National Institute of Industrial Engineering (NITIE)
(An autonomous body under the Ministry of Education, Govt. of India)

Presents

Online MDP on

"Manufacturing Analytics"

24-27, November 2020

Duration ↦ 20 hours [5 contact hours per day]

Eligibility ↦ Junior & mid-level graduate/diploma engineers with experience in manufacturing industry

Programme Fee ↦ INR 10000 [All inclusive] | **Mode of delivery** ↦ online/web-based

Certificates will be provided on successful completion!

Group concession (for more than 2 participants from same organization) and early bird discount available!

Registration Open! CLICK HERE

Programme Overview

Manufacturing industry in the era of Industry 4.0 is facing phenomenal shift in terms of practices and opportunities. India is a rapidly growing economy with a thrust on manufacturing under "Make in India" and other initiatives. Several researchers and studies have explored the opportunities to improve productivity, reliability, sustainability and profitability of these industries by adopting technologies such as artificial intelligence, data science, robotics and cyber-physical manufacturing. Present-day manufacturing industry generates huge volumes of heterogeneous spatial-temporal industrial data from assets, products, customers and manufacturing/external environment. Facilitating data-driven operational, tactical and strategic decision making and providing information-based-services to various stakeholders of the industry are proven to improve productivity and competitiveness along the supply chain. Large-scale data-driven simulation models and optimization models are found to represent complex dynamic systems in manufacturing setup in real-world which are rudimentary in the development of automated and autonomous manufacturing systems. This course will focus on to unleash the opportunities of optimizing and improving the manufacturing processes using analytical tools and techniques for enhancing the productivity and profitability across manufacturing supply chain thereby driving towards the vision of smart manufacturing. This will be demonstrated through manufacturing case studies that help in creating better plans and shop floor schedules real-time capturing the dynamics of the production system. This also helps to explore several possible combinations of "what-if" scenarios and come up with various configuration designs and alter the manufacturing systems for better flexibility and efficiency. This course also helps operations manager to assess and improve the existing manufacturing practices by diving deep into the multi-stage manufacturing process using analytical models and determining the latent relationships and patterns among several process variables and then optimize the process for better yield and quality.

Contents

- ✓ Introduction to smart manufacturing systems and recent technological advances and current trends in the manufacturing industry
- ✓ Understanding discrete and continuous manufacturing, principles of flow and variability in production environment
- ✓ Understanding uncertainties in multi-stage manufacturing processes and application of advanced data analytics tools to monitor, assess and improve manufacturing processes.
- ✓ Developing simulation models of the manufacturing systems with large-scale dynamic data to design and configure the production line
- ✓ Developing optimization models of production planning and scheduling
- ✓ Developing performance assessment models for monitoring manufacturing systems, processes, operations and assets for real-time condition awareness and system diagnostics
- ✓ Applications of intelligent manufacturing using Artificial Intelligence

Course Coordinators

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