 278 - 284	PPT
25	Schedule and Budget Updates	2-Ch.12; Pg. 271-273 1-Ch.12.; Pg.504-513 5-Ch.15; Pg. 580-590	PPT
26	Relating Cost and Schedule Information	2-Ch.12; Pg. 273-275	PPT
27	Introduction to computer tool for scheduling	1-Ch.6.; Pg.296-307	PPT

CAT - 2

Content beyond syllabus covered (if any):

* Session duration: 50 mins



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Unit: IV

Unit Syllabus: QUALITY CONTROL AND SAFETY DURING CONSTRUCTION 9

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 with Sampling by Variables – Safety

Objective: Summarize the quality and safety concerns in construction

Session No *	Topics to be covered	Ref	Teaching Aids
28	Quality and Safety Concerns in Construction	2-Ch.13; Pg.280-281 4-Ch.20; Pg. 276-286	PPT
29	Organizing for Quality and Safety	2-Ch.13; Pg.280-282 4-Ch.21; Pg. 288-301	PPT
30	Work and Material Specifications - Total Quality Control	2-Ch.13; Pg.282-285	PPT
31	Quality Control by Statistical Methods	2-Ch.13; Pg.285-286	BB
32	Statistical Quality Control with Sampling by Attributes	2-Ch.13; Pg.286-291 4-Ch.21; Pg. 288-301	BB
33	Statistical Quality Control with Sampling by Attributes	2-Ch.13; Pg.286-291 4-Ch.21; Pg. 288-301	BB
34	Statistical Quality Control with Sampling by Variables	2-Ch.13; Pg.291-295 4-Ch.21; Pg. 288-301	BB
35	Statistical Quality Control with Sampling by Variables	2-Ch.13; Pg.291-295 4-Ch.21; Pg. 288-301	BB
36	Safety	2-Ch.13; Pg. 296-298 4-Ch.20; Pg. 276-286	PPT

Content beyond syllabus covered (if any): Risk Identification Process

* Session duration: 50 mins



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Unit: V

Unit Syllabus: ORGANIZATION AND USE OF PROJECT INFORMATION 9

Types of Project Information – Accuracy and Use of Information – Computerized Organization and Use of Information – Organizing Information in Databases – Relational Model of Databases – Other Conceptual Models of Databases – Centralized Database Management Systems – Databases and Applications Programs
– Information Transfer and Flow.

Objective: Reflect the different types of database management system to organize and use project information

Session No *	Topics to be covered	Ref	Teaching Aids
37	Types of Project Information	2-Ch.14; Pg.302 4-Ch.26; Pg. 357-363	PPT
38	Accuracy and Use of Information	2-Ch.14; Pg.302-303 4-Ch.26; Pg. 357-363	PPT
39	Computerized Organization and Use of Information	2-Ch.14; Pg.303-304 4-Ch.26; Pg. 357-363	PPT
40	Organizing Information in Databases	2-Ch.14; Pg.304-305 4-Ch.26; Pg. 357-363	PPT
41	Relational Model of Databases	2-Ch.14; Pg.306-307	PPT
42	Other Conceptual Models of Databases	2-Ch.14; Pg.308-310	PPT
43	Centralized Database Management Systems	2-Ch.14; Pg.310 4-Ch.26; Pg. 357-363	PPT
44	Databases and Applications Programs	2-Ch.14; Pg.311-312	PPT
45	Information Transfer and Flow	2-Ch.14; Pg.312-313	PPT
CAT - 3			
Content beyond syllabus covered (if any):			

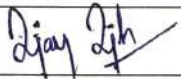
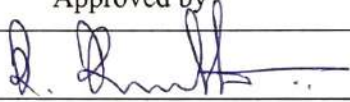
* Session duration: 50 mins



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REFERENCES:

1. Chitkara, K.K. Construction Project Management: Planning, Scheduling and Control, McGraw-Hill Publishing Company, New Delhi, 1998.
2. Chris Hendrickson and Tung Au, Project Management for Construction – Fundamental Concepts for Owners, Engineers, Architects and Builders, Prentice-Hall, Pittsburgh, 2000.
3. B.C. Punmia, "Project Planning and Control with PERT and CPM", Laxmi Publications, New Delhi, 2006.
4. Dr. S. Seetharaman, "Construction Engineering and Management", Umesh Publication 2015.
5. Harold Kerzner, "Project Management", John Wiley & Sons 2003.
6. George J. Ritz, "Total Construction Project Management", McGraw-Hill, New York, 1990.

	Prepared by	Approved by
Signature		
Name	Mr. A. Vijay Vignesh	Dr. R. Kumutha
Designation	Assistant Professor	Professor & Head of the Department
Date	28.02.2022	28.02.2022
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