

MF5018 PRODUCT DESIGN AND DEVELOPMENT

DETAILED SYLLABUS

OBJECTIVES

Understand the application of product design methods to develop a product

UNIT I PRODUCT DEVELOPMENT AND CONCEPT SELECTION

Product development process – Product development organizations- Identifying the customer needs – Establishing the product specifications – concept generation – Concept selection.

UNIT II PRODUCT ARCHITECTURE

Product architecture – Implication of the architecture – Establishing the architecture – Related system level design issues.

UNIT III INDUSTRIAL AND MANUFACTURING DESIGN

Need for industrial design – Impact of industrial design – Industrial design process. Assessing the quality of industrial design- Human Engineering consideration - Estimate the manufacturing cost – Reduce the component cost – Reduce the assembly cost – Reduce the support cost – Impact of DFM decisions on other factors

UNIT IV PROTOTYPING AND ECONOMIC ANALYSIS

Principles of prototyping – Planning for prototypes - Elements of economic analysis – Base case financial model – Sensitivity analysis – Influence of the quantitative factors

UNIT V MANAGING PRODUCT DEVELOPMENT PROJECTS

Sequential, parallel and coupled tasks - Baseline project planning – Project Budget Project execution – Project evaluation- patents- patent search-patent laws International code for patents.

REFERENCES

1. Charles Gevirtz, Developing New products with TQM, McGraw – Hill International editions, 1994
2. Karal .T. Ulrich, Steven D.Eppinger, Product Design and Development, McGRAW-HILL International Editions.2003.
3. S.Rosenthal, Effective product design and development, Irwin 1992.