

**GOPAL KRISHNA COLLEGE OF
ENGINEERING AND TECHNOLOGY
GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764 005**

LESSON PLAN

Name of the Subject: PRODUCTION AND OPEATION MANAGEMENT

Name of the Faculty: Er. ASHUTOSH BADATYA

Subject Code:MEPE3003

Course Structure:3-0-0

Semester: 5th Semester

Branch:Mechanical

Semester From: July to November

No. of Weeks: 15 Weeks

| Week | Day | Theory Topics | Class |
|-------------|------------|--|--------------|
| 1st | 1st | Introduction to Production & Operations Management (POM) | 1 |
| | 2nd | Nature, scope, and objectives of POM | 1 |
| | 3rd | Evolution of production systems (craft, mass, lean) | 1 |
| 2nd | 1st | Interface with marketing, finance, HR, supply chain | 1 |
| | 2nd | Role of operations manager and decision-making | 1 |
| | 3rd | Trends: Industry 4.0, AI, sustainability | 1 |
| 3rd | 1st | Basics of Operations Research | 1 |
| | 2nd | Application of OR in decision-making | 1 |
| | 3rd | Types of production systems | 1 |
| 4th | 1st | Job shop and batch production | 1 |
| | 2nd | Mass and continuous production | 1 |
| | 3rd | Automation, robotics, IoT | 1 |

| Week | Day | Theory Topics | Class |
|-------------|------------|---------------------------------------|--------------|
| 5th | 1st | CAD and CAM overview | 1 |
| | 2nd | Facility location decisions | 1 |
| | 3rd | Break-even analysis | 1 |
| 6th | 1st | Capacity planning concepts | 1 |
| | 2nd | Types of capacity and CRP | 1 |
| | 3rd | Revision (Module-II) | 1 |
| 7th | 1st | Plant layout types | 1 |
| | 2nd | Layout planning tools (REL, CRAFT) | 1 |
| | 3rd | Routing and sequencing | 1 |
| 8th | 1st | Scheduling techniques | 1 |
| | 2nd | Production Planning and Control (PPC) | 1 |
| | 3rd | Aggregate Production Planning | 1 |
| 9th | 1st | APP strategies (chase, level, mixed) | 1 |
| | 2nd | Master Production Schedule (MPS) | 1 |
| | 3rd | Linear programming (overview) | 1 |
| 10th | 1st | Process selection strategies | 1 |
| | 2nd | Method study | 1 |
| | 3rd | Time study and standard time | 1 |
| 11th | 1st | Value engineering and value analysis | 1 |
| | 2nd | MRP and MRP-II | 1 |

| Week | Day | Theory Topics | Class |
|-------------|------------|---|--------------|
| | 3rd | TOC and CCPM | 1 |
| 12th | 1st | Line balancing | 1 |
| | 2nd | Forecasting methods | 1 |
| | 3rd | Numerical/problem-solving | 1 |
| 13th | 1st | Inventory management: functions and types | 1 |
| | 2nd | EOQ and reorder point | 1 |
| | 3rd | Safety stock | 1 |
| 14th | 1st | Inventory classification: ABC, VED, FSN | 2 |
| | 2nd | JIT and ERP systems | 1 |
| | 3rd | Maintenance strategies | 1 |
| 15th | 1st | Statistical Quality Control (SQC) | 1 |
| | 2nd | Control charts (variables and attributes) | 1 |
| | 3rd | TQM, Six Sigma, Kaizen | 1 |
| 16th | 1st | Lean manufacturing and SCM | 1 |
| | 2nd | Comprehensive revision | 1 |
| | 3rd | Doubt clearing and exam preparation | 1 |

Books Recommended

1. Production and Operations Management by S.N. Chary – McGraw Hill
2. Production and Operations Management by K. Aswathappa & K. Shridhara Bhat – Himalaya Publishing House
3. Modern Production and Operations Management by Elwood S. Buffa
4. Operations Management by William J. Stevenson – McGraw Hill

NPTEL Lectures

1. <https://nptel.ac.in/courses/110106044>
2. <https://nptel.ac.in/courses/110105128/>