

Root Cause Analysis & Problem Solving Tools

Professional Training Course

Skillslab Training Provider

Skills for Tomorrow's World 



Course Description

Introduction

In complex organizations, recurring problems rarely disappear through quick fixes, temporary corrections, or symptom-based responses. Equipment failures, service disruptions, quality defects, operational delays, customer complaints, process inefficiencies, safety incidents, and performance gaps often continue because the underlying causes have not been accurately identified and permanently addressed.

The Root Cause Analysis & Problem Solving Tools training course provides professionals and decision-makers with a structured, evidence-based approach to investigating problems, identifying root causes, developing effective solutions, and preventing recurrence. The program equips participants with practical problem-solving methods, analytical techniques, cause-and-effect tools, data-driven investigation approaches, corrective action planning, and solution verification practices.

Designed for government entities, ministries, public sector organizations, large corporations, industrial operations, service providers, utilities, and executive professionals, this advanced course moves participants beyond assumptions and immediate reactions. Participants will learn how to define problems accurately, gather reliable evidence, distinguish symptoms from causes, analyze contributing factors, prioritize root causes, select sustainable solutions, and establish effective preventive controls.

The executive-level value of this course lies in its ability to improve organizational decision-making and reduce the financial, operational, and reputational impact of recurring problems. By developing disciplined problem-solving capabilities, organizations can reduce repeated failures, strengthen operational reliability, improve quality and service performance, reduce waste and downtime, and build a culture of accountability and continuous improvement.

Course Objectives

This course is designed to enable participants to:

- Understand the strategic importance of root cause analysis and structured problem-solving.
- Distinguish symptoms, immediate causes, contributing factors, and root causes.
- Define problems clearly and accurately before beginning an investigation.
- Collect and evaluate reliable evidence.
- Apply structured analytical tools to complex and recurring problems.
- Identify relationships between causes and effects.
- Avoid assumptions, bias, and premature conclusions.
- Prioritize root causes according to evidence and operational impact.
- Develop effective corrective and preventive actions.
- Evaluate alternative solutions before implementation.
- Verify whether implemented solutions have eliminated the problem.
- Prevent recurrence through control, monitoring, and standardization.
- Build practical problem-solving capabilities across teams and departments.

Course Content

Day 1: Structured Problem Solving and Root Cause Analysis Fundamentals

- Understanding the nature of organizational problems.
- The strategic value of effective problem-solving.
- The difference between symptoms and root causes.
- Immediate, contributing, underlying, and systemic causes.
- Why recurring problems continue despite corrective actions.
- The risks of assumption-based problem-solving.
- Understanding simple, complicated, and complex problems.
- Defining the scope and boundaries of an investigation.
- Writing clear and evidence-based problem statements.
- Separating facts, opinions, assumptions, and interpretations.
- Identifying stakeholders and affected processes.

- Establishing investigation priorities.
- Understanding the structured problem-solving cycle.
- Common reasons root cause analysis investigations fail.
- Practical exercise: converting unclear issues into precise problem statements.

Day 2: Data Collection, Evidence Analysis, and Problem Investigation

- The role of evidence in effective problem-solving.
- Identifying the information required for an investigation.
- Collecting reliable operational and performance data.
- Using interviews, observations, records, and system data.
- Establishing the sequence and timeline of events.
- Identifying what changed before the problem occurred.
- Comparing normal and abnormal operating conditions.
- Understanding patterns, trends, and recurring conditions.
- Separating correlation from actual causation.
- Evaluating the reliability and relevance of evidence.
- Recognizing missing information and investigation gaps.
- Using process mapping to understand where failures occur.
- Identifying deviations from expected processes and standards.
- Building an evidence-based investigation record.
- Practical workshop: conducting a structured problem investigation.

Day 3: Root Cause Analysis Tools and Analytical Techniques

- Applying structured questioning techniques.
- Using repeated cause questioning to investigate deeper causes.
- Developing cause-and-effect analysis.
- Categorizing potential causes systematically.
- Using fault tree analysis for complex failures.

- Applying barrier analysis to control failures.
- Understanding event and causal factor analysis.
- Using frequency analysis to prioritize recurring problems.
- Applying comparative analysis to identify significant differences.
- Identifying human, process, equipment, system, and management factors.
- Understanding the interaction between multiple contributing causes.
- Testing potential causes against available evidence.
- Eliminating unsupported assumptions.
- Prioritizing the most significant root causes.
- Practical workshop: applying multiple root cause analysis tools to a complex case.

