



# GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Master of Business Administration, 2<sup>nd</sup> Semester  
**Subject Name: Production and Operations Management (POM)**  
**Subject Code: 4529205**

With effective  
 from academic  
 year 2018-19

## 1. Learning Outcomes:

Learning Outcome Component	Learning Outcome (Learner will be able to)
Business Environment and Domain Knowledge (BEDK)	<ul style="list-style-type: none"> <li>• <i>Analyze</i> contemporary production and operation management practices for a given industry.</li> </ul>
Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)	<ul style="list-style-type: none"> <li>• <i>Conduct</i> facility planning by making location and layout decisions for a small manufacturing or service facility.</li> <li>• <i>Analyze</i> and <i>select</i> the most appropriate methods and tools for the solution of problems related to production planning, shop floor scheduling and inventory control.</li> </ul>
Global Exposure and Cross-Cultural Understanding (GECCU)	<ul style="list-style-type: none"> <li>• <i>Analyze</i> the current global production and operations management practices and <i>deduce</i> the applicability of these practices to local manufacturing units.</li> <li>• <i>Compare</i> and <i>contrast</i> operations management practices among different cultures.</li> </ul>
Social Responsiveness and Ethics (SRE)	<ul style="list-style-type: none"> <li>• <i>Critically evaluate</i> the relationship between production systems and human safety.</li> </ul>
Effective Communication (EC)	<ul style="list-style-type: none"> <li>• <i>Explain</i> the various parts of the operations and production management processes and their interaction with a given business function.</li> </ul>
Leadership and Teamwork (LT)	<ul style="list-style-type: none"> <li>• <i>Collaborate</i> with team members to construct network models and techniques for a given project management problem.</li> </ul>

### LO – PO Mapping: Correlation Levels:

1 = Slight (Low); 2 = Moderate (Medium); 3 = Substantial (High), “-“= no correlation

Sub. Code: 4529202	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
LO1: Analyze contemporary production and operation management practices for a given industry.	3	2	3	1	2	-	-	-	1
LO2: Conduct facility planning by making location and layout decisions for a small manufacturing or service facility.	3	3	2	2	2	-	-	2	2
LO3: Analyse and select the most appropriate methods and tools for the solution of problems related to production planning, shop floor scheduling and inventory control.	3	1	3	-	-	-	-	-	2
LO4: Analyze the current global production and	3	2	3	2	3	1	-	2	2



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operations management practices and deduce the applicability of these practices to local manufacturing units.									
LO5: Compare and contrast operations management practices among different cultures.	2	-	2	-	3	-	1	-	2
LO6: Critically evaluate the relationship between production systems and human safety.	2	1	2	2	2	-	3	-	1
LO7: Explain the various parts of the operations and production management processes and their interaction with a given business function.	1	2	1	3	2	1	1	2	2
LO8: Collaborate with team members to construct network models and techniques for a given project management problem.	2	2	2	2	1	3	2	1	2

2. **Course Duration:** The course duration is of **40 sessions of 60 minutes** each.

3. **Course Contents:**

Module No:	Module Content	No. of Sessions	70 Marks (External Evaluation)
I	<b>Introduction of Production &amp; Operation Management:</b> <ul style="list-style-type: none"> <li>System and function view of organizations, scope, Evolution and future of production and operation management.</li> <li>Process design-different types of process with its. merits and demerits, process classification based on order, process selection, different type of manufacturing process, process performance and evaluation etc.</li> <li>Product design; types of products and designing, evaluation of design</li> </ul>	10	17
II	<b>Facility location; (theoretical concept only)</b> <b>Plant Layout:</b> <ul style="list-style-type: none"> <li>Different types of layout.</li> </ul> <b>Aggregate Production Planning (APP):</b> <ul style="list-style-type: none"> <li>Objective, strategies and cost of APP, master production schedule, Rough cut capacity planning etc.(theoretical</li> </ul>	10	18



