Faculty of Engineering & Technology, SRM University, Kattankulathur – 603203
School of Mechanical Engineering

Department of Mechanical Engineering

Course plan

Course code : ME0025B Date: 01 February 2016

Course title : Process Planning & Cost Estimation

Semester : VIII

Academic Year : 2016-17

Details of Faculty member				
Name	**Room No.**	**Intercom No.**	**e-mail ID**	**Student contact time**
Prof,K.SHANMUGAM	MEB406	1808	Shanmugam.k@ktr.srmuniv.ac.in	12.45pm – 1.15pm

Direct assessment details:

Name of assessment	Marks	Topics	Tentative date	Duration
Cycle Test-1	10	Process planning, Costing	1st week of March	100 minutes
Surprise Test	05	Process planning, Expenses, Depreciation	3rd week of March	15 -20min
Cycle Test -2	10	Expenses, Depreciation, Estimation in Foundry shop, Forging shop, Welding shop	1st week of April	100 minutes
Model Examination	20	Process planning, Costing and Estimation, Estimation in Foundry shop, Forging shop, Welding shop, Sheet metal shop, Estimation of Machining time in Lathe operations, drilling, boring, shaping, planning , milling and grinding operations.	2nd week of May	3 Hrs
Attendance	05			
End Semester Examination	50	Process planning, Costing and Estimation, Estimation in Foundry shop, Forging shop, Welding shop, Sheet metal shop, Estimation of Machining time in Lathe operations, drilling, boring, shaping, planning , milling and grinding operations.	June 2016	3 Hrs

Syllabus

ME0025B – PROCESS PLANNING AND COST ESTIMATION

PURPOSE:
To impart clear knowledge about process planning, costing and estimation of machining time.

INSTRUCTIONAL OBJECTIVES:
To understand the basic concepts of

1. Process planning
2. Different methods of cost estimation in different manufacturing shops.

UNIT I - PROCESS PLANNING **(7 hours)**
Process planning: - Selection and analysis – Manual, Experience based planning – CAPP – Variant - Generative - Processes analysis – Types of Production.

UNIT II COSTING, ESTIMATION, COSTS AND EXPENSES **(10hours)**
Aims of costing and estimation – Functions and procedure – Introduction to costs, Computing material cost, Direct labor cost, Analysis of overhead costs - Factory expenses, Administrative expenses, Selling and distributing expenses – Cost ladder - Cost of product - Depreciation – Analysis of depreciation.

UNIT III ESITMATION OF COSTS IN DIFFERENT SHOPS **(8hours)**
Estimation in foundry shop – Pattern cost - Casting cost - Illustrative examples. Estimation in Forging shop – Losses in forging – Forging cost - Illustrative examples.

UNIT IV ESTIMATION OF COSTS IN FABRICATION SHOPS **(8hours)**
Estimation in welding shop – Gas cutting – Electric welding - Illustrative examples. Estimation in sheet metal shop – Shearing and forming - Illustrative examples.

UNIT V ESITMATION OF MACHINING TIMES AND COSTS **(12hours)**
Estimation of machining time for lathe operations - Estimation of machining time for drilling, boring, shaping, planning, milling and grinding operations - Illustrative examples.

TOTAL: 45

TEXT BOOKS
1.Adithan, M. S., and Pabla,Estimating and Costing, Konark Publishers Pvt., Ltd, 1989.
2.Chitale, A. K., and Gupta, R. C.,Product Design and manufacturing, Prentice Hall of India, NewDelhi, 1997.

REFERENCE BOOKS
1.Nanua Singh,System Approach to Computer Integrated Design and Manufacturing, John Wiley & Sons, New York, 1996.
2.Joseph G. Monks, Operations Management, Theory and Problems, McGraw Hill Book Company, New Delhi, 1982.
3.Narang, G. B. S. and Kumar, V., Production and Planning, Khanna Publishers, New Delhi, 1995.
4.Banga, T. R. and Sharma, S. C., Estimating and Costing, Khanna publishers, New Delhi, 1986.

