



**PRODUCTION & OPERATIONS MANAGEMENT  
PRODUCTION & OPERATIONS MANAGEMENT  
[GENERIC CORE]**

<b>Semester IV</b>	<b>Credits: 3</b>	<b>Subject Code : BB42102</b>	<b>Lectures: 48</b>
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<b>Course Outcome:</b>
<p><b>At the end of the course the learner will be able to,</b></p> <ul style="list-style-type: none"> <li>• Relate to the concept of Production and Operations Management and various systems of Production and Layout.</li> <li>• Identify the significance of Product Design and Product Development in Production Management.</li> <li>• Appraise the techniques of Production Planning and control.</li> <li>• Evaluate the role of Ergonomics and Quality Management in Productivity.</li> <li>• Analyze the changing environment of Production and Operation, Maintenance methods and Quality Management.</li> </ul>

<b>Unit 1: Introduction to Production and Operations Management</b>	<b>12</b>
<ul style="list-style-type: none"> <li>• <b>Production Management:</b> <ul style="list-style-type: none"> <li>○ Meaning, Nature and Scope</li> <li>○ Objectives of Production Management</li> <li>○ Functions of Production Management</li> </ul> </li> <li>• <b>Operations Management:</b> <ul style="list-style-type: none"> <li>○ Meaning, Nature and Scope of Operations Management</li> <li>○ Objectives of Operations Management</li> </ul> </li> <li>• <b>Qualities and Responsibilities of a Production Manager</b></li> <li>• <b>Plant Location:</b> <ul style="list-style-type: none"> <li>○ Meaning, Importance and Need for selecting suitable Locations</li> <li>○ Advantages of Urban, Suburban and Rural Locations</li> <li>○ Factors responsible for Plant Location Decision</li> </ul> </li> <li>• <b>Plan Layout:</b> <ul style="list-style-type: none"> <li>○ Meaning, Objectives, Importance</li> <li>○ Types of Plant layout</li> <li>○ Factors influencing Plant Layout</li> </ul> </li> <li>• <b>Classification or Types of Production System:</b> <ul style="list-style-type: none"> <li>○ Continuous Production System</li> <li>○ Intermittent Production System</li> </ul> </li> </ul>	

<b>Unit 2: Product Design and Product Development</b>	<b>10</b>
<ul style="list-style-type: none"> <li>• <b>Product Design</b> <ul style="list-style-type: none"> <li>○ Definition of Product Design</li> </ul> </li> </ul>	

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<ul style="list-style-type: none"> <li>○ Characteristics, Importance ,Objectives of Product Design</li> <li>○ Factors affecting Product Design</li> <li>○ Product Policy of an Organization</li> <li>● <b>Approaches to Product Design:</b> <ul style="list-style-type: none"> <li>○ Computer aided design</li> <li>○ Concurrent Engineering</li> <li>○ Value Engineering or Value Analysis</li> </ul> </li> <li>● <b>Product Development:</b> <ul style="list-style-type: none"> <li>○ Meaning of Product Development</li> <li>○ Relationship between research, development and design</li> <li>○ Stages of Product Development</li> <li>○ Techniques or Tools of Product Development</li> <li>○ Factors responsible for Product Development</li> </ul> </li> </ul>	
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<b>Unit 3: Production Planning and Control, Maintenance Management</b>	<b>14</b>
<ul style="list-style-type: none"> <li>● <b>Production Planning and Control</b> <ul style="list-style-type: none"> <li>○ Meaning, Nature, Objectives, Functions</li> <li>○ Importance and Problems of Production Planning and Control</li> <li>○ Process of Production Planning</li> <li>○ Factors determining Production Planning and Control</li> <li>○ Techniques or Tools of Production Planning and Control</li> </ul> </li> <li>● <b>Maintenance Management</b> <ul style="list-style-type: none"> <li>○ Introduction ,Significance, Objectives,</li> <li>○ Types of Maintenance</li> <li>○ Requirements of a good Preventive Maintenance Program</li> <li>○ Total Productive Maintenance</li> </ul> </li> <li>● <b>Production Management Trends</b> <ul style="list-style-type: none"> <li>○ Modern Scientific maintenance methods ,</li> <li>○ Automation and computer integrated manufacturing.</li> <li>○ Process Management</li> <li>○ Green Manufacturing</li> </ul> </li> </ul>	

<b>Unit 4: Productivity, Ergonomics and Quality Control</b>	<b>12</b>
<ul style="list-style-type: none"> <li>● <b>Productivity:</b> <ul style="list-style-type: none"> <li>○ Concept and Definition of Productivity</li> <li>○ Importance of Productivity, Techniques of Productivity Improvement</li> <li>○ Factors influencing Productivity.</li> </ul> </li> <li>● <b>Ergonomics:</b> <ul style="list-style-type: none"> <li>○ Introduction and Definition of Ergonomics</li> <li>○ Objectives of Ergonomics, Components of Ergonomics</li> <li>○ Ergonomics is Multidisciplinary</li> <li>○ Man Machine System (Display Design, Design of Control, Environmental factors)</li> </ul> </li> <li>● <b>Quality Management:</b></li> </ul>	

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- Quality System-Concept and Dimensions of Quality
- Quality Control
- Objectives of Quality Control
- Ensuring Quality
- Quality Initiatives : TQM, Quality Circles , Kaizen ,Quality Certification

# 12 hours for Library work, practical or field work or research purposes

**Recommended Text Books:**

- K. Aswathappa & Bhat Shridhara K. "*Production and Operations Management*", Mumbai, Himalaya Publishing House , 2015
- Jhamb. L.C ;"*Production (Operations) Management* ", 14th Ed., Pune, Everest Publishing House. 2009
- Goel B.S ., "*Production and Operations Management*", 15th Ed., Meerut, Pragati Prakashan., 2008
- MartandTelsang,, *Industrial Engineering and Production Management* –S. Chand Publications.
- Chunawala. S. "*Production and Operation Management*", 4th Ed, New Mumbai, Himalaya Publishing House. 2000

**Recommended Reference Books:**

- Chary ;"*Production and Operations Management*", 4th Ed., New Delhi, Tata McGraw-Hill Publishing Co. Ltd., 2009
- Chase, "*Production and Operations Management*", 8th Ed., New Delhi, Tata McGraw-Hill Publishing Co. Ltd., 2000
- Panneerselvam "*Production and Operations Management* ", New Delhi, Prentice Hall., 2002
- Muhlemann "*Production and Operations Management*", New Delhi, Pearson Education, Darling Kindersley Pvt. Ltd. 2008

**Websites:**

<https://sustainabilityguide.eu/ecodesign/manufacturing/> - Reference Unit III

**E- Resources**

1. <https://nlist.inflibnet.ac.in/>
2. <https://search.ebscohost.com/>

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