
Postgraduate Certificate in Aerospace Lean Six Sigma

Sustainability and Continuous Improvement

Sustainability

Sustainability refers to the ability to maintain or endure a certain process or state over time without causing harm to the environment, society, or economy. In the context of aerospace Lean Six Sigma, sustainability is about ensuring that improvements made to processes or products are maintained and continue to deliver value in the long term.

Continuous Improvement

Continuous Improvement, also known as Kaizen in Japanese, is a fundamental principle of Lean Six Sigma that focuses on making ongoing small, incremental changes to processes in order to improve quality, efficiency, and customer satisfaction. It involves identifying opportunities for improvement, implementing changes, measuring results, and then repeating the cycle to make further improvements.

5S

5S is a Lean methodology focused on organizing the workplace to improve efficiency and effectiveness. The five S's stand for Sort, Set in Order, Shine, Standardize, and Sustain. By implementing 5S, organizations can create a clean and organized work environment that minimizes waste and maximizes productivity.

8 Wastes

The 8 Wastes, also known as DOWNTIME, are the eight types of waste that can occur in a process: Defects, Overproduction, Waiting, Non-utilized Talent, Transportation, Inventory excess, Motion waste, and Excess processing. Identifying and eliminating these wastes is a key goal of Lean Six Sigma to improve efficiency and reduce costs.

Andon

Andon is a visual management tool used in Lean manufacturing to signal when a problem occurs in a process. It typically involves a light or display that alerts workers to stop production and address the issue immediately, helping to prevent defects and improve quality.

Black Belt

Black Belt is a certification level in Six Sigma that signifies a high level of expertise in the methodology. Black Belts are typically responsible for leading and implementing Lean Six Sigma projects within an organization, driving improvements, and mentoring Green Belts and team members.

Bottleneck

A bottleneck is a point in a process where the flow of work is impeded, causing delays and inefficiencies. Identifying and removing bottlenecks is essential in Lean Six Sigma to improve overall process performance and reduce cycle times.

Control Chart

A Control Chart is a statistical tool used in Six Sigma to monitor process performance over time. It displays data points plotted against control limits to determine if a process is in control or if there are variations that need to be addressed to maintain quality.

Cycle Time

Cycle Time is the total time it takes to complete a process, from start to finish. In Lean Six Sigma, reducing cycle time is a key objective to improve efficiency and customer satisfaction by eliminating delays and waste in the process.

Defect

A Defect is any deviation from the customer's requirements or specifications in a product or service. Identifying and eliminating defects is a primary goal of Six Sigma to improve quality and customer satisfaction.

Design for Six Sigma (DFSS)

Design for Six Sigma (DFSS) is a methodology used to develop new products or processes that meet customer requirements and are defect-free from the start. DFSS focuses on understanding customer needs, identifying critical parameters, and designing processes that can consistently deliver high-quality results.

Fishbone Diagram

A Fishbone Diagram, also known as a Cause and Effect Diagram, is a visual tool used in Six Sigma to identify and analyze the root causes of a problem. It helps teams to brainstorm potential causes and organize them into categories to determine the underlying issues affecting a process.

Green Belt

Green Belt is a certification level in Six Sigma that signifies a basic understanding of the methodology and tools. Green Belts typically lead smaller improvement projects within an organization under the guidance of Black Belts, focusing on specific process improvements and problem-solving.

Just-in-Time (JIT)

Just-in-Time (JIT) is a Lean manufacturing strategy that aims to produce goods or deliver services exactly when they are needed, in the right quantity, and at the right quality. JIT helps to minimize inventory, reduce waste, and improve efficiency by synchronizing production with customer demand.

Kaizen

Kaizen is a Japanese term that means continuous improvement. It is a core principle of Lean manufacturing and Six Sigma, focusing on making small, incremental changes to processes to achieve better results over time. Kaizen encourages a culture of continuous learning, problem-solving, and innovation within an organization.

Kanban

Kanban is a visual scheduling system used in Lean manufacturing to control the flow of work and materials in a process. It involves using cards or signals to signal when to produce or move items, helping to reduce inventory, improve efficiency, and eliminate waste.

Lean

Lean is a methodology focused on maximizing customer value while minimizing waste in processes. Lean principles, such as value stream mapping, 5S, and Just-in-Time, aim to improve efficiency, quality, and productivity by eliminating non-value-added activities and streamlining processes.

Pareto Analysis

Pareto Analysis, also known as the 80/20 rule, is a statistical technique used in Six Sigma to prioritize problems or issues based on their impact. The analysis shows that a small number of causes (20%) typically account for the majority of problems (80%), helping teams to focus on the most critical issues first.

Root Cause Analysis

Root Cause Analysis is a systematic process used in Six Sigma to identify the underlying reasons for a problem or defect. By digging deeper into the root causes of issues, teams can develop effective solutions to prevent recurrence and improve overall process performance.

SIPOC

SIPOC is an acronym that stands for Suppliers, Inputs, Process, Outputs, and Customers. It is a tool used in Six Sigma to define and map out the high-level process flow, identifying key stakeholders and their roles in delivering a product or service to the customer.

Standard Work

Standard Work is a Lean concept that involves documenting the best practices for a process to ensure consistency and quality. By establishing standard work procedures, organizations can reduce variation, improve efficiency, and provide a baseline for continuous improvement efforts.

Value Stream Mapping

Value Stream Mapping is a Lean tool used to visualize and analyze the flow of materials and information in a process. By mapping out the current state and future state of a process, teams can identify opportunities for improvement, eliminate waste, and streamline operations to deliver more value to the customer.

Voice of the Customer (VOC)

Voice of the Customer (VOC) is a term used in Six Sigma to describe the needs, expectations, and preferences of the customer. By capturing the VOC through surveys, interviews, and feedback, organizations can align their processes and products to meet customer requirements and improve satisfaction.

Waste

Waste, in the context of Lean Six Sigma, refers to any activity or process that does not add value to the customer. The 8 Wastes, such as overproduction, waiting, and defects, are common types of waste that organizations seek to eliminate to improve efficiency, quality, and profitability.