



SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Department of Chemical Engineering	LP: CH18702 Rev. No: 00 Date: 5.07.24
B.E/B.Tech/M.E/M.Tech : Chemical Engineering Regulation : 2018A	
PG Specialisation : NA	
Sub. Code / Sub. Name : CH18702 / Process Economics for Chemical Engineers	
Unit : I	

Unit Syllabus: PRINCIPLES OF MANAGEMENT AND ORGANISATION

Organizations, Forms and Types of organizations, Corporate Frame work; Management, Functions & Principles of Management: Planning, organization, staffing, coordination, directing, controlling, communicating, Method study; work measurement techniques; basic procedure; motion study; motion economy; principles of time study; elements of production control; forecasting; planning; routing; scheduling; dispatching; costs and costs control, inventory and inventory control.

Objective: To familiarize the students to the basic principles and functions of management.

Session No *	Topics to be covered	Ref	Teachin g Aids
1	Introduction to Organization, Forms and types of organization	R4:35-41	BB/PPT
2	Corporate frame work	R4:35-41	BB/PPT
3	Introduction to Principles and Functions of Management	R4:35-41	BB/PPT
4	Role of Planning in Management and Organization. Purposes or missions, Objectives, Strategies, Policies, Procedures, Rules, Programs, Budgets,	R4:35-41	BB/PPT
5	Role of Staffing in Management and importance of Coordination. Systems approach to staffing, Significance of staffing-Internal Coordination & External Coordination	R4:36-38	BB/PPT
6	Significance of Staffing-Internal Coordination & External Coordination	R4 : 36-38	BB/PPT
7	Directing, Controlling, communicating	R4 : 41-45	BB/PPT
8	Work measurement techniques	R4:737-741	BB/PPT
9	Method study, Motion study and Motion Economy	R4:742-757	BB/PPT
10	Principles of Time study, Elements of production control	R4:761-780	BB/PPT
11	Recording time for activities, Rating, Standard time constituents	R4:761-780	BB/PPT
12	Forecasting, Planning, Routing	R4: 702-718	BB/PPT
13	Scheduling and Dispatching	R4: 702-718	BB/PPT
14	Costs and Cost control. Classification of costs, Controlling costs	R4: 1049-1059	BB/PPT
15	Inventory and Inventory control	R4: 582-594	BB/PPT

Content beyond syllabus covered (if any):

Case studies wherever applicable

* Session duration: 50 minutes



Sub. Code / Sub. Name: CH18702 / Process Economics for Chemical Engineers

Unit : II

Unit Syllabus: INVESTMENT COSTS AND COST ESTIMATION

Time Value of money; capital costs and depreciation, amortization, estimation of capital cost, manufacturing costs and working capital, capital budgeting and project feasibility.

Objective: To make the students understand the concept of various techniques used in production and quality control.

Session No *	Topics to be covered	Ref	Teaching Aids
16	Time value of Money ,Timelines and notation, valuation concept	T2 : 153-167	BB/PPT
17	Capital costs & Depreciation Capital costs	T1 : 186-187	BB/PPT
18	Manufacturing costs,	T1: 195-196	BB/PPT
19	Working capital	T1: 157-158	BB/PPT
20	Invested capital	T1:315-329	BB/PPT
21	Depreciation Methods	T1 : 278-290	BB/PPT
22	Problem solving on depreciation method	R2 : 46 -70	BB/PPT
23	Estimation of capital cost	R3 : 2.1-2.22	BB/PPT
24	Estimation of manufacturing costs	R3 : 2.1-2.22	BB/PPT
25	Estimation of working capital, invested capital and project feasibility	T2 :265-290	BB/PPT

Content beyond syllabus covered (if any):

Methods involved for the estimation of the capital investment

* Session duration: 50 mins



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Unit : III

Unit Syllabus : PROFITABILITY, INVESTMENT ALTERNATIVE AND REPLACEMENT

Estimation of project profitability, sensitivity analysis; investment alternatives; replacement policy; forecasting sales; inflation and its impact.

Objective: To appraise the students of the concepts of money, interest and various cost estimation techniques.

