



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
(Autonomous Institution, Affiliated to Anna University, Chennai)
Elayampalayam, Tiruchengode – 637 205



DEPARTMENT OF BIOTECHNOLOGY

Course Code / Name : U13BT741 & BIOPROCESS ECONOMICS AND PROJECT ENGINEERING

Class (Year / Programme / Department / Section): IV/ B.TECH/ BT

UNIT-1 PROCESS PLANTS

S.No	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
1.	Continous and batch plants	45	BB	T1
2.	Procedure for systematic study of plants	45	BB	R1
3.	Plant and equipment start up and shunt downs, operations at steady state.	45	BB	T1
4.	Emergency response strategy for plants and equipment	45	BB	T1
5.	Plant test runs and rating calculations for various equipment	45	PPT	T1,R1
6.	Plant systems for utilities and auxiliary services	45	BB	R1
7.	Handling of plant effluent	45	PPT	T1,R1
8.	Safe commissioning of plants	45	BB	T1
9.	A Case study about process plants	45	PPT	T1

UNIT-II PROCESS ECONOMICS

	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
10.	General fermentation process economics,	45	BB	T1
11.	Materials usage and cost	45	PPT	T1, R1
12.	Capital investment estimate	45	BB	T1
13.	Production cost estimate	45	PPT	T1

14.	Two case studies	45	BB	T1, R1
15.	One traditional product	45	PPT	R1
16.	Recombinant product.	45	BB	T1
17.	Current strategies	45	BB	T1,R1
UNIT-III ESTIMATION OF TOTAL PRODUCT COST				
	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
18.	Manufacturing cost general expenses	45	PPT	T1
19.	Direct production cost	45	BB	R1
20.	Fixed cost	45	PPT	T1
21.	Plant over head cost	45	BB	T1
22.	Administration expenses	45	PPT	T1,R1
23.	Distribution expenses	45	BB	R1
24.	Marketing expenses	45	BB	R1
25.	Problems	45	BB	T1,R1
26.	Total product cost –A Review	45	BB	T1
UNIT-IV DEPRECIATION				
	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
27.	Introduction	45	BB	T1
28.	Definition of depreciation	45	BB	T1
29.	Importance & significance of depreciation	45	PPT	R1
30.	Meaning of value	45	BB	T1,R1
31.	Types of depreciation	45	PPT	T1
32.	Service life	45	BB	T1
33.	Salvage value	45	BB	T1,R1
34.	Present value	45	PPT	R1
35.	Methods for determining depreciation	45	BB	T1,R1

UNIT-V PROFITABILITY ANALYSIS

	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
36.	Profitability standards cost of capital	45	BB	T1
37.	Mathematical methods calculating profitability	45	BB	T1,R1
38.	Rate of return on investment	45	BB	T1
39.	Discounted cash flow based on full life performance	45	BB	T1
40.	Net present worth	45	PPT	T1,R1
41.	Capitalized cost	45	BB	R1
42.	Payout period	45	PPT	T1,R1
43.	Relationships for continuous cash flow and continuous interest of importance for profitability analysis	45	BB	T1
44.	Profitability standards cost of capital	45	PPT	T1
45.	problems	45	BB	T1

TEXT BOOK:

1) Peter, Max S. And Timmerhaus, Klaus D. Plant Design and Economics for chemical Engineers 5th ed., McGraw Hill, 2001

REFERENCES:

1) G.S. Davuesm "Process Engineering Economics" CEED III Madras, 2006.