GUJARAT TECHNOLOGICAL UNIVERSITY

Programme: Master of Business Administration, 2nd Semester
Branch: Logistic & Supply Chain Management
Subject Name: Production & Operations Management
Subject Code: 1529705

1. Learning Outcomes:

Learning Outcome Component	Learning Outcome (Learner will be able to)
Business Environment and Domain Knowledge (BEDK)	• *Analyze* contemporary production and operation management practices for a given industry.
Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)	• *Conduct* facility planning by making location and layout decisions for a small manufacturing or service facility. • *Analyse* and *select* the most appropriate methods and tools for the solution of problems related to production planning, shop floor scheduling and inventory control.
Global Exposure and Cross-Cultural Understanding (GECCU)	• *Analyze* the current global production and operations management practices and *deduce* the applicability of these practices to local manufacturing units. • *Compare* and *contrast* operations management practices among different cultures.
Social Responsiveness and Ethics (SRE)	• *Critically evaluate* the relationship between production systems and human safety.
Effective Communication (EC)	• *Explain* the various parts of the operations and production management processes and their interaction with a given business function.
Leadership and Teamwork (LT)	• *Collaborate* with team members to construct network models and techniques for a given project management problem.

LO – PO Mapping: Correlation Levels:

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

	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 operations management	3	2	3	2	3	1	-	2	2

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	**Introduction of Production & Operation Management:** • System and function view of organizations, scope, Evolution and future of production and operation management. • 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. • Product design; types of products and designing, evaluation of design	10	17
II	**Facility location; (theoretical concept only)** **Plant Layout:** • Different types of layout. **Aggregate Production Planning (APP):**	10	18

	• Objective, strategies and cost of APP, master production schedule, Rough cut capacity planning etc.**(theoretical concept only)** **Material Requirement Planning (MRP) (theoretical concept only)** **Inventory Management (theory and numerical)**		
III	**Operations scheduling:** • Definition, Objectives, Types • Sequencing (n-jobs on m machine) **(theory and numerical)** • Queuing systems (Waiting Line Analysis) **(theory and numerical)** • Line Balancing**(theoretical concept only)** • Project management; Project scheduling by using network PERT/CPM, **(theory and numerical)**	10	18
IV	**Quality management:** • Definition, experts' views on quality. • Dimensions of quality. • Cost of quality and quality cost audit. • Statistical process control, control charts **(theory and numerical)**, Total quality management (TQM), Six sigma, ISO 9000 and other ISO series. • Lean and Just in Time production system **(theoretical concept only)** **Industrial safety**	10	17

V	**Practical**
	• Students should visit manufacturing / service organizations and
	  • 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.
	  • Identify operations scheduling in any system and suggest more efficient ways of doing work.
	  • Understand the significance of existing plant or service layouts.
	  • Identify materials and inventory management practices in organized and unorganized sectors.
	  • Simulate a production capability / facility with the optimum use and application of concepts.
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4. Pedagogy:

- ICT enabled Classroom teaching
- Case study

- Practical / live assignment
- Interactive class room discussions

5. Evaluation:

Students shall be evaluated on the following components:

A	**Internal Evaluation**	**(Internal Assessment- 50 Marks)**
	• Continuous Evaluation Component	30 marks
	• Class Presence & Participation	10 marks
	• Quiz	10 marks
B	**Mid-Semester examination**	**(Internal Assessment-30 Marks)**
C	**End –Semester Examination**	**(External Assessment-70 Marks)**

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