

GUJARAT TECHNOLOGICAL UNIVERSITY

MECHANICAL (PRODUCTION ENGINEERING) (28)

PRODUCT LIFE CYCLE MANAGEMENT

SUBJECT CODE: 2722811

SEMESTER: II

Type of course: MAJOR 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)			
					ESE	OEP	PA	RP		
3	2#	0	4	70	30	30	0	10	10	150

Content:

Sr. No.	Content	Total Hrs	% 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.	05	15
2	PLM Strategies Industrial strategies, strategy elements, its identification, selection and implementation, change management for PLM.	04	12
3	Product Data Management (PDM) PDM systems and importance, reason for implementing a PDM system, financial justification of PDM, barriers to PDM implementation.	04	12
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.	10	29
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	6	17
6	Technology Forecasting Future mapping, invocating rates of technological change, methods of technology forecasting such as relevance trees, morphological methods	5	15

	and mission flow diagram, combining forecast of different technologies, uses in manufacture alternative.		
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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 Outcome:

After learning the course the students should be able to understand the knowledge and practice regarding Product life Cycle Management and their Strategies, Product Data Management, Product forecasting which finally gives new Product Design for Manufacturing.

List of Open Source Software/learning website:

- I. <http://nptel.ac.in/courses/110101005/downloads/Lecture%2039.pdf>
- II. <http://www.product-lifecycle-management.info/what-is-plm/PLM-ROI.html>
- III. http://www.iped-uk.com/Product_Life_Cycle_Management.pdf
- IV. 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
- V. http://www.urenio.org/tools/en/Product_Life_Cycle_Management.pdf
- VI. <http://www.entrepreneurial-insights.com/product-life-cycle-management-guide/>
- VII. <http://www.tcs.com/SiteCollectionDocuments/White%20Papers/Manufacturing-Enterprise-PLM-1013-1.pdf>

Review Presentation (RP): The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website.