

INTRODUCTION TO INDUSTRY 4.0

AN INTRODUCTORY COURSE TO
EMPOWER STUDENTS

ARCSTONE

Pte. Ltd., Singapore



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ABOUT THE COURSE

Industry 4.0 Revolution is characterized by the confluence of numerous technologies that come together, producing vast quantity of data. Thanks to these technological advancements, companies are now able to leverage data from multiple sources such as connected machine, equipment, IoT sensors and many others to transform their existing manufacturing processes, gain production efficiency on multiple levels, and realize new business models through the digitalization of their existing business operations.

This course offers students a comprehensive overview of the role of digitalization, Big data, Automation and other related Industry 4.0 technologies, as well as provide a detailed understanding of the Manufacturing Execution System (MES). In particular, we will concentrate on the MES technology and its industrial applications, case studies and how companies can be well-prepared to reap the benefits of digitalization.

Learning objectives

Throughout this course, we will look at how digitalization technologies and data Analytics are used in manufacturing operations and processes, and the different levels of impact it has on production operations.

At the end of this course, students will gain thorough understanding of Manufacturing Execution Systems, the digitalization process from start to finish and the ability to help manufacturers go fully paperless on the production floor. Through lectures from industry experts, students will also have an understanding of how digitalization and Industry 4.0 technologies can be used to build up the production processes of the future, making the students Industry ready.

Relevance for IT Students

Industry 4.0 is highly focused on the Analytics and you may choose to try hands-on Analytics relevant for Industry tool-set with Arcstone's guidance.

Pre-requisites

Nil. No prior technical background is required.

Learning outcomes

Knowledge and understanding

- (i) Digitalization and digital transformation concepts in the age of Industry 4.0
- (ii) Overview of transformative and disruptive potential of new technological developments
- (iii) Overview of digitalization toolsets and hands on experience on Arcstone's arc.lite software solution to help digitalize and optimize production operations

Applying knowledge and understanding

- (i) Development of practical skills in applying Arcstone's arc.lite toolset to support local manufacturers to drive their internal transformation goals
- (ii) Foundational understanding of strategic roadmap for how companies can apply technology at strategic, tactical and operational levels
- (iii) The basics of data Analysis and metrics building for production visibility, control and optimization.

Learning content

This Course comprises of 08 comprehensive learning Modules. Each module has multiple sections. Most modules consist of lectures supplemented by case studies and/or assignments.



COURSE EVENT

CONTENTS

Class 1

Module 1:

- Introduction to Manufacturing Execution System (MES)
- MES implementation and deployment best practice
- MES architecture

Class 2

Module 2:

- Create personnel, qualification
- Create asset management, qualification
- Build inventory item type, inventory item, customers, unit of measurements

Class 3

Module 3:

- Introduction to Workflow Builder

Class 4

Module 4:

- Introduction to Sales Scheduling, Job Scheduling
- Overview of Workstation and Dashboard
- Assignment briefing part 1 – Create workflow in *arc.lite*(TM)

Class 5

Module 5:

- Basic SQL use

Class 6

Module 6:

- Database structure

Class 7

Module 7:

- Dashboard training
- Assignment briefing part 2 – Create dashboard for workflow

Class 8

Module 8:

- Assignment Briefing part – Designing your own workflow
- Deployment Project briefing

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