1. Expected learning outcome of the course

		L	T	P	C
ME0025B	PROCESS PLANNING AND COST ESTIMATION	3	0	0	3
	Prerequisite				
	Nil				

Student outcomes	Program Educational Objectives			
	1. Practice mechanical engineering indifferent disciplines towards system design, realization and manufacturing.	2. Enhance professional practice to meet the global standards with ethical and social responsibility.	3. Solve industrial, social, and environmental problems with modern engineering tools.	4. Work in large cross–functional teams and pursuelife–long learning
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability	X	X	X	
(e) an ability to identify, formulate and solve engineering problems	X		X	
(j) a knowledge of contemporary issues		X	X	X
(k) an ability to use the techniques, skills and modern engineering tools necessary for engineering practice	X	X	X	

Course designed by	Department of Mechanical Engineering

1	Student outcome	A	b	c	d	e	f	G	h	i	j	K
				X		X					X	X

2	Category	GENERAL (G)	BASIC SCIENCES (B)	ENGINEERING SCIENCES AND TECHNICAL ART (E)	PROFESSIONAL SUBJECTS (P)
					X

3	Broad area (for professional courses only, i.e 'under P' category)	Manufacturing	Design	Thermal	General
		X			

4	Course Coordinator	Prof. K.SHANMUGAM

SRM UNIVERSITY
SCHOOL MECHANICAL ENGINEERING
LESSON PLAN

COURSE CODE : ME0025B
COURSE TITLE : PROCESS PLANNING & COST ESTIMATION
YEAR/SEMESTER : IV / VIII

S.NO.	NO. OF HOURS	TITLE/DETAILS OFTHE CHAPTER	REFERENCES
UNIT-1 PROCESS PLANNING			**(7 Hours)**
1.	1	Introduction to process planning, basic concepts	R4, chapter 27
2.	1	Selection and analysis	R4, chapter 27
3.	1	Manual/Experience based planning	T1, chapter 2
4.	2	CAPP - Variant - Generative	T1, chapter 2
5.	2	Process analysis, Types of production	T1, chapter 2
UNIT -2 COSTING, ESTIMATION,COSTS AND EXPENSES			**(10 Hours)**
6.	2	Aims of costing and estimation - Functions and procedure	R4, chapter 2
7.	1	Introduction to costs, Computing material cost	R4, chapter 4
8.	1	Direct labor cost, Analysis of overhead costs	R4, chapter 3
9.	2	Factory expenses, Administrative expenses, Selling and distributing expenses	R4, chapter 8
10.	1	Cost ladder - Cost of product	T1, chapter 3
11.	3	Depreciation - Analysis of depreciation	R4, chapter 8
UNIT – 3 ESTIMATION OF COSTS IN DIFFERENT SHOPS (8 Hours)			
12.	1	Estimation in foundry shop – Pattern cost - Casting cost	R4, chapter 15
13.	2	Foundry shop - Illustrative examples	R4, chapter 15
14.	2	Estimation in Forging shop – Losses in forging – Forging cost	R4, chapter 13
15.	3	Forging shop - Illustrative examples	R4, chapter 13
UNIT – 4 ESTIMATION OF COSTS IN FABRICATION SHOPS (8 Hours)			
16.	2	Estimation in welding shop – Gas cutting – Electric welding	R4, chapter 14
17.	3	Welding shop - Illustrative examples	R4, chapter 14
18.	1	Estimation in sheet metal shop – Shearing and forming	R4, chapter 12
19.	2	Sheet metal shop - Illustrative examples	R4, chapter 12
UNIT – 5 ESTIMATION OF MACHINING TIMES AND COSTS (12 Hours)			
20.	4	Estimation of machining time for lathe operations - turning, knurling, facing, reaming, threading, tapping - Illustrative examples	R4, chapter 11
21.	2	Estimation of machining time for drilling, boring - Illustrative examples	R4, chapter 11
22.	3	Estimation of machining time for shaping, planning - Illustrative examples	R4, chapter 11
23.	3	Estimation of machining time for milling and grinding operations - Illustrative examples	R4, chapter 11

TEXT BOOKS

1.Adithan, M. S., and Pabla,Estimating and Costing, Konark Publishers Pvt., Ltd, 1989.
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04/02/2016

Course Coordinator
(Prof. K.SHANMUGAM)

Head of the Department
(Dr. S. Prabhu)

Ref. NO: DME/038

DEPT. OF MECHANICAL ENGINEERING * SRM UNIVERSITY * KATTANKULATHUR-603203.
05 FEB 2016