A3 Problem Solving in Manufacturing, Utilities, Operations & Engineering

(2 CPD points)

About this Course

This 2 – day course is validated by the Southern African Institute for Industrial Engineering and introduces delegates to the key principles of problem solving and the A3 methodology. You will learn how to execute each step in the problem solving process and how these steps work together. Includes techniques which assist in better defining problems, conducting root cause analysis, developing, choosing, and implementing solutions, evaluating the results, and deciding on further action.

Who Should Take this Course?

This course is aimed at individuals in the manufacturing, utilities, operations, and engineering disciplines who wish to improve their problem solving skills. The course is filled with exercises and examples from industry, making it practical and relatable.

This course is suitable for those who have an NQF3 qualification or higher. It is aimed at those involved in core operations or technical support roles, including operators, artisans, supervisors, planners, technicians, technologists, engineers, production managers, quality managers, engineering managers and logistics managers.

10 Modules
Packed with examples and exercises with templates provided
Includes full-colour training manual

2- Day Online Course
Live via ZOOM

Presented by Craig van Wyk

2-Year complimentary access to www.learn2solveproblems.com to reinforce learning

R5,499/Person (excl. VAT)

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What you will learn

MODULE 1: PROBLEM SOLVING FUNDAMENTALS

- Broadly describe the flow of resources in the supply chains of manufacturing, utilities, operations, and engineering organisations
- Describe the 8 different types of waste
- Name and describe typical performance areas
- Explain what constitutes a “problem” in the manufacturing & operations environment
- Explain the difference between a problem and a deviation
- Explain how problems are detected
- Explain why the time taken to detect problems is important
- Explain what is meant by the terms “possible cause”, “probable cause” and “prevalent cause”
- Explain what is meant by the term “root cause”
- Explain what a “solution” to a problem is
- Explain how solving a problem is different to correcting a problem
- Explain the concept of continuous improvement and how problem solving supports it
- Describe the Plan Do Check Act cycle and how it is applied in practice
- Outline the benefits of problem solving
- Explain who is accountable for problem solving
- Explain when and how to escalate problems that you are unable to solve
- Describe the characteristics of an effective problem solving team

MODULE 2: AN OVERVIEW OF A3 PROBLEM SOLVING

- Explain the need for an overarching problem solving framework
- Understand the principles behind A3 Thinking as applied to Problem Solving
- Describe the 8 key steps in A3 Problem Solving
- Explain how an A3 Record Sheet is used in practice

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MODULE 3: STATING THE PROBLEM

- Explain the importance of defining a problem using the problem statement
- Develop, test, and improve problem statements using the FOCUS-Q ruleset
- Appreciate the wider role of problem statements in the problem solving process

MODULE 4: ANALYSING THE PROBLEM

- Explain why we need to analyse the problem
- Understand how to gather data for analysing the problem
- Apply the "4W-E" method when defining the problem
- Apply the "Is/Is-Not" approach when defining the problem
- Refine the problem statement further after analysing the problem

MODULE 5: MEASURING THE PROBLEM

- Identify all performance areas relevant to an individual problem e.g., Cost, Quality, Delivery, Safety, Morale, Environment
- Categorise an individual problem according to its dominant Performance Area
- Decide on an appropriate Performance Measure with which to measure an individual problem
- Decide on appropriate Units of Measurement for the Performance Measure chosen
- Express current performance in terms of the chosen Performance Measure and Units of Measurement
- Set an appropriate target
- Determine the gap between the target and current performance

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MODULE 6: FINDING THE ROOT CAUSE OF THE PROBLEM

- Explain the concept of root cause analysis
- Apply the concept of Fundamental Possible Causes
- Explain how to ensure that each possible cause identified is independent of the others
- Use 5-WHY analysis to identify possible causes and the root cause of a problem
- Explain the concept of "line of sight" when identifying root causes
- Summarise the desirable characteristics of a root cause
- Display the 5-Why technique in graphical format

MODULE 7: DEVELOPING AND CHOOSING SOLUTIONS

- Describe, in generic terms, the different types of solutions encountered in manufacturing, utilities, operations and engineering
- Apply brainstorming for solution development
- Explain how experiments can be used to develop solutions
- Conduct a risk assessment on a solution
- Describe the tasks associated with detailed solution design
- Explain how to determine the effort and benefit characteristics of solutions
- Use the Effort-Benefit Chart to choose the most appropriate solution

MODULE 8: IMPLEMENTING SOLUTIONS

- Explain the different phases of solution implementation
- Understand how to complete the implementation record on an A3 problem solving record sheet

MODULE 9: EVALUATING IMPLEMENTED SOLUTIONS AND DECIDING ON NEXT STEPS

- Explain why it is necessary to evaluate the performance of implemented solutions
- Evaluate an implemented solution
- Decide on how to react if a solution does not solve a problem
- Decide on how to react when a solution is effective
- Explain how organisations learn from each problem solving event

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MODULE 10: RECORDING AND INTEGRATING THE A3 PROBLEM SOLVING PROCESS

- Describe the purpose of each element of an A3 Problem Solving Record Sheet
- Complete each section of an A3 Problem Solving Record Sheet when performing problem solving
- Explain the links between different elements of the A3 record sheet
- Ensure that the individual elements of the A3 Problem Solving Record Sheet are integrated and aligned

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Who facilitates this course?

This course is facilitated by Craig van Wyk, Founder of Learn2SolveProblems.com.

Craig has a B.Sc.(Eng.) in Chemical Engineering from UKZN and an MBA (with distinction) from the Wits Business School. He has extensive industrial experience as a process engineer, executive manager and consultant and has worked with over 120 industrial sites in 8 provinces across South Africa and with clients abroad.

Craig has developed and facilitated numerous problem solving training and coaching programmes for clients such as PepsiCo, DCD Ring Rollers, MANTurbo, Amka Products, Leghorn Products, All Hair Africa, Coca-Cola Canners, and Revlon, among others.

Where will you learn?

This course is facilitated online using the ZOOM platform, so you will be learning from the comfort of your home or office environment. Participants will need a computer, a high-speed internet connection and to have downloaded a free version of ZOOM.

What else do learners receive?

Participants receive a full-colour training manual, templates, and complimentary access to Learn2SolveProblems.com for a minimum period of 2 years. This gives each candidate access to all on-line courses and resources available on the platform and to material directed only at this learner group, such as quizzes linked to the classroom training. All attendees can download a Certificate of Attendance from the site. Those who successfully complete the quiz will be able to download a Certificate of Completion.

This course is validated by the Southern African Institute for Industrial Engineering and has validation number: SAIIE/CPD/P/02/21.

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