

Branch Name:	Mechanical Engineering (Production Technology)
Program Code:	ET209
Course Name:	Product Life Cycle Management
Course Code:	2ET2090204T
Pre-requisite Course:	Zeal to learn the subject

Course Objectives:

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

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	SEE		CCA		SEE		CCA						
	L	T	P	Total	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
3	3	-	-	3	24	60	16	40	-	-	-	-	100

Subject Contents			
Sr. No	Topic	Total Hours	Weightage (%)
1	Introduction to PLM: Need for PLM, opportunities and benefits of PLM, different views of PLM, components of PLM, phases of PLM, PLM feasibility study, PLM Visioning.	02	05
2	PLM Strategies: Industrial strategies, strategy elements, its identification, selection and Implementation, change management for PLM.	02	05
3	Product Data Management (PDM): PDM systems and importance, reason for implementing a PDM system, financial justification of PDM, barriers to PDM implementation.	04	20
4	Product Design: 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.	04	20
5	New Product Development: 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.	06	25
6	Technology Forecasting: Future mapping, invoking rates of technological change, methods of technology forecasting such as relevance trees, morphological methods and mission flow diagram, combining forecast of different technologies, uses in manufacture alternative.	06	25

	24	100
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Review Presentation: The student is expected to spend minimum 2 hours per week (as mentioned in the teaching and evaluation scheme) to refer at least two peer reviewed journal papers related to this domain/subject. The student is expected to identify issues/challenges and emerging trends in the domain/subject. Student is supposed to explore various video lectures (E.g. NPTEL) available in the domain/subject. Student is required to make a review-presentation on the work carried out for the same. Recommended sites for journal papers are (1) asmedigitalcollection.asme.org (2) springer.com (3) sciencedirect.com (5) ieeexplore.ieee.org (6) scholar.google.co.in or others of similar repute.

List of 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, John Wiley & Sons Inc, United States, 1993.
3. Martino Joseph, Technological Forecasting for Decision Making, 2nd edition, McGraw-Hill Inc., US; 3rd ed. edition (1 October 1992).

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Acquire fundamentals of the Product life Cycle Management and their Strategies.	1 Remembering 2 Understanding
CLO2	Able to apply PLM strategies to real problems.	3 Applying
CLO3	Understand importance of Product Data Management (PDM) systems and able to implement it.	2 Understanding 3 Applying
CLO4	Able to understand challenges in product design and learn procedure and steps involved in product design.	2 Understanding 4 Analyze
CLO5	Learn structuring of new product development and Estimating opportunities, financial control, launching and redesign of product.	5 Evaluating 6 Creating
CLO6	Able to predict technological changes related to manufacturing process involve in products and able to find alternates.	6 Creating

Mapping of CLOs with POs & PSOs:

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1			M			H	M	M			H	L		
CLO2	H	M		M	M				L		L		H	
CLO3		M	M	H	L		L				M		M	
CLO4	M	H	M	M	H	L				L		M	M	L
CLO5	M	M		M	H		L		L				M	
CLO6	H	M	M		H	L			L	M		M		M

H: High, M: Medium, L: Low