

Production and Operations Management Production and Operations Management (Elective Course)

Semester: I Credits: 4 Subject Code: MCM12003 Lectures: 48

Course Outcomes:

At the end of this course, the learner will be able to:

- Summarise the concepts and functions of Production and Operations Management
- Relate the role of Product, Process and Work Designs in operational efficiency
- Comprehend the process of Purchasing and Material Handling
- Identify the role of Competitive Practices in effective Production & Operations Management

Unit 1: Introduction to Production and Operations Management	12
Production and Operations Management:	
o Meaning	
o Importance	
 Characteristics of Modern Production and Operation Function 	
o Manufacturing versus Service Operations	
 Functions of Production Management 	
 Recent Trends in Production and Operations Management 	
Facility Layout:	
o Factors influencing Facility Layout	
 Types of Facility Layout 	
Production Planning and Control:	
 Functions of Production Planning and Control 	
 Capacity Planning 	
Service Operations:	
 Types of Service Operations 	
Scheduling for Services	

Uı	nit 2: Product, Process and Work Design	12
•	Product Design: concept	
	o Characteristics of a good design	
	 Approaches to a good Design 	
	 Stages of Product Design and Development 	
•	Process Planning and Design:	
	o Make or Buy	
	o Major Process Decisions	

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- o Planning Process of Service Operations
- Design of Work Systems:
 - o Types of Manufacturing Systems
- Work Study

Unit 3: Purchasing and Materials Management	
 Material Requirement Planning: Objectives Operation of the Manufacturing Resource Planning System MRP in Services Enterprise Resource Planning: Concept, Features SAP system: Concept, Features 	
 Scientific Purchasing: Meaning Purchase Procedure 	
 Storage system: Functions of Storage Department Inventory management: Meaning Inventory Control Techniques 	

Unit 4: Competitive Practices in Production Management 12 Industry 4.0: concept o Impact of Industry 4.0 on Productivity o Challenges in Industry 4.0 Artificial Intelligence (AI), Machine Learning (ML) and Deep Learning (DL): Concept Relationship between AI, Big Data, Block Chain Technology and Cloud Storage Design of Experiments (DOE) with AI Role of AI in HIRA (Hazard Identification and Risk Analysis) Role of AI in OHSAS (Occupational Hazard and Safety Management System) Role of AI in Predictive Maintenance AI and Total Waste Reduction: o AI in Supply Chain Management Cycles o Use of AI in Smart Waste Management and Recycling AI in ERP Software: Benefits AI and JIT Systems ISO 14000: Global Environment Management Standards

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- Role of AI in Good Manufacturing Practices & Good Housekeeping
- Role of AI in International Operations Management

#12 contact hours for Assignments, Visits, Research, Field Studies, etc.

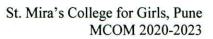
Recommended Reference Books:

- Aswathappa K. & Bhat K. Shridhara, Production and Operations Management. Himalaya Publishing House: Mumbai; 2014.
- Chary S. N. Production and Operations Management. Tata McGraw-Hill Publishing Co. Ltd.: New Delhi; 2019.
- Dr. Kelkar Bhooshan, Mone Kaustubh R. & Kelkar Vyom. Future Tense? (An Introduction to "Industry 4.0"). Neuflex Talent Solutions: Pune; 2019.
- Jhamb. L.C. Production & Operations Management. Everest Publishing House: Pune; 2009.

Journals:

- CMA Dr. Kolay Mohit Kumar (March 2019), AI and its ever-expanding Horizon, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 26-32
- CMA Shah Joy M. (March 2019), Artificial Intelligence in Project Management, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 34-37
- CMA Narayana Krish (March 2019), Redrawing the Healthcare Landscape: the facets of AI and Robotics, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 38-41
- CMA Dr. Melwani Rekha (March 2019), AI: A driving force for Industry 4.0, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 42-45
- CMA Pradhan Suraj Kumar (March 2019), Decoding AI, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 46-50
- CMA Yuvaraj H. (March 2019), AI: An emerging trend of Technology, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 51-54
- CMA Hinge Deepa (March 2019), Alin powered Banking Sector, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 55-57
- Dr. Moinoddin Mohammad Khaja (March 2019), AI in Banking Sector-a study, The Management Accountant: Artificial Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 58-61
- CMA Kumar Vitin (March 2019), AI: Leveraging Technology in enhancing overall Business decision making process, The Management Accountant: Artificial

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Intelligence- an emerging trend of Technology; Mumbai, Volume 54, No. 3, Pages 62-64

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