



PRODUCT DESIGN USING VALUE ENGINEERING

PROF.INDERDEEP SINGH

Department of Mechanical Engineering
IIT Roorkee

TYPE OF COURSE : New | Core_Elective | PG/UG

COURSE DURATION : 4 weeks (29 Jul'19 - 23 Aug'19)

EXAM DATE : 29 Sep 2019

INDUSTRIES APPLICABLE TO : All industries where products are being conceptualized, designed and developed in order to satisfy the human needs and requirements.

COURSE OUTLINE :

It has been established worldwide that the most successful economies are based on innovation and creativity led entrepreneurship. The government is focusing on putting concerted efforts to produce job creators. The current MOOC on Product Design using Value Engineering is conceptualized and planned in such a way that it helps both job creators as well as job seekers. The main objective of the course is to acquaint the learners with the practical knowledge regarding conceptualization, design and development of a new product with a focused Value Engineering Approach. The need of a new product, the product design process, the application of Value Engineering principles in product design process have been discussed in the course. The difference between the concept of Value Engineering and Cost Cutting has been elaborated with examples.

ABOUT INSTRUCTOR :

Dr. Inderdeep Singh is currently working as Associate Professor in Department of Mechanical and Industrial Engineering at Indian Institute of Technology, Roorkee. He has taught among others, the industrial engineering courses such as Production Planning and Control, Product Design and Development, Work System Design, Industrial Management and Quality Management. He has been actively involved in the National Mission Project on Education Through ICT (NME-ICT) of Government of India. He has completed eight video and one web course under the National Programme on Technology Enhanced Learning (NPTEL, MOOCs). He has developed suitable pedagogical methods for two under-graduate courses of Mechanical Engineering.

COURSE PLAN :

Week 1: Introduction to product design and development, Product design steps and Product analysis, Profit consideration, Value Engineering (history, concept and definitions), Value Engineering vs. Cost cutting

Week 2: Creative thinking, Problem identification and VEJP, Types of product functions, Functional analysis, Functional Analysis System Technique (FAST)

Week 3: Function-cost relationship I & II, VE applications in product design, Case study I & II

Week 4: VE tools and techniques I & II, Behavioral roadblocks, VE Success stories I & II