OPERATIONS MANAGEMENT

PROF. INDERDEEP SINGH
Department of Mechanical Engineering
IIT Roorkee

TYPE OF COURSE : Rerun | Core | UG/PG
COURSE DURATION : 12 weeks (18 Jan’21 - 09 Apr’21)
EXAM DATE : 25 Apr 2021

PRE-REQUISITES : Any student enrolled for a UG/PG degree in any discipline of Mechanical Engineering, Production Engineering, BBA, BBM, MBA.

INTENDED AUDIENCE : Interested students
INDUSTRIES APPLICABLE TO : All industries that efficiently produce and deliver goods and services to the customers.

COURSE OUTLINE :
The current competitive business environment is forcing the organizations to adopt the latest tools, techniques and strategies for managing their resources in the most effective and efficient manner. The topics of the course deals with the management of resources and activities that lead to production of goods of right quality, in right quantity, at right time and place in the most cost-effective manner. The course focuses on the basic concepts, issues, and techniques adopted worldwide for efficient and effective operations. The topics include operations strategy, product design and development, forecasting, facility planning and layout, aggregate production planning, capacity planning, project management, production control, materials management, inventory and quality management, JIT and Kanban System.

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 three video and one web course under the National Programme on Technology Enhanced Learning (NPTEL). He has developed suitable pedagogical methods for two under-graduate courses of Mechanical Engineering.

COURSE PLAN :
Week 1: Introduction to Course, Operations Management
Week 2: Product Life – Cycle, Value Engineering Concepts
Week 3: Sales Forecasting, Forecasting System, Qualitative Methods of Forecasting
Week 4: Facility Planning, Factors Affecting Plant Location, Plant Location
Week 5: Facility Layout and Planning, Factors Influencing Plant Layout
Week 6: Production Planning and Control, Process Planning, Aggregate Production Planning
Week 7: Project Scheduling, Network Diagrams, Critical Path Method (CPM)
Week 8: Program Evaluation and Review Technique (PERT), PERT Problems
Week 9: Production Control, Sequencing, Sequencing Problems, Master Production Scheduling (MPS).
Week 10: Concept of Quality, Total Quality Management (TQM), Total Productive Maintenance (TPM), Statistical Quality Control (SQC), Six Sigma.
Week 11: Materials Management, Inventory Control, Economic Order Quantity (EOQ) Models, Economic Order Quantity (EOQ): Problems, Production Quantity Model.