

Two-Day Course On
Problem Solving
using
TRIZ Methods

22-23 Feb 2018

for



at IIT Madras Research Park-
Chennai

Course Instructor

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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.

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 R&D and management personnel who are involved in

- o Research & Development,
- o Quality and Reliability,
- o Product Design,
- o Process Design, and
- o New Product Development
- o Those involved in problem solving and streamlining innovation process in their organization will also be benefitted.

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.

Course 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 APTinnovate for Training and Consultancy in TRIZ Innovation and Taguchi Optimization. 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 17 years, he has conducted over 100 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 34 TRIZ courses and 8 Taguchi courses.

Prof. Prakash R Apte

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Course Schedule Day-1 (8:45 am to 5:30 pm)

Sr. No.	CONTENTS	TIME (Hrs)	
		From	To
FIRST DAY			
	Registration and inauguration	09:00	09:30
01.	Overview of TRIZ	09:30	10:30
	<i>T e a B r e a k</i>	10.30	10.45
02.	The Tools of TRIZ : 6 Separation Principles for Physical Contradiction	10:45	11:45
03.	The Tools of TRIZ: 40 Inventive Principles and Contradiction Matrix	11:45	12:30
04.	Interactive session: for finding contradictions in real life situations	12:30	13:00
	<i>L u n c h B r e a k</i>	13:00	14:00
05.	Case-studies of Physical and Technical contradictions	14:00	15:30
	<i>T e a B r e a k</i>	15:30	16:00
06.	The Tools of TRIZ : Trends of Technical Systems Evolution, Evolutionary Potential	16:00	17:00
07.	QUIZ	17:00	17:30

Course Schedule Day-2 (9:00 am to 5:30 pm)

Sr. No.	CONTENTS	TIME (Hrs)	
		From	To
SECOND DAY			
01.	The Tools of TRIZ : Ideality and Ideal Final Result (IFR) and System Resources	09:00	09:45
02.	The Tools of TRIZ: S-Field Model and Harmful Effect Elimination	09:45	10:45
	<i>T e a B r e a k</i>	10:45	11:15
03.	Interactive session and Case-studies: S-Field Model and Harmful Effect Elimination	11:15	12:00
04.	The Tools of TRIZ: Function and Attribute Analysis and Trimming of components	12:00	13:00
	<i>L u n c h B r e a k</i>	13:00	14:00
05.	A Sucees Story of TRIZ	14:00	14:30
06.	Case Studies: Interactive session: ⇒ Problem Formulation	14:30	15:30
	<i>T e a B r e a k</i>	15.30	15.45
07.	Case Studies: Interactive session: ⇒ Solution concepts	15:45	16:45
08.	Putting it all together: Use of several TRIZ tools	16:45	17:00
09.	QUIZ-Test of understanding	17:00	17:30

Registration fees (including GST) :

INR 6,500/- per participant

Online Registration Link is given below:

<http://nbqp.qci.org.in/home/>

QCI members will get a 10% discount

Important Information:

Last date of receiving application: **16 February 2018**

Online Registration Link:

<http://nbqp.qci.org.in/workshop-event.php>

Payment Mode: Online through

- **Fee should be in form of NEFT, or Cheque/DD**
- **Cheque/DD should be in favour of “ Quality Council of India”**

Note:

1. Registration fee includes tea, lunch and registration kit
2. Participants attending the full 2 days program will be issued a Certificate at the end of the course

Contact:

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