

MAINTENANCE SCHEDULING USING BIG DATA, IOT AND AGENT BASED SIMULATION

MNE007

COURSE DESCRIPTION

It is well known that properly maintaining companies' systems and machines makes failure rates lower and production downtimes seldom and less expensive, however as the maintenance activities are costly, they need to be planned based on the accurate predictions as maintenance based solely on manufacturers manuals are usually not good enough as manufacturers have tested only in the laboratory environments and the environments where the systems are used are much different from the laboratory environments.

With Big Data and IoT maintenance planning and failure rate prediction is now much easier and the companies who use the benefits of these concepts are improving their maintenance schedules, reducing the costs and downtimes therefore winning over their competition.

With the addition of agent based simulation, the machine learning and deep learning algorithms could be expedited and the maintenance predictions made as close to the real life as possible, as we can simulate the behavior of aging assets and new workforce behavior, or the introduction of cutting edge technology to aging workforce, something which is not in the user manuals, but it is omniscient in today's industry.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary understand how accurately to predict and perform maintenance, when and where needed using Big Data IoT and Agent Based Simulation for maintenance scheduling.

COURSE OBJECTIVES

By end of this course participants will be able to:

- Determine the actual maintenance schedules and downtime rates
- Understand what influences the downtimes and breakdowns
- Understand maintenance principles, downtimes and preventive maintenance applications
- Use predictive analytics to optimize asset maintenance
- Apply methods of reducing/minimizing/ optimizing asset life cycle costs
- Take advantage of the Big Data and IoT benefits in maintenance planning and scheduling
- Simulate the influence of changing maintenance schedules on downtimes
- Avoid downtimes through proper use of asset inventories.

WHO SHOULD ATTEND

- Procurement Planners
- Maintenance Planners
- Asset Managers
- Maintenance Managers
- Data Scientists and Data Analysts
- Logistics and Supply Chain Planners
- Other professionals involved in procurement, maintenance and operations of assets.

COURSE DURATION

5 Working Days

COURSE OUTLINES

1. Maintenance Management (planning, Scheduling, and Control)

- Ripple and bullwhip effects on production originating from poor maintenance plans
- Maintenance requirement forecasting, planning and scheduling
- Development of work programs and the maintenance calendar
- Sizing the Maintenance Staff
- Defining and optimizing supply chain process of spare parts in any Logistic

2. Big Data and IoT in maintenance management

- Benefits of IoT for automation of maintenance scheduling and downtime reduction
- Import, analyze and interpret Big Data through predictive analytics for maintenance optimization
- Perform the optimization of maintenance scheduling using any Logic simulation software
- IoT and adaptive maintenance: Integrated data collection

A large, light blue, lowercase sans-serif watermark of the word "arctic" is centered at the bottom of the page.