

## LEAN PROCESS PRINCIPLES AND SIX SIGMA (WHITE BELT)

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| <b>Duration:</b>      | <b>2 days</b>                                |
| <b>Target:</b>        | <b>Operator level and higher</b>             |
| <b>Prerequisite:</b>  | <b>Minimum Grade 12</b>                      |
| <b>NQF Info:</b>      | <b>Non-NQF aligned</b>                       |
| <b>Certification:</b> | <b>Plastics SA Certificate of Competence</b> |

### Objectives of the Overview

The programme will give participants the foundation to begin implementing Lean Process improvement tools in their workplace. Six Sigma is management methodology driven by data while reducing waste. It focuses on projects that will produce measurable business results. The central idea behind Six Sigma is that if you can measure how many 'defects' you have in a process, you can systematically determine how to eliminate those and approach 'zero defects'.

### Outcomes

*At the end of the programme, you will*

- define Lean and its key terms
- describe the Toyota Production System and the TPS house; use the Kano model
- identify and reduce various types of waste
- use Lean thinking frameworks, including 5W-WH, Genchi Genbutsu and Gema; prepare for and complete a basic 5-S
- describe the key elements of Kaizen events, particularly a Kaizen blitz
- gather, analyse and interpret data using flow charts, Ishikawa (fishbone) diagrams, SIPOC diagrams and value stream maps
- go back to your organization with a plan to begin incorporating Lean into your corporate culture.
- describe the five critical improvement concepts; create a plan for a more environmentally Lean organization
- use the PDSA and R-DMAIC-S models; use a structured, data-driven process of solving critical issues from a business perspective that we haven't been able to solve before
- use the DMAIC models
- target measures Defects per Million Opportunities (DPMO). Six Sigma equates to 3.4 defects per million opportunities

### Contents

- Understanding Lean and creating a Lean enterprise; Lean thinking tools ; understanding value with the Kano Model
- The Toyota Production System and the TPS House
- Types of waste
- Kaizen events; 5S, Poke-Yoke...
- The Plan, Do, Study, Act (PDSA) cycle; using the R-DMAIC-S model
- Data gathering and mapping; a plan to take home
- Project Team Charter; process mapping and value stream mapping
- Descriptive statistics; correlation and regression analysis; design of experiments; ; statistical process control
- Failure Mode and Effects Analysis (FMEA); Measurement Systems Analysis (MSA)

### Certification

A Plastics|SA Certificate of Competence is issued to successful candidates.