UNIVERSITY OF PUNE, PUNE

B E (Mechanical) Part II (2008 Course)

402050D OPEN ELECTIVE - PRODUCT LIFEYCLE MANAGEMENT

Teaching Scheme | **Examination Scheme**

Lectures 4 hrs/week | Theory 100 Marks

Section – I

UNIT I

INTRODUCTION TO PRODUCT LIFE CYCLE MANAGEMENT

Product life cycle – Introduction, growth, maturity & decline, Product Lifecycle Management- Definition & Overview, Background for PLM-corporate challenges, Need of PLM, Components/Elements of PLM, Emergence of PLM, Significance of PLM - life cycle problems to be resolved, product development problems to be resolved, Customer Involvement. **6**

UNIT II

CONSTRUCTING PRODUCT LIFE CYCLE MANAGEMENT

PLM Life cycle model- plan, design, build, support & dispose. Threads of PLM-computer aided design (CAD), engineering data management (EDM), Product data management (PDM), computer integrated manufacturing (CIM). Weaving the threads into PLM, comparison of PLM to Engineering resource planning (ERP). PLM characteristics -singularity, cohesion, traceability, reflectiveness. **8**

UNIT III

PRODUCT LIFE CYCLE MANAGEMENT - DRIVERS

External drivers- scale, complexity, cycle times, globalization & regulation. Internal drivers - productivity, innovation, collaboration & quality. Board room drivers – income, revenues & costs. **4**

Section - II

UNIT IV

PRODUCT LIFE CYCLE MANAGEMENT SYSTEM

Product life cycle management system- system architecture, Information models and product structure, Information model, the product information data model, the product model, functioning of the system. Reasons for the deployment of PLM systems **6**

UNIT V

PRODUCT LIFE CYCLE ENVIRONMENT

Product Data and Product Workflow, The Link between Product Data and Product Workflow, Key Management Issues around Product Data and Product Workflow, Company's PLM vision, The PLM Strategy, Principles for PLM strategy, Preparing for the PLM strategy, Developing a PLM strategy, Strategy identification and selection, Change Management for PLM. **6**

UNIT VI

COMPONENTS OF PRODUCT LIFE CYCLE MANAGEMENT Different phases of product lifecycle and corresponding technologies, Product development processes and methodologies, Foundation technologies and standards (e.g. visualization, collaboration and enterprise application integration), Core functions (e.g., data vaults, document and content management, workflow and program management), Functional applications (e.g., configuration management) Product organizational structure, Human resources in product lifecycle, Methods, techniques, Practices, Methodologies, Processes, System components in lifecycle, slicing and dicing the systems, Interfaces, Information, Standards, Examples of PLM in use. **10**

REFERENCE BOOKS

1. **Grieves Michael**, Product Lifecycle Management- Driving the Next Generation of Lean Thinking, McGraw-Hill, 2006. ISBN 0071452303
2. **Antti Saaksvuori**, **Anselmi Immonen**, Product Life Cycle Management - Springer, 1st Edition (Nov.5, 2003)
3. **Stark, John**. Product Lifecycle Management: 21st Century Paradigm for Product Realization, Springer-Verlag, 2004. ISBN 1852338105