



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Syllabus for Bachelor of Vocation (B.Voc.), 6th Semester**  
**Branch: Production Technology**  
**Subject Name: Estimating Costing and Economics**  
**Subject Code: 21160301**

**Type of course:** Core

**Prerequisite:** Zeal to learn the subject

**Rationale:** The present course intends to give the exposure of various methods estimating and costing of various product as well as processes of manufacturing. The subject will give the better knowledge of costing as well as estimating for a product whose scale ranges from miniature to extra-large. Since “Estimating and Costing and Economics” is an important manufacturing route to fabricate bulk storage and processing equipment’s. The subject focuses on knowledge and understanding of various costing techniques

**Teaching and Examination Scheme:**

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical		
			C	ESE (E)	PA(M)	ESE (V)	PA (I)	
3	0	0	3	50	0	0	0	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

**Contents:**

Sr. No.	Content	Total Hrs.	Module % Weightage
01	<b>Introduction to Estimating and Costing:</b> 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.	6	15
02	<b>Elements Of Costs:</b> Introduction, materials cost, labour cost, expenses, overheads, allocation of on-cost, some examples of on-cost.	6	15
03	<b>Mensuration:</b> Areas of plane figures, areas of irregular figures, volumes & surface areas of solids, position of centroid, Guldinus rules.	6	15
04	<b>Estimation in Machine Shop and Sheet Metal Shop:</b> 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, examples. Estimation in sheet metal shop: operations in sheet metal shop, blank layouts, estimation of time, capacity for power process, examples.	10	23



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05	<b>Estimation in Welding Shop and Foundry Shop:</b> 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, examples. Estimation in pattern making & foundry shops: estimation of pattern cost, estimation of foundry shop, examples.	10	22
06	<b>Elements Of Economics</b> Economics, production, capital, size of undertaking, integration, exchange, market, money, trade cycle, locational economics	4	10
<b>Total</b>		<b>42</b>	<b>100</b>

**Suggested Specification table with Marks (Theory):**

<b>Distribution of Theory Marks</b>					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	20	-	-	-

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

**Course Outcomes:**

Sr. No.	CO Statement	Marks % Weightage
CO 1	Identify and determine various types of estimating and costing.	15
CO 2	Determine various types of cost occur after completion of all manufacturing processes.	15
CO 3	Identification and determination of mensuration techniques.	15
CO 4	Identification and determination of Estimation of Various Manufacturing Processes.	45
CO 5	To understand the fundamental principles of economics.	10

**Reference Books:**

- 1) Estimation and Costing by Banga & Sharma, Khanna
- 2) Mechanical Estimating and Costing by B.P.Sinha, TMH
- 3) Mechanical Costing & Estimation by Sinha, Standard
- 4) Mechanical Estimating & Costing by Singla, Aggrawal, Kaston Pub.
- 5) Estimating & Costing by Mukharjee and Goswami
- 6) Elements of Estimating & Costing (Mechanical) by Saha

**List of Open-Source Software/learning website:**

www.nptel.ac.in