



# GUJARAT TECHNOLOGICAL UNIVERSITY

Master of Engineering

Subject Code: 3722811

Semester – II

Subject Name: Product Life Cycle Management

Type of course: Elective III

Prerequisite: Nil

### Rationale:

This course provides the knowledge and practice regarding Product life Cycle Management. This course gives practice through Product Life Management Strategies and Product Data Management. Product forecasting gives new Product Design for Manufacturing.

### Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA (M)	ESE (V)	PA (I)		
03	0	02	04	70	30	30	20	150

### Content:

Sr. No.	Content	Total Hrs
1	<b>Introduction to PLM</b> Need for PLM, opportunities and benefits of PLM, different views of PLM, components of PLM, phases of PLM, PLM feasibility study, PLM visioning	06
2	<b>PLM Strategies</b> Industrial strategies, strategy elements, its identification, selection and implementation, change management for PLM.	06
3	<b>Product Data Management (PDM)</b> PDM systems and importance, reason for implementing a PDM system, financial justification of PDM, barriers to PDM implementation.	08
4	<b>Product Design</b> Engineering design, organization and decomposition in product design, product design process, methodical evolution in product design, concurrent engineering, design for 'X' and design central development model. Strategies for recovery at end of life, recycling, human factors in product design. Modeling and simulation in product design.	10
5	<b>New Product Development</b> Structuring new product development, building decision support system, Estimating market opportunities for new product, new product financial control, implementing new product development, market entry decision, launching and tracking new product program. Concept of redesign of product	08
6	<b>Technology Forecasting</b> Future mapping, invocating rates of technological change, methods of technology	07



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	forecasting such as relevance trees, morphological methods and mission flow diagram, combining forecast of different technologies, uses in manufacture alternative.	
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## Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
20	20	20	20	10	10

**Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)**

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. Fabio Giudice, Guido La Rosa, Product Design for the environment-A life cycle approach, Taylor & Francis 2006.
2. Robert J. Thomas, NPD: Managing & forecasting for strategic processes.
3. Martins Joseph, Technological Forecasting for decision Making, 2nd edition, North Holland.

## Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	Students should be able to understand the knowledge and practice regarding Product life Cycle Management and their Strategies,	50
CO-2	Understand and apply knowledge of Product Data Management, Product forecasting for new Product Design for Manufacturing.	50

## Term Work:

The term work shall be based on the topics mentioned above.

## List of Experiments:

Individual and group task as per above content of syllabus

## Major Equipment:

Nil



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## **List of Open Source Software/learning website:**

1. <http://nptel.ac.in/courses/110101005/downloads/Lecture%2039.pdf>
2. <http://www.product-lifecycle-management.info/what-is-plm/PLM-ROI.html>
3. [http://www.iped-uk.com/Product\\_Life\\_Cycle\\_Management.pdf](http://www.iped-uk.com/Product_Life_Cycle_Management.pdf)
4. [http://www.sap.com/bin/sapcom/cs\\_cz/downloadasset.2011-07-jul-06-07.product-lifecycle-management-bringing-sustainable-products-to-market-faster-pdf.html](http://www.sap.com/bin/sapcom/cs_cz/downloadasset.2011-07-jul-06-07.product-lifecycle-management-bringing-sustainable-products-to-market-faster-pdf.html)
5. [http://www.urenio.org/tools/en/Product\\_Life\\_Cycle\\_Management.pdf](http://www.urenio.org/tools/en/Product_Life_Cycle_Management.pdf)
6. <http://www.entrepreneurial-insights.com/product-life-cycle-management-guide/>
7. <http://www.tcs.com/SiteCollectionDocuments/White%20Papers/Manufacturing-Enterprise-PLM-1013-1.pdf>