

Course ID
TRIZ5DA
Course Duration
5 days

Course Title
**TRIZ Certification Workshop Advanced: With Optional
MATRIZ Certification Testing**

**Related
Courses**

- TRIZ Workshop Expert: With Optional MATRIZ Certification Testing (TRIZ5DE, 5 days)
- TRIZ for Systematic Innovation (TRIZ3D, 3 days)
- Innovate with TRIZ: Contradiction Analysis (UEC-TRIZ, 2 days)
- Unleashing Engineering Creativity (ENG-CREATE, 2 days)
- Unleashing Engineering Creativity - Comprehensive (ENG-CREATE3, 3 days)

Aimed At

TRIZ Certification Workshop Advanced is for Engineers (all disciplines), designers, strategists, and others charged with creating innovative products, processes, systems, or services as well as those who work with them or manage their work.

Prerequisites

- TRIZ Workshop Basic: With Optional MATRIZ Certification Testing (TRIZ5DB, 5 days)
- An engineering, design/development, manufacturing, or technical background. However, we will be glad to tailor the course to other audiences.

**Course
in a Nutshell**

TRIZ is the premier problem deconstruction, innovation, and solution generation methodology based on a 75-year study of 4+ million global patents. This advanced workshop will help you expand your application of TRIZ to the more complex processes including: Detailed system process analysis and innovation, product design and advancement, manufacturing (or other process) improvement, and other areas that require innovating systems of interacting components, whether it be a water valve assembly or a quantum computing engine.

Upon completion of *TRIZ Certification Workshop Advanced*, you will be able to apply scientific effects in solving problems, functionally analyze complex processes and increase the value of those process through system trimming, identify other applications of their technologies in seemingly unrelated areas, execute feature transfer by way of advanced applications, model and solve system problems as substances and fields, utilize the method of ARIZ, utilize empathy (smart little people) to solve technical problems, analyze systems using the 9- Windows of time and space, understand system value in relation to the S-curve

and other trends, and utilize TRIZ within Lean and 6-Sigma. The International TRIZ Association (MATRIZ) certification, recognized worldwide, is available.

Customize It!

Whatever the nature of your systems, processes, products, or services, we will customize *TRIZ Certification Workshop Advanced* to meet your specific goals. Here are some of the ways in which we can tailor the course to help you get more out of it:

- Bring your own projects to class and work on them in teams.
- Add ‘deep dive days’ at the end of or a few weeks after the class to work on solution generation for challenges specific to your organization under the guidance of a TRIZ expert.
- Add/remove topics or shorten/lengthen the workshop to suit your needs.
- Schedule post-class follow-up consultation for continuing your in-house TRIZ implementation.

Learn How To

- Work together as a team to understand and implement the TRIZ concepts and techniques.
- Apply scientific effects in improving systems
- Functionally analyze and trim system processes
- Look for other applications of the systems (within the work environment or the marketplace)
- Utilize feature transfer in special cases such as multi-step and processes as alternative systems
- Model systems as substances and fields and apply the proven standards for resolving issues in those systems
- How to initially use ARIZ to tackle very challenging issues
- Utilize empathy (smart little people) to solve technical problems
- Understand your systems and their resources across time and space
- Understand the details of how system value advances in relation to the S-curve and other trends
- Utilize TRIZ within Lean and 6-Sigma

TRIZ Certification Workshop Advanced - Day 1: Innovation Methods Comparison, Process Function Analysis and Trimming for Processes.

- **Innovation Methods Comparison.** Compares: Brainstorming, Synectics, Morphological Analysis, and TRIZ.
- **Process Function Analysis.** Process Function Analysis supports the creation and analysis of a function model of a process. The model includes the Function contribution of each operation and corresponding costs, function type and performance.

Group activities: Practice performing a process analysis on a selected sequence of events of your choice (brushing teeth, changing a tire, work process, etc.).

- **Trimming for Processes.** An analytical tool for removing (trimming) certain operations from a process and redistributing their useful functions among the remaining operations of the process.

TRIZ Certification Workshop Advanced - Day 2: Trimming for Processes (continued). Inverse Function Oriented Searching and Feature Transfer Details.

- **Trimming for Processes (continued).**

Group activities: Practice performing a process trimming on your selected process analysis (brushing teeth, changing a tire, work process, etc.).

- **Inverse Function-Oriented Searching.** Learn how to apply an analytical tool that identifies new potential areas of application for an existing technology.

Group activities: Practice performing an inverse function-oriented search on a technology of your choice (block chains, self-driving cars, IR goggles, etc.)

- **Feature Transfer Details.** Learn to apply feature transfer for non-standard applications to include multi-step feature transfer, processes as alternative systems, physical system integration and feature transfer, and for mixtures.

TRIZ Certification Workshop Advanced - Day 3: Standard Inventive Solutions & Su-field Analysis.

- **Standard Inventive Solutions & Su-field Analysis.** Learn to create substance-field (su-field) models of selected component interactions and apply the set of 76 typical solutions, in the form of su-field models, to improve their interaction(s).

Group activity: Create su-filed model for your class project.

TRIZ Certification Workshop Advanced - Day 4: Standard Inventive Solutions & Su-field Analysis (continued).

- **Standard Inventive Solutions & Su-field Analysis (continued).**

Group activity: Apply standard inventive solutions to your su-field model(s).

TRIZ Certification Workshop Advanced - Day 5: Introduction to ARIZ, Smart Little People, 9-Windows, Relationships between Ideality, S-curve and TESE and TRIZ Relation to Lean and 6-Sigma.

- **Introduction to ARIZ.** Learn the initial steps to a problem-solving tool that transforms a complex engineering situation into a well-defined model of the problem and which can then be solved effectively using a wide spectrum of TRIZ tools. ARIZ is the Russian acronym for Algorithm for Inventive Problem Solving.

Group activity: Perform Steps 1-3 of ARIZ to a key problem of your student project.

- **Smart Little People.** Learn to image small (micro-level) intelligent people at the zone of conflict of your problem and develop solution concepts by having them manipulate physical objects.
- **9-Windows.** Learn to apply a problem and solution modeling tool that looks at systems at the sub-system, system and super-system levels and in the past, present, and future. The method helps you to visualize solution directions and find resources available in and around your system to apply towards those solutions.

- **Relationships Between Ideality, S-curve and TESE.** Understand the relationships between ideality, the S-curve and how the remaining trends drive the progression of increasing value.
- **TRIZ Relation to Lean and 6-Sigma.** Understand how other problem modeling tools are related to and supported by TRIZ.

Group activity: Finalize group project reports.

- **Course Wrap-Up.** Group reports. Course review. Topics for further study. Questions and answers. Plans for future actions. Course critique.