# GANPAT UNIVERSITY

## FACULTY OF ENGINEERING & TECHNOLOGY

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|---|---|---|---|
| Programme | Master of Technology | Branch/Spec. | Electrical (Electrical Power System)/ (Renewable Energy) |
| Semester | II | Version | 1.0.0.0 |
| Effective from Academic Year | 2025-2026 | Effective for the batch Admitted in | July 2025 |
| Course Code | 3EE21OE2 | Course Name | Cost Management of Engineering Projects |

| Teaching scheme | | | | | | Examination scheme (Marks) | | | |
|---|---|---|---|---|---|---|---|---|---|
| (Per week) | Lecture(DT) | | Practical(Lab.) | | Total | | CE | SEE | Total |
| | L | TU | P | TW | | | | | |
| Credit | 3 | 0 | 0 | 0 | 3 | Theory | 40 | 60 | 100 |
| Hours | 3 | 0 | 0 | 0 | 3 | Practical | 00 | 00 | 00 |

**Pre-requisites:**

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**Course Outcomes**

On successful completion of the subject, students should be able to:

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| CO1 | Understand the fundamental cost concepts and the objectives of costing systems, and explain their role in strategic decision-making. |
| CO2 | Apply project management principles including planning, execution, cost control, and the use of bar charts/network diagrams to manage and monitor project performance efficiently. |
| CO3 | Analyze cost behaviour using tools such as marginal costing, CVP analysis, and variance analysis to solve various managerial decision-making problems. |
| CO4 | Evaluate and design advanced cost management strategies using different and simulation to enhance operational efficiency and strategic planning. |

**Theory syllabus**

| Unit | Content | Hrs |
|---|---|---|
| **1** | **Introduction and Overview of the Strategic Cost Management Process:** Cost concepts in decision-making, Relevant cost, Differential cost, Incremental cost and opportunity cost, Objectives of a costing system, Inventory valuation, Creation of a database for operational control, Provision of data for decision making. | **10** |
| **2** | **Project Management:** Project: Meaning, Different types, why to manage, cost overruns centre, various stages of project execution: conception to commissioning, Project execution as a conglomeration of technical and non-technical activities, Detailed Engineering activities, Pre-project execution main clearances and documents Project team: Role of each member, Importance project site: Data required with significance, Project contracts, Types and contents, Project execution, Project cost control, Bar charts and network diagram, Project commissioning: mechanical and process. | **13** |
| **3** | **Cost Behaviour and Profit Planning Marginal Costing:** Distinction between marginal costing and absorption costing; Break-even analysis, Cost volume-profit analysis, Various decision-making problems. Standard costing and variance analysis, Pricing strategies: Pareto analysis, Target costing, Life cycle costing, Costing of the service sector, Just-in-time approach, Material requirement planning, Enterprise resource planning, Total quality management and theory of constraints, Activity based cost management, Benchmarking, Balanced scorecard and value-chain analysis, Budgetary control, Flexible budgets, Performance budgets, Zero-based budgets, Measurement of divisional profitability pricing, Decisions including transfer pricing. | **13** |
| **4** | **Cost Management Techniques:** Quantitative techniques for cost management, Linear programming, PERT/CPM, Transportation problems, Assignment problems, Simulation, Learning curve theory. | **09** |

**Practical content**

Assignments and tutorials are based on the above syllabus.

**Text Books**

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| 1. | Cost Accounting A Managerial Emphasis, Prentice Hall of India, New Delhi. |
| 2. | Charles T. Horngren and George Foster, Advanced Management Accounting. |
| 3. | Robert S, Kaplan Anthony A. Alkinson, Management & Cost Accounting. |

**Reference Books**

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|---|---|
| 1. | Ashish K. Bhattacharya, Principles & Practices of Cost Accounting A. H. Wheeler publisher. |

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|---|---|
| 2. | N. D. Vohra, Quantitative Techniques in Management, Tata McGraw Hill Book Co. Ltd. |
| ICT/MOOCs | |
| 1. | https://nptel.ac.in/courses/110/101/110101132/ |
| 2. | https://www.coursera.org/learn/scope-time-management-cost |

**Mapping of CO with PO and PSO:**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 0 |
| CO2 | 2 | 3 | 2 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 3 | 2 | 2 | 2 | 0 |
| CO3 | 3 | 3 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 2 | 0 |
| CO4 | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 2 |