GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3172016
Semester – VII
Subject Name: Process Planning and Cost Estimation

Type of course: Engineering Science (Open Elective)

Prerequisite: Zeal to learn the subject

Rationale: This course aims to introduce the process planning concepts to make cost estimation for various products after process planning.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	0	3	70	30	0	0	100

Content:

Sr. No.	Content	Total Hrs
1	**INTRODUCTION TO PROCESS PLANNING:** Introduction- methods of process planning-Drawing interpretation-Material evaluation – steps in process selection-.Production equipment and tooling selection	08
2	**PROCESS PLANNING ACTIVITIES:** Process parameters calculation for various production processes-Selection jigs and fixtures election of quality assurance methods - Set of documents for process planning-Economics of process planning- case studies	08
3	**INTRODUCTION TO COST ESTIMATION:** Importance of costing and estimation –methods of costing-elements of cost estimation – Types of estimates – Estimating procedure- Estimation labor cost, material cost- allocation of over head charges- Calculation of depreciation cost	07
4	**PRODUCTION COST ESTIMATION:** Estimation of Different Types of Jobs - Estimation of Forging Shop, Estimation of Welding Shop, Estimation of Foundry Shop	08
5	**MACHINING TIME CALCULATION:** Estimation of Machining Time - Importance of Machine Time Calculation- Calculation of Machining Time for Different Lathe Operations, Drilling and Boring - Machining Time Calculation for Milling, Shaping and Planning -Machining Time Calculation for Grinding.	07

GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3172016

Suggested Specification table with Marks (Theory): (For BE only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
30	**20**	**10**	**20**	**10**	**10**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Peter scalon, "Process planning, Design/Manufacture Interface", Elsevier science technology Books, Dec 2002.
2. Sinha B.P, "Mechanical Estimating and Costing", Tata-McGraw Hill publishing co, 1995.
3. Chitale A.V. and Gupta R.C., "Product Design and Manufacturing", 2nd Edition, PHI, 2002.
4. Ostwalal P.F. and Munez J., "Manufacturing Processes and systems", 9 th Edition, John Wiley, 1998.
5. Russell R.S and Tailor B.W, "Operations Management", 4th Edition, PHI, 2003.
6. Mikell P. Groover, "Automation, Production, Systems and Computer Integrated Manufacturing", Pearson Education 2001.
7. K.C. Jain & L.N. Aggarwal, "Production Planning Control and Industrial Management", Khanna Publishers

Course Outcomes:

After successful completion of the course the students shall be able to:

Sr. No.	CO statement	Marks % weightage
CO-1	select the process, equipment and tools for various industrial products.	25
CO-2	prepare process planning activity chart.	25
CO-3	explain the concept of cost estimation.	25
CO-4	compute the job order cost for different type of shop floor.	25

List of Open Source Software/learning website:

www.nptel.com