

# Lean Manufacturing for Job Shops Course Outline

## UNIT 1 ADAPTING LEAN TO JOB SHOPS

### Lesson 1 | Does Lean Really Apply?

- Appreciate the Realities that Job Shops must contend with.
- Be aware of the consequences of those Realities.
- Realize that Lean approaches can be modified and adapted to deal with Job Shop Realities.

### Lesson 2 | Lean Job Shop Terminology

- Define key Lean manufacturing terms.
- Describe vital Lean tools.
- Be familiar with additive Lean techniques.

### Lesson 3 | Wastes in Job Shop Terms

- Identify the seven wastes.
- Explain value-adding versus non-value adding.
- Define value from the customer's perspective.
- Briefly describe how each of the seven wastes detracts from the value of a process' output.

### Lesson 4 | Linking Realities to Wastes

- Associate Job Shop Realities with the Seven Wastes.
- Uncover patterns of how the effects of Job Shop Realities lead to Waste.
- Discover common themes of the effects and the corresponding impact on Waste.
- Recognize potential root causes of the common themes.

### Lesson 5 | Preview of the Means

- Understand that Lean practices can be adapted to a Job Shop environment by developing a compelling Message, building Momentum and making structural changes (the Means.)
- Become aware that the Means can be a combination of the 5S's, Set-up Reduction, Workflow/Layout adjustments, TPM and Visual Workplace practices.

### Unit 1 Challenge

- An assessment of the learner's progress in this unit.

## UNIT 2 LEAN JOB SHOP PRACTICES

### Lesson 1 | Message, Momentum and Means

- Become familiar with how a three-phased approach (Message, Momentum and Means) can be used to adapt Lean practices to a Job Shop environment.
- Understand how the "Means" represent a series of interdependent action plans creating a robust approach to Lean.

### Lesson 2 | Embrace the 5S's

- Identify what each of the 5S's stands for and how it helps an organization reduce waste.
- Understand the tactics/techniques to "sort" by determining what belongs and what does not belong in a work area.
- Explain the rationale for effective storage locations.
- Describe what it means to standardize and why standardization is important.
- Identify strategies to sustain workplace organization and to prevent backsliding.

## Lesson 3 | Reduce Set-Up Time

- Describe the purpose and benefits of reducing set-up time.
- Explain the difference between internal and external set-up time.
- Identify the key components of set-up reduction and explain the role each plays in reducing set-up time.

## Lesson 4 | Adjust Workflows and Layouts

- Explain the linkage between layouts and workflows.
- Describe why identification of Product Families is an important step for improving layouts and subsequent workflows.
- Understand types of data needed to design effective layouts and workflows.
- Identify major issues for selecting layout and corresponding Macro-Workflow from various options.
- Understand factors to be considered to refine Micro-Workflows.

## Lesson 5 | TPM Basics

- Explain how TPM aids Lean efforts and addresses wastes.
- Know the difference between Corrective Maintenance , Preventive Maintenance (PM) and Predictive Maintenance (PdM).
- Understand how the three sequential Phases of TPM build on each other.
- Realize how PdM techniques can further traditional PM practices.

## Lesson 6 | The Visual Workplace

- Describe what is meant by the Visual Workplace.
- Understand the meaning of Visual Controls, Prompts and Displays.
- Appreciate how powerful visual aids, supports and alerts can be to make it easier to do things the right way and reduce waste.

## Lesson 7 | Track and Improve

- Understand why it is important to measure the progress of action plans.
- Be familiar with potential measures for Lean Job Shop action plans.

## Unit 2 Challenge

- An assessment of the learner's progress in this unit.