Quality for Prosperity

INDIAN SOCIETY FOR QUALITY

Presents

Two-Day Course On

Problem Solving using TRIZ Methods

Course Instructor

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What does the course offer?

This course introduces all the main TRIZ tools so that delegates can first identify the "inventive" problem and then find several "innovative" solutions for the same.

Various TRIZ tools covered in the course are :

Use of 40-Inventive and 6-Separation Principles to resolve contradictions, Ideality and Ideal Final Result (IFR), Problem formulation and Functional Analysis, Use of Trends of Evolution and Evolutionary potential, and Use of S-Field model for eliminating Harmful effects.

The introduction to each TRIZ tool is followed by real world examples of the method in action.

The course will include several hands-on / Interactive sessions on TRIZ-based 'problem-formulation' and 'solution concepts'

Who should attend?

Key management personnel from supervisors/executives to senior managers who are involved in

- Research & Development,
- Quality and Reliability,
- Product Design,
- Process Design, and
- New Product Development
- Manufacturing & manufacturing services

Course Material

Comprehensive notes, that cover all the TRIZ tools, will be given at the time of registration. It will contain 30 pages of "Introduction to TRIZ" and a printout of the contradiction Matrix.

Need for Systematic Innovation

The goal of all industries is to seek innovative solutions to engineering problems, quickly and with fewer resources. This is required to improve their products and processes so that they can create enhancements above and beyond the technologies developed in countries like the USA, UK, Japan etc. thus enabling them to be set free from the clutches of perpetual dependence on foreign know-how.

However, human nature, specialist training, habits, paradigms and the working environment constrain our innovative thinking. This is called "psychological Inertia" and it has to be overcome to obtain innovative solution concepts for the chronic technical problems.

TRIZ is the only scientifically based systematic methodology that overcomes this "psychological inertia". TRIZ has been proven to produce a large range of fundamentally strong solution concepts in a much shorter time scale even when resources are very limited.

TRIZ solutions directly result in improved products at reduced cost.

What is TRIZ?

TRIZ is a Russian acronym meaning "Theory of Inventive Problem Solving". In 1946, Genrich Altshuller, the founder of TRIZ, was a patent reviewer at the Russian naval patent office. He perceived that there is a definite pattern in the way innovations take place in technical systems. He started a study of 400,000 patents to look for the basic principles and patterns in the world's most innovative patents. This study was continued, by Altshuller and his disciples, over the past 50 years and has yielded a systematic approach for definition and identification of innovative problems, a set of problem solving tools, and a vast knowledge database, which can help solve current technical problems in an innovative way. Today, the TRIZ software database includes the essence of over 2,500,000 of the world's strongest patents.

The Faculty

The course will be conducted by **Prof. Prakash R. Apte**

Professor Apte joined Indian Institute of Technology at Mumbai after having 30 years of research experience at the Tata Institute of Fundamental Research, Mumbai. He has since retired as Emeritus Professor from IITB and started his own company APTennovate for Training and Consultancy in TRIZ Innovation and Taguchi Optimiztion. For the last 20 years he has been practicing the new method of Russian origin, called "TRIZ – Innovative problem solving", and its potential in innovative problem solving and opportunity creation. In the past 18 years, he has conducted over 130 CEP "open" and "in-house" courses, 40+ of which have been for Mahindra and Mahindra, training over 500 engineers and solving over 250 problems. In last 3 years alone, he has conducted courses 36 TRIZ courses and 8 Taguchi courses.

Course Schedule

Sl No.	Contents	Time (Hrs)	
		From	To
Day 1 (8:30 am to 5:00 pm)			
	Registration and inauguration	08:30	09:00
1	Overview of TRIZ	09:00	10:30
	Tea Break	10:30	11:00
2	The Tools of TRIZ : 6 Separation Principles for Physical Contradiction.	11:00	11:45
3	The Tools of TRIZ : 40 Inventive Principles and Contradiction Matrix	11:45	12:30
4	Interactive session : for finding contradictions in real life situations	12:30	13:00
	Lunch Break	13:00	14:00
5	Case-studies of Physical and Technical contradictions	14:00	15:30
	Tea Break	15:30	16:00
6	The Tools of TRIZ : Trends of Technical Systems Evolution, Evolutionary Potential	16:00	17:00
Day 2 (9:00 am to 5:00 pm)			
7	The Tools of TRIZ : Ideality and Ideal Final Result (IFR) and System Resources	09:00	09:45
8	The Tools of TRIZ : S-Field Model and Harmful Effect Elimination	09:45	10:45
	Tea Break	10:45	11:15
9	Interactive session and Case-studies: S-Field Model and Harmful Effect Elimination	11:15	12:00
10	The Tools of TRIZ: Function and Attribute Analysis and Trimming of components	12:00	13:00
	Lunch Break	13:00	14:00
11	A Success Story of TRIZ	14:00	14:30
12	Case Studies : Interactive session :Real problems (by participants) a Problem Formulation	14:30	15:30
	Tea Break	10:45	11:15
13	Case Studies : Interactive session :Real problems (by participants) a Solution concepts	15:45	16:45
14	Putting it all together : Use of several TRIZ tools	16:45	17:00