

GUJARAT TECHNOLOGICAL UNIVERSITY

Production Engineering

B. E. SEMESTER: VI

Subject Name: **Estimating, Costing & Engineering Economics**

Subject Code: **162505**

Teaching Scheme				Evaluation Scheme		
Theory	Tutorial	Practical	Total	University Exam (Theory) (E)	Mid Sem Exam (Theory) (M)	Practical (I)
2	0	0	2	70	30	50

Sr. No.	Course Contents	Total Hrs
1.	Introduction to Estimating and Costing: Estimating-Definition, importance of estimating, aims, functions, organization of estimating department, qualities of estimator, constituents of estimation, profit costing- definition, aims of costing, standard cost, advantage of standard cost. Difference between estimating & costing, procedure for costing, costing methods, cost control- how to control costs, control on indirect material and tools, advantages of efficient costing, pricing policy, book keeping, book of accounts, account balance sheet, work accounts.	05
2.	Elements Of Costs: Elements of costs- material, labour costs, expenses, direct costs, Material costing- introduction, cost of material, control over material cost, waste control, valuation of material issued from stores, indirect costs, factory expense, administrative expenses, selling & Distribution expenses. Fixed & variable overheads, components of cost- selling price, allocation of on-cost- percentage on prime cost, direct labour cost, Labour costing- introduction, objectives of labour costing, wages & incentives, direct material cost, man hour rate, machine hour rate, machine hour rate, combination of man hour & machine hour rate, unit rate method, examples of on costs. Value analysis, simplification, standardization, rationalization.	08
3.	Mensuration Areas of plane figures, areas of irregular figures, volumes & surface areas of solids, Guldinus rules- estimation of surface area & volume of solids of revolution.	03

4.	<p>Estimation of Various Manufacturing Processes:</p> <p>Estimation in machine shop: Cutting speed, feed, depth of cut, lathe operations- turning, knurling, facing, drilling, boring, reaming, threading, tapping,. Milling operations- cutting, facing. Grinding operations- surface grinding, cylindrical grinding, shaping & planning, power consumption.</p> <p>Estimation in Sheet metal shop: Operations in sheet metal shop, blank layouts, estimation of time, capacity for power process.</p> <p>Estimation in Forging shop: Forging- hand forging, machine forging, forging operations, estimation procedure, and estimation of weight, losses & time.</p> <p>Estimation in Welding shop: Types of welding joints, estimation of welding cost. Estimation of gas cutting cost, estimation of arc welding cost, factors affecting welding cost.</p> <p>Estimation in pattern making & foundry shops: Estimation of pattern cost, Estimation of foundry shop. Foundry cost.</p>	08
5.	<p>Cost Accounting, Cost Control And Cost Reduction:</p> <p>Important terms, cost accounting, standard costing, procedure for costing, costing methods, cost control, techniques of cost control. Cost reduction, cost saving areas, variance analysis.</p>	03
6.	<p>Elements Of Economics</p> <p>Economics, production, capital, size of undertaking, integration, exchange, market, money, trade cycle, locational economics.</p>	03

Text Books:

1. Estimation and Costing by Banga & Sharma, Khanna
2. Mechanical Estimating and Costing by B.P.Sinha, TMH

Reference Books:

1. Mechanical Costing & Estimation by Sinha, Standard
2. Mechanical Estimating & Costing by Singla, Aggrawal, Kaston Pub.
3. Estimating & Costing by Mukharjee and Goswami
4. Elements of Estimating & Costing(Mechanical) by Saha