Day 4: Solution Development and Corrective Action Planning

- Moving from root cause identification to effective solutions.
- The difference between correction and corrective action.
- Developing solutions that address verified causes.
- Avoiding solutions that only treat symptoms.
- Generating multiple solution alternatives.
- Evaluating effectiveness, feasibility, cost, risk, and sustainability.
- Selecting solutions based on evidence and expected impact.
- Developing corrective and preventive actions.
- Assigning responsibility and implementation priorities.
- Managing dependencies between corrective actions.
- Identifying possible unintended consequences.
- Testing proposed solutions before full implementation.
- Developing monitoring and verification requirements.
- Establishing escalation mechanisms for unresolved problems.
- Practical workshop: developing a complete corrective action plan.

Day 5: Verification, Prevention, and Organizational Problem-Solving Excellence

- Verifying whether corrective actions have solved the problem.
- Measuring performance before and after implementation.
- Distinguishing temporary improvement from permanent resolution.
- Monitoring for recurrence.
- Establishing preventive controls.
- Standardizing successful solutions.
- Updating procedures, processes, and operating practices.
- Capturing and sharing lessons learned.
- Preventing similar problems in other departments or locations.
- Developing problem-solving performance indicators.
- Reviewing the quality of root cause investigations.
- Building cross-functional problem-solving teams.
- Strengthening leadership support for evidence-based investigation.
- Creating a culture of learning rather than blame.
- Integrating root cause analysis with continuous improvement.
- Final workshop: completing a full root cause analysis and problem-solving action plan.

Target Audience

This course is designed for professionals responsible for operational performance, quality, reliability, safety, service delivery, risk, and continuous improvement, including:

- Operations managers and supervisors.
- Quality managers and specialists.
- Maintenance and reliability professionals.
- Engineers and technical specialists.
- Process improvement professionals.
- Operational excellence specialists.

- Health and safety professionals.
- Risk management professionals.
- Project and program managers.
- Production and manufacturing professionals.
- Service delivery managers.
- Business process professionals.
- Internal auditors.
- Compliance professionals.
- Team leaders and department heads.
- Government and public sector professionals.
- Executives responsible for organizational performance and improvement.

Course Requirements

Participants should have a general understanding of organizational operations, quality, maintenance, engineering, risk, safety, service delivery, process management, or performance improvement.

Previous experience in root cause analysis is beneficial but not mandatory. Participants are encouraged to bring examples of recurring problems, operational failures, customer complaints, quality issues, equipment failures, process delays, or unresolved performance gaps for use during practical discussions and workshops.

Training Methodology

The course uses an interactive, practical, and investigation-focused training methodology designed to develop real-world problem-solving capabilities.

The training methodology includes:

- Expert-led presentations and guided discussions.
- Real-world root cause analysis case studies.
- Problem definition exercises.
- Evidence collection and investigation activities.
- Cause-and-effect analysis workshops.

- Structured questioning exercises.
- Fault and failure analysis scenarios.
- Individual and group problem-solving activities.
- Corrective action development.
- Solution evaluation exercises.
- Investigation review and verification activities.
- Workplace implementation planning.

The methodology ensures that participants not only understand root cause analysis and problem-solving tools but can also apply them systematically to complex organizational problems and recurring failures.

Learning Outcomes

By the end of this course, participants will be able to:

- Define problems clearly and accurately.
- Distinguish symptoms from underlying root causes.
- Plan and conduct structured investigations.
- Collect and assess reliable evidence.
- Develop accurate timelines and sequences of events.
- Apply multiple root cause analysis tools.
- Identify direct, contributing, and systemic causes.
- Test possible causes against evidence.
- Avoid bias, assumptions, and premature conclusions.
- Prioritize root causes according to impact and evidence.
- Develop effective corrective and preventive actions.
- Evaluate and select sustainable solutions.
- Verify the effectiveness of implemented actions.
- Prevent recurrence through monitoring and standardization.
- Lead structured problem-solving initiatives across teams and departments.

Instructor Profile

An internationally certified expert with extensive practical and consulting experience.

The instructor brings extensive expertise in root cause analysis, structured problem-solving, operational excellence, quality improvement, reliability, failure investigation, risk management, corrective action systems, and organizational performance improvement across complex public and private sector environments.

The course delivery combines strategic insight with practical investigation experience, enabling participants to understand not only how root causes should be identified, but also how effective solutions can be implemented, verified, and sustained within real organizations.

Contact Us

For registration inquiries, upcoming dates, or group pricing, please contact us:

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