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	<b>concept only)</b> <b>Material Requirement Planning (MRP) (theoretical concept only)</b> <b>Inventory Management (theory and numerical)</b>		
III	<b>Operations scheduling:</b> <ul style="list-style-type: none"><li>• Definition, Objectives, Types</li><li>• Sequencing (n-jobs on m machine) <b>(theory and numerical)</b></li><li>• Queuing systems (Waiting Line Analysis) <b>(theory and numerical)</b></li><li>• Line Balancing<b>(theoretical concept only)</b></li><li>• Project management; Project scheduling by using network PERT/CPM, <b>(theory and numerical)</b></li></ul>	10	18
IV	<b>Quality management:</b> <ul style="list-style-type: none"><li>• Definition, experts' views on quality.</li><li>• Dimensions of quality.</li><li>• Cost of quality and quality cost audit.</li><li>• Statistical process control, control charts <b>(theory and numerical)</b>, Total quality management (TQM), Six sigma, ISO 9000 and other ISO series.</li><li>• Lean and Just in Time production system <b>(theoretical concept only)</b></li></ul> <b>Industrial safety</b>	10	17
V	<b>Practical</b> <ul style="list-style-type: none"><li>• Students should visit manufacturing / service organizations and<ul style="list-style-type: none"><li>○ Identify the production planning and control systems, procedures and techniques. For service organizations, they can learn about how services are produced and how existing capacity is matched with demand.</li><li>○ Identify operations scheduling in any system and suggest more efficient ways of doing work.</li><li>○ Understand the significance of existing plant or service layouts.</li><li>○ Identify materials and inventory management practices in organized and unorganized sectors.</li><li>○ Simulate a production capability / facility with the optimum use and application of concepts.</li></ul></li></ul>	---	(30 Marks CEC)

#### 4. Pedagogy:

- ICT enabled Classroom teaching
- Case study
- Practical / live assignment
- Interactive class room discussions



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## 5. Evaluation:

Students shall be evaluated on the following components:

	<b>Internal Evaluation</b>	<b>(Internal Assessment- 50 Marks)</b>
<b>A</b>	<ul style="list-style-type: none"><li>• Continuous Evaluation Component</li></ul>	30 marks
	<ul style="list-style-type: none"><li>• Class Presence &amp; Participation</li></ul>	10 marks
	<ul style="list-style-type: none"><li>• Quiz</li></ul>	10 marks
<b>B</b>	<b>Mid-Semester examination</b>	<b>(Internal Assessment-30 Marks)</b>
<b>C</b>	<b>End –Semester Examination</b>	<b>(External Assessment-70 Marks)</b>

## 6. Reference Books:

No.	Author	Name of the Book	Publisher	Year of Publication / Edition
1	Chase R. B., Jacobs, F. R., Aquilano, N. J. and Agarwal N. K.,	Operations Management for Competitive Advantage	TMH	Latest
2	Kanishka Bedi	Production and Operation Management	Oxford	Latest
4	Roberta S. Russell, Bernard W. Taylor	Operations and Supply Chain Management	Wiley	Latest
5	Arun Kumar, N.MeenakshiP.	Production and Operation Management	Cengage	Latest
6	Heizer, Jay and Render, Barry	Operations Management	Pearson	Latest
7	Elwood S. Buffa and Rakesh K.Sarin	Modern Production and Operations Management	Wiley	Latest
8	David A. Collier, James R. Evans and Kunal Ganguly	Operation Management	Cengage	Latest
9	S. A. Chunawala, Dr. R. Patel	Production and Operations Management	Himalaya	Latest
10	Martin K. Starr	Production and Operation	Cengage	Latest

Note: Wherever the standard books are not available for the topic appropriate print and online resources, journals and books published by different authors may be prescribed.

## 7. List of Journals / Periodicals / Magazines / Newspapers / Web resources, etc.

1. International Journal of Production Economics
2. Journal of Production Research and Management
3. Journal of Operations Management