

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

Department of Mechanical Engineering

Course plan

Course code : ME0025

Date : 4 Jan 2013

Course title : Process Planning & Cost Estimation

Semester : VIII

Academic year / semester : 2012-'13 / Even
(Jan 2013 – May 2013)

Section Details :

Section	Class Room No	Name	Room No.	Intercom No.	Details of Faculty member	
					e-mail id	Student contact time
MECH – A & B	MEA 401	V P HARIDASAN	MEC 104	1821	haridasan.vp@ktr.srmuniv.ac.in	Thur 1 to 1.30 pm
MECH-C	H 513	V BABU RAO	MEA 202	-	babu.v@ktr.srmuniv.ac.in	
MECH-D	H 213	S P SUNDER SINGH SIVAM	H 502	-	sunder.sp@ktr.srmuniv.ac.in	

Direct assessment details:

Name of assessment	Marks	Topics	Tentative date	Duration
Cycle test - I	15	Process planning; Costing, estimation, costs & expenses	07-02-2013	100 Minutes
Surprise test	05	Estimation of costs in different shops	Third week of February	30 – 45 Minutes
Cycle test – II	10	Estimation of costs in fabrication shops; Estimation of Machining time and costs	07-03-2013	100 Minutes

Model Examination	20	Entire Syllabus	20-04-2013	3 hours
Attendance	05			
End Semester Examination	50	Entire Syllabus	23-05-2013	3 hours

Syllabus of the course

ME0025 - 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.

PROCESS PLANNING

7

Process planning: - Selection and analysis – Manual, Experience based planning – CAPP – Variant - Generative - Processes analysis – Types of Production.

COSTING, ESTIMATION, COSTS AND EXPENSES

10

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.

ESTIMATION OF COSTS IN DIFFERENT SHOPS

8

Estimation in foundry shop – Pattern cost - Casting cost - Illustrative examples. Estimation in Forging shop – Losses in forging – Forging cost - Illustrative examples.

ESTIMATION OF COSTS IN FABRICATION SHOPS

8

Estimation in welding shop – Gas cutting – Electric welding - Illustrative examples. Estimation in sheet metal shop – Shearing and forming - Illustrative examples.

ESTIMATION OF MACHINING TIMES AND COSTS

12

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, New Delhi, 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.

Expected learning outcome of the course

		L	T	P	C
ME0025	PROCESS PLANNING AND COST ESTIMATION	3	0	0	3
	Prerequisite				
	Nil				

Student outcomes	Program Educational Objectives				
	The main objective of the B.Tech in Mechanical Engineering Program is to provide a periodically-updated curriculum so that, following the completion of the program and with a few years of experience, our alumni will have the expertise to:				
	1. Practice mechanical engineering in different 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 appropriate techniques and tools.	4. Work in large cross-functional teams and pursue life-long learning.	
an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political,	X	X	X		

ethical, health and safety, manufacturability, and sustainability												
(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	V P HARIDASAN										

SRM UNIVERSITY

SCHOOL OF MECHANICAL ENGINEERING

LESSON PLAN

COURSE CODE : ME0025

COURSE TITLE : Process Planning and Cost Estimation

YEAR / SEMESTER : IV / VIII

COURSE TIME - SEMESTER: EVEN

YEAR: 2012-2013

S.No	No. of Hours	Title / Details of the chapter	References (code of the Text / Reference books)
1	2	Introduction to Process planning, basic concepts, selection and analysis. Details of process plan, Route sheets.	R1 , chapter 27
2	2	Approaches to Process planning – Manual and CAPP – Retrieval system, Generative system	R1 , chapter 27 T2 , chapter 13
3	2	Process and Equipment selection, Process Analysis –Objectives , Steps Involved, Process charts	R1 , chapter 27 T2 , chapter 13
4	2	Production systems - Types - Job shop production, Batch production, Mass production, Process Production, comparison between types of production	R1 , chapter 27
5	2	Cost Estimating – Concept, Importance, Aim, Functions , Types of Estimates , components of cost estimates Estimating procedure,	R1 , chapter 2
6	2	Estimate forms , Constituents, Costing –Definition & Concept, , aims of costing, Importance, Methods, Difference between Estimating and Costing.	R1 , chapter 2
7	2	Elements of cost, material cost, determination of material cost, Densities of materials, Problems on material cost, Labour cost , types, Direct and Indirect cost -Problems , Cost ladder – Cost of product - Problem using cost ladder	R1 , chapter 2 R1 , chapter 4 R1 , chapter 8
8	2	Expenses , Direct & overhead expenses –Factory expenses , selling & distribution expenses &	R1 , chapter 5

		administrative expenses	
9	2	Depreciation - causes & methods – straight line, Diminishing, sinking fund, Annuity ,Insurance policy ,Machine hour methods problems	R1, chapter8
10	1	Foundry – Pattern – Allowances – Types- Estimation of Pattern Cost-problems, Estimation of Foundry Cost – Problems, Forging – types of forging , Processes, Operations	R1, chapter15 R1, chapter13
11	2	- Estimation of material losses in forging, Estimation of forging cost - Problems	R1, chapter15 R1, chapter13
12	2	Welding – types of welding , types of welding joints , Estimation of Arc welding cost, Problems in Arc welding, Gas welding – Technique - Estimation of Oxy-Acetylene welding	R1, chapter14
13	2	Gas Cutting , Estimation of Gas Cutting cost - Problems , Estimation in Sheet metal shop – Shearing & Forming - problems	R1, chapter14
14	2	Study of Machining Time , terms associated with machining time, External Relief Turning	R1, chapter11
15	2	Turning operation – RPM , Feed Calculation Problems solving in turning, Chamfering , Knurling, Facing, Drilling, Boring, Reaming, Tapping , Calculation of machining time , Problems	R1, chapter11
16	2	Milling, Shaping, Planning , Grinding Calculation of machining time , Problems	R1, chapter11
17		Model Examination	

Text books:

1. "Estimating and costing", Adithan M and Pabla B.S., Konark Publishers Pvt. Ltd., 1989.
2. "Product design and manufacturing", Chitale A.K. and Gupta R.C., Prentice Hall Pvt. Ltd., 1997.

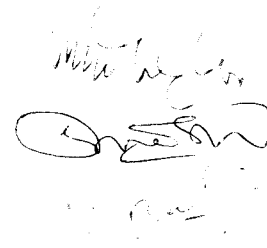
Reference Books:

1. "Estimating and costing", Banga T.R. and Sharma S.C., Khanna Publishers, 1986.
2. "Production and Costing", Narang G.B.S. and Kumar V., Khanna Publishers, 1995.

Details of of the Faculty handling the subject

Signature

1. V P HARIDASAN
2. S P SUNDAR SINGH SIVAM
3. V BABU RAO



D. K. J. / 23/11/2013
Dean / Mechanical