Session No *	Topics to be covered	Ref	Teaching Aids
26	Estimation of profitability	T1 :295-315	BB/PPT
27	Estimation of profitability contd.	T1 :295-315	BB/PPT
28	Sensitivity analysis	T2: 245-261	BB/PPT
29	Problems in profitability and sensitivity analysis	T1 :295-315 T2: 245-261	BB/PPT
30	Problems in profitability and sensitivity analysis	T1 :295-315 T2: 245-261	BB/PPT
31	Investment alternatives	T1: 315-329	BB/PPT
32	Replacement policy	T1:329-336	BB/PPT
33	Forecasting sales	R2 : 461	BB/PPT
34	Inflation and its impact	R2: 123-130	BB/PPT
35	Problems on Inflation and its impact	R2: 123-130	BB/PPT

Content beyond syllabus covered (if any): -

* Session duration: 50 min



Sub. Code / Sub. Name: CH18702 / Process Economics for Chemical Engineers

Unit : IV

Unit Syllabus: ECONOMIC BALANCE

Economic decisions in Chemical Plant - Economics of size - Essentials of economic balance – Economic balance approach, economic balance for insulation, evaporation, heat transfer. Elements of quality control, role of control charts in production and quality control.

Objective: To expose the students to the essentials of economic balance for process industries especially for insulation , evaporation and heat transfer.

Session No *	Topics to be covered	Ref	Teaching Aids
36	Introduction to Economic decision in chemical Plant	T2 :329 -339	BB/PPT
37	Economic balance — introduction ,	T2 :329 -339	BB/PPT
38	Essentials of economic balance	T2 :329 -339	BB/PPT
39	Overview of economic balance of different unit operations	T2 :329 -339	BB/PPT
40	Overview of economic balance of different unit operations	T2 :329 -339	BB/PPT
41	Significance and application of economic balance	T2 :329 -339	BB/PPT
42	Economic balance for insulation	T1 :341	BB/PPT
43	Economic balance for heat transfer operations	T1 :579-645	BB/PPT
44	Economic balance with special reference to evaporators	T1 : 579 - 645	BB/PPT
45	Quality Control	T1 : 579 - 645	BB/PPT
46	Elements of Quality control	T1 : 579 - 645	BB/PPT
47	Role of control charts in production	T1 : 579 - 645	BB/PPT
48	Role of control charts in quality control	T1 : 579 - 645	BB/PPT
49	Problems solved on economic balance	T1 :341,579 -645	BB/PPT
50	Summary of all the topics	-	BB/PPT

Content beyond syllabus covered (if any): Process design and development factors to be considered for economic design of equipment

* Session duration: 50 min



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Unit : V

Unit Syllabus: ANNUAL REPORTS AND ANALYSIS OF PERFORMANCE

Principles of accounting; Cash flow diagrams, balance sheet; income statement; financial ratios; analysis of performance and growth.

Objective: To appraise the students of accounting principles and to generate financial statements.

Session No *	Topics to be covered	Ref	Teaching Aids
51	Principles of accounting	T1: 137 -140	BB/PPT
52	Introduction to the accounting equation	T1: 137 -140	BB/PPT
53	Balance sheet, Classifications Of Liabilities On The Balance Sheet	T1: 140-142	BB/PPT
54	Income statement, Types of Income Statement Formats	T1: 142-148	BB/PPT
55	Financial Ratios : Liquidity Ratios, Activity Ratios, Debt Ratios, Profitability Ratios	T2: 42-47	BB/PPT
56	Analysis of performance and growth	T1: 196	BB/PPT
57	Tools to Evaluate Financial Information in Annual Reports	T1:198	BB/PPT
58	SWOT Analysis	T3:264-268	BB/PPT
59	Enterprise Resource Planning (ERP)	T4:462-465	BB/PPT
60	Supply Chain Management (SCM)	T4:470-473	BB/PPT

Content beyond syllabus covered (if any): Fund flow and Cash Flow Analysis

* Session duration: 50 min



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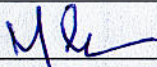
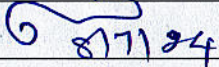
COURSE DELIVERY PLAN - THEORY

REFERENCES:**TEXTBOOKS:**

1. Peters, M. S. and Timmerhaus, C. D. RE West, "Plant Design and Economics for Chemical Engineers", Fourth Edition, McGraw Hill, 2008.
2. Herald Knottz and Heinz Wehrich, "Essentials of Management", Tata McGraw Hill Education Pvt. Ltd., 2010.
3. Holand, F.A., Watson, F.A. and Wilkinson, J.K., "Introduction to Process Economics", Second Edition, John Wiley, 1983.

REFERENCES:

1. James R. Couper, "Process Engineering Economics", CRC Press Book, 2003.
2. B.M.Suryavanshi, S.P.Singh and M.R.Joshi, "Process Economics and Project Engineering", NiraliPrakashan, First Edition, 2002.
3. V. Sivasubramanian, "Process Economics and Industrial Management", Galgotia Publications Pvt Ltd, 2008.
4. Ties, AF, Stoner and R.Edward Freeman, "Management" Prentice Hall of India Pvt. Ltd. New Delhi 110 011, 1992

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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