GUJARAT TECHNOLOGICAL UNIVERSITY

PRODUCTION ENGINEERING
RECENT ADVANCES IN MANUFACTURING
SUBJECT CODE: 2182502
B.E. 8th SEMESTER

Type of course: Under Graduate

Prerequisite: Nil

Rationale: The course aims to aware students regarding advancement in manufacturing.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
				Theory Marks			Practical Marks			
L	T	P	C	ESE (E)	PA (M)		ESE (V)		PA (I)	
					PA	ALA	ESE	OEP		
3	1	0	4	70	20	10	30	0	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	**Enterprise Resource Planning** Role of management information system, MIS & Production/ operation system, Decision making information system, Information value & measuring the information value, Assessing information needs Identification & development of information sources, design & development of information flow network. Different ERP modules and their Implementation procedures, Role of ERP in productivity improvement, ERP for different types of manufacturing systems, Software and Hardware need for ERP implementation.	**20**	40
2	**Logistic and Supply Chain Management** Role of supply chain, Different models of supply chain management, Optimization of transport Network, Zero inventories, E-manufacturing, E-commerce.	**10**	20
3	**Japanese Manufacturing Systems** Japanese approach for productivity improvement; Concepts like JIT, KANBAN systems, KAIZEN Philosophy, Manufacturing Improvement techniques such as SMED, POKAYOKE, JIDOKA, TPS, 5S.	**12**	22
4	**Value Analysis and Value Engineering** Introduction, Concept of value analysis, Definition of value analysis, Objectives of value analysis, Difference between value analysis and value engineering, When to apply value analysis, Stages in value analysis, Techniques of value analysis and value engineering, Un-necessary costs, Test for value analysis, Advantages of value analysis	**09**	18

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
7	**14**	**21**	**14**	**14**	**0**

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table

Reference Books:

1. Enterprise resource Planning: Concepts and Practice By Garg & Venkitakrishnan
2. ERPWARE- ERP Implementation Framework BY Garg & Venkitakrishnan
3. Logistics & Supply Chain Management By Christopher
4. Logistics Engineering & Management By Blanchard
5. Frontiers of E- Commerce By Kalakota
6. Electronic Commerce- A Manager's Guide BY Kalakota
7. Design and Manufacturing By Surender Kumar
8. Kaizen- The Key to Japanese Success By Masaki Imai
9. Japanese Manufacturing Systems By R.J. Schonberger(Ref.)
10. Toyota Production System By Ohno Taiichi

Course Outcome:

After learning the course the students should be able to:

1. Understand ERP system.
2. Implement SCM.
3. Differentiate various Japanese Manufacturing System.
4. Implement Value Analysis & Value Engineering.

List of Experiments:

Tutorials based on above syllabus.

List of Open Source Software/learning website:

www.nptel.ac.in/

ACTIVE LEARNING ASSIGNMENTS: Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should be submitted to GTU.