



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

Semester: I	Credits: 4	Subject Code: MCM12003	Lectures: 48
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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
<ul style="list-style-type: none">• Production and Operations Management:<ul style="list-style-type: none">○ Meaning○ Importance○ Characteristics of Modern Production and Operation Function○ Manufacturing versus Service Operations○ Functions of Production Management○ Recent Trends in Production and Operations Management• Facility Layout:<ul style="list-style-type: none">○ Factors influencing Facility Layout○ Types of Facility Layout• Production Planning and Control:<ul style="list-style-type: none">○ Functions of Production Planning and Control○ Capacity Planning• Service Operations:<ul style="list-style-type: none">○ Types of Service Operations• Scheduling for Services	

Unit 2: Product, Process and Work Design	12
<ul style="list-style-type: none">• Product Design: concept<ul style="list-style-type: none">○ Characteristics of a good design○ Approaches to a good Design○ Stages of Product Design and Development• Process Planning and Design:<ul style="list-style-type: none">○ Make or Buy○ Major Process Decisions	

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<ul style="list-style-type: none"> ○ Planning Process of Service Operations ● Design of Work Systems: <ul style="list-style-type: none"> ○ Types of Manufacturing Systems ● Work Study 	
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Unit 3: Purchasing and Materials Management	12
<ul style="list-style-type: none"> ● Material Requirement Planning: <ul style="list-style-type: none"> ○ Objectives ○ Operation of the Manufacturing Resource Planning System ○ MRP in Services ○ Enterprise Resource Planning: Concept, Features ○ SAP system: Concept, Features ● Scientific Purchasing: <ul style="list-style-type: none"> ○ Meaning ○ Purchase Procedure ● Storage system: <ul style="list-style-type: none"> ○ Functions of Storage Department ● Inventory management: <ul style="list-style-type: none"> ○ Meaning ○ Inventory Control Techniques 	

Unit 4: Competitive Practices in Production Management	12
<ul style="list-style-type: none"> ● Industry 4.0: concept <ul style="list-style-type: none"> ○ Impact of Industry 4.0 on Productivity ○ 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: <ul style="list-style-type: none"> ○ AI in Supply Chain Management Cycles ○ Use of AI in Smart Waste Management and Recycling ● AI in ERP Software: Benefits <ul style="list-style-type: none"> ○ 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), *AI in 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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Faculty	Ms. Jyoti Chintan	<i>Jyoti Chintan</i> 15/6/20
Faculty	Dr. Dimple Buche	<i>Dimple Buche</i> 15/6/20
Faculty	Ms. Rajni Singh	<i>Rajni Singh</i> 15/6/20
Faculty	Ms. Shanthi Fernandes	<i>Shanthi Fernandes</i> 15/6/20
Subject Expert (Outside SPPU)	Dr. Shirang Kandalgaonkar	<i>Shirang Kandalgaonkar</i> 15/6/20
Subject Expert (Outside SPPU)	Prof. Sumita Joshi	<i>Sumita Joshi</i> 15/6/20
VC Nominee	Dr. Shubhangi Joshi	<i>Shubhangi Joshi</i> 15/6/20
Industry Expert	Mr. Sanjay Kulkarni	<i>Sanjay Kulkarni</i> 15/6/20
Alumni	Ms. Shivani Sinha	<i>Shivani Sinha</i> 15/6/20

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