SRM UNIVESITY
FACULTY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF CHEMICAL ENGINEERING

COURSE PLAN

Course Code : CH0401
Course Title : Process Engineering Economics
Semester/ Section : 7th / B - Section
Branch/ Year : B. Tech – Chemical Engineering
Course Time : July 2014 – October 2014

Day order	Hour	Timing
IV	5th & 6th	(1:30 p.m. - 2:20 p.m.) & (2:20 p.m. - 3:10 p.m.)
V	1st & 2nd	(8:45 a.m. - 9:35 a.m.) & (09:35 a.m. - 10:25 a.m.)

Location: Architecture Annexure Block, First floor, Room. No. AA103.

Faculty Details

Section	Name	Office	Office hours	Mail Id.
Chemical Engineering 4th Year	Balasubramanian. S	2nd Floor, Dept. of Chemical Engineering	08:30 am to 04:00 pm	balasubramanian.s@ktr.srmuniv.ac.in

Text Books

1. Schweyer H. E., *Process Engineering Economics*, Mc Graw hill, 1969.

2. Max. S. Peters And Klaus D. Timmerhaus, *Plant Design and Economics for Chemical Engineers*, 4th Edn., Mc Graw Hill International editions, New York, 1991.

Prerequisite

Basic economics – equalities and basics of engineering mathematics.

Objectives

To familiarize

- The concept of equivalence, amortization, depreciation, depletion
- Balance sheet charts & Break even analysis charts
- Economics of selecting alternatives
- Economic balance
- Economic analysis

Assessment details

Cycle Test – I : 10 Marks
Cycle Test – II : 10 Marks
Surprise Test : 05 Marks
Model Exam : 20 Marks
Attendance : 05Marks

Test Schedule

S. No.	Date*	Test	Topics	Duration
1	30/07/2014	Cycle Test – I	20%	2 Periods
2	25/08/2014	Cycle Test – II	40%	2 Periods
3	$	Surprise Test	60%	1 Periods
4	20/10/2014	Model Exam	100%	3 Periods

(*Refer academic calendar, $ conducted in surprise)

Surprise Tests

There will be one surprise test throughout the course. The surprise test will not be announced before and it will cover the materials until the previous day.

Home Assignments

There will be home assignments in this course. All the assignments will be announced during the lecture hours. The assignments have to be turned on or before the due date; no late submissions will be entertained. Students can work in groups of two for home assignments. In such a case, single assignment submission will be required.

Final internal marks will be a weighed average of cycle test – I, cycle test – II, surprise test, attendance and a model Exam.

Outcomes

Students who have successfully completed this course will have the understanding of following concepts

Course Outcome	Program outcome
Can be able to apply the concepts of: 1. Amortization – Depreciation and Depletion. 2. Balance sheet and Break-even analysis. 3. Selection of alternatives. 4. Economic balance and analysis for complete chemical process plant.	Can be able to solve the problems on the following: 1. Depreciation problems. 2. Preparation of balance sheet for process plants. 3. Alternative resource planning. 4. Economic analysis of entire chemical process plant.

Teaching Methodology

- Chalk and talk for the entire course

Tentative lesson plan

Lectures	Lecture title	Contents	Schedule
Lecture 1	Introduction	An overview of topics covered in this course – in brief	Day 1
Lecture 2	Introduction on Time value of money and Amortization	Equivalence. Equations used in economic studies. Depreciation and depletion.	Weeks 1-2
Lecture 3	Balance sheet and cost accounting- An overview	Capital requirements for process plants. Balance sheet charts - earnings, process and returns.	Weeks 3-4
Lecture 4	Cost accounting	Economic production, break-even analysis charts, pre construction cost estimation - allocation of cost.	Weeks 5-6
Lecture 5	Economic selection of alternatives	Annual cost method, present worth method. Replacement: Rate of return method and pay out time method.	Weeks 7-8
Lecture 6	Economic balance	Economic balance in batch operations, cycle operations and multiple equipment units.	Weeks 9-10
Lecture 7	Economic analysis	Economic analysis of a complete process.	Weeks 11-12