# Problem solving and root-cause analysis

**A training course about systematic improvement methodology and basic problem-solving tools**

This training course introduces methods and tools that are most important when solving problems and working with continual improvements. The course is based om the Six Sigma DMAIC model and the participants learns how to solve problems and implement the solutions needed to achieve good results. We focus on how to identify, define, understand and solve problems and how to implement, control and follow up solutions in both manufacturing and service organizations. This course gives a Six Sigma Yellow Belt level. What the participants learn is also suitable for basic problem solving in other improvement concepts like Lean, TQM, Kaizen and 8D.

Problem solving methodology and use of effective tools are of great importance to success when working with continual improvements. Important steps in this work are define and scoop problems, identify root causes, find, test and implement solutions, follow-up improvements etc. The Six Sigma DMAIC is the most common model used in this work. It is also critical to have a solid knowledge base over problem-solving methods and QC-tools.

## Purpose
To provide the knowledge and ability to apply effective methods and basic tools used in continual improvements and problem solving.

The course offers a Yellow Belt diploma in Six Sigma.

## Aimed at
Persons that take part in, or will take part in, problem solving and improvement teams.

## General information
Parallel to the course problem-solving projects are carried by the participants in smaller groups with the purpose to develop competence and exchange experiences.

The lectures will be led by consultants from Sandholm Associates.

## Documentation
Participants will receive relevant course material which will serve as a useful reference after the course.

## Length
3 days divided in three blocks.

## Place
Online

## CONTENT ➔

**Main parts of the training course *Problem solving and root-cause analysis*:**

- Quality and continual improvements
- Poor quality costs and financial effects of improvement work
- Methods for problem solving – DMAIC, PDCA and 8D
- Project management for problem solving projects
- Define a problem and set a scope
- Identifying business case
- Specifying goals and defining voice of the customer
- Analyzing processes and understanding the actual situation
- Data collection and fact-based analysis
- Root-cause analysis
- QC-tools
- Identification and testing of remedies
- Implementation of solutions
- Basic change management
- Controlling and follow-up improvements
- Reporting improvements

# Course schedule – Continual improvements and problem solving

We start with an introduction to quality and continual improvements. We learn about organization, roles, and responsibilities of improvement work. Methodology and strategies for identifying and prioritizing good improvement projects are discussed. During this course we focus on Six Sigma's problem-solving model DMAIC, but we also learn how to use PDCA and 8D. We start with learning how to define, scope, and limit a problem, how to develop a business case, how to identify customer needs, and how to study problem-related processes with SIPOC (Suppliers, Inputs, Outputs, Customers). We also discuss basic project management, with focus on leading and planning problem-solving projects.

We proceed to the Measure phase of the DMAIC-model and show how to identify critical measurable variables, design a measuring system, plan the measuring work, and perform measuring. Then we learn problem solving methodology and cover the Analyse phase. We focus on basic problem solving and root cause analysis. In this work we introduce many of the basic problem-solving tools. We also discuss other problem-solving strategies like innovative problem solving and techniques to solve human controllable failures.

During this course we also focus on the Improvement phase of the DMAIC-model and learn how to implement solutions and take action. Part of this is also to lead change. Finally, the participants learn the Control phase and we discuss how to ensure and maintain implemented solutions and how to follow up, report and communicate final results of an improvement project.