



## Process Improvement Training - DOE using Taguchi Techniques

### Design of Experiment (DOE) as a design for Six Sigma training.

Saint Louis, MO. Schedule: Feb 26-29, 2008 ([register now](#))

(Attendees need bring at least 1 laptop per 2 employees to use the provided DOE software in workshop. We can provide a loaner laptop if pre-request.)

#### Day 1 Taguchi Techniques ...

- Overview of the Taguchi concepts of quality engineering
- New philosophy and Definition of - Quality Loss to the society from poor quality
- Standardized technique - Measuring cost of quality by Loss Function
- Review basic concepts in experimental design
- Types of factors and levels Common experiment designs
- Orthogonal array vs. one-factor-at-a-time experiments
- Project objective and Overall Evaluation Criteria
- Need for combining multiple evaluation criteria into a single index



Engineers and Management as well as Quality Champions, learn how to apply the Taguchi experimental design technique. Attend our workshop on **Product and Process Design Improvement Using The Taguchi Approach** (2.4 CEU).

#### Day 2 Taguchi Techniques ...

- Experiments designed using orthogonal arrays
- Main effect study for influence of factors
- ANOVA for relative influence of factors
- Performance at optimum condition
- Confidence level and interval (C.I.)
- Transformation of S/N data
- Brainstorming for experimental design
- Experiments to study interaction
  - Trade off between factors and interactions
  - Test for presence of interactions
  - Test for relative influence of interaction

This 4-day skill-building seminar with application workshop teaches you how to guide your project team with the proven skills to tackle the problems on production floor as well as build quality into your products. This seminar helps you acquire application skills necessary for design optimization under Design For Six Sigma (DFSS) disciplines. *"A great process improvement tool for your production optimization management team!"*



Attendee will receive over 250 pages of workshop handouts, a free single user copy of Qualitek-4 DOE software (\$1,996 value) and *"Design of Experiments Using the Taguchi Approach: 16 Steps to Product and Process Improvement"* by Ranjit Roy text (text book, list price \$130) and a certificate of completion (2.4 CEU).

#### Day 3 Taguchi Techniques ...

- Experiments with mixed level factors
- Upgrading 2-level columns into a 4-level array
- Downgrading (dummy treatment) columns
- 15 different experiments using an L-8 array
- Combination Design (special design tool)
- Strategy for Robust Designs -New attitude toward uncontrollable factors
- Outer array for robust design

This 4-day seminar will prepare you for immediate application of the Taguchi technique to your projects. Basic steps of experiment designs using the Taguchi orthogonal arrays will be discussed in detail. You will understand how improvement in consistency is measured in statistical terms and how experiments can be designed to improve it. The Taguchi Robust Design strategy, which deals with treatment of the uncontrollable factors and how to make the performance insensitive to the influence of the uncontrollable factors by controlling those factors that can be controlled, will also be covered in this course.

Major emphasis will be placed on how to apply the method. Practical application steps, including brainstorming, team approach, and consensus decisions, are demonstrated through example project applications. Discussions of theory and mathematical treatments are kept to a minimum. Concepts covered in class lectures are practiced and tested using numerous class exercises. A large number of review questions in the reference handout provides opportunities to test what is learned in the class. Reviews of advance techniques and analysis of experimental results are covered during the last two days of the sessions. The participants are encouraged to attend as a team and bring their own projects to the class.

- An overview of Systems with Dynamic Response
- Understanding dynamic systems - Analysis of Results
- TEAM - the new disciplines in the workplace
- Order of discussions in the planning session
- Participants and facilitation of planning
- Computation of cost/ LOSS FUNCTION
- Reference and Application assistance
- Project application guidelines
- Design and analysis using computer software

### Day 4 Taguchi Techniques ...

- Group reviews and exercise Computer Software (Qualitek-4)
- Class project & presentation by the groups
- Class Evaluation and Adjournment

### Instructor Bio:

This project management seminar / application workshop is led by **Ranjit K. Roy, Ph.D., P.E., PMP**, President of Nutek, Inc. Dr. Roy specializes in the Taguchi approach to quality improvement. He is also the author of two leading textbooks on Taguchi application, and the Qualitek-4 software used in the workshop. Dr. Roy has achieved international recognition as a consultant and trainer for his down-to-earth teaching style of the Taguchi experimental design technique, project management, and several other quality engineering topics. Dr. Roy completed graduate studies at the University of Missouri, Rolla, MO. and is a *fellow* of the American Society of Quality.

**We are a Strategic Training Partner for the Association for Facilities Engineering (AFE) and provide AFE members a 10% discount.**

*This process control training course, as with all of our training courses, is not just text book instructions but practical knowledge and case examples based on years of experience.*

*"Dr. Roy has a good way of explaining difficult materials clearly with simple examples and analogies." - Stephen Christanto, Sara Lee, Saint Luis, MO.*

*"The program is very informative and the instructor provided good examples to help us understand ideas by explaining it different ways." - Scott Oldani, Belleville Shoe Manufacturing Co. Belleville, IL.*

*"The instructor is very knowledgeable and makes use of simpler examples to clarify finer concepts of the technique. I hope to use the technique for trouble shooting and problem investigation." - Solvey Advance Polymers, Apharetta, GA.*

*"I have an immediate need to apply the technique to my projects, and this seminar helped me learn how to apply right it away." - Amir Jiwani, Application Engineer, Industrial Tools Inc., Oxnard, CA.*

*"The structured discussions in experiment planning will be most helpful to my activities. Also the ability to translate improvement into dollars using the Loss Function is something very attractive." - Barbara Schiller, Eagle Ottawa, Rochester Hills, MI.*

*"I'm very glad I participated in this class. I'm surprised why my company has not been using this technique" - Melinda Dennis, Six Sigma Black Belt, Recticel Interiors of North America, Clarkston, MI.*

Attendees learn hands-on, how to accomplish design and analysis tasks using Qualitek-4 DOE software. All attendees are requested to bring their own laptop computer for the class.

Why should you consider our workshop? Attendees to this session learn hands-on, how to apply the Taguchi experimental technique. 80% of class discussions deal with applications. Attendees learn how to apply the technique immediately to :

- Optimize product/process designs
- Lay out efficient validation test plan
- Resolve technical & production problems cost effectively
- Build robust products, processes, recipes & formulations
- Other project management and production optimization management responsibilities

**This course offer information your people will actually use out on the shop floor. Great for Train the Trainer program too, register your champion.**

### Seminar Location ...

#### **The Microsoft Building**

3 Cityplace Drive

St. Louis, MO. 63141

**Register TODAY because seating is limited!**



**Note:** *Designs should be optimized before they are released for production to offer the greatest return on investment. For existing production control, a vast majority suffer from problems related to the lack of consistency of performance. Variation in production control, which causes higher rejects, reworks, and breakdowns, **can be reduced by this Taguchi technique.***

#### **What you will need:**

A scientific calculator, a laptop computer, and one or more design optimization or problem solving ideas to work with during the application workshop. (We can provide a loaner laptop if you request it ahead of time.)



Saint Louis, MO.



# DOE Application Training Workshop Registration

Saint Louis, MO. Schedule: **Feb 26-29, 2008**

Also see our 2007 , [PID Tuning](#) and our [Atlanta, GA](#). Seminar Schedules, and our [On-Site PLC Training](#) and [On-Site PID Training](#)

### Seminar Fee ...

\$2500 per per attendee. 10% discount to AFE members!

### Registration Methods ...

- 1) **Online** (This page)
- 2) **Fax** (573) 547-6153
- 3) **Phone** (573) 547-5630
- 4) **Mail** this form to ...

**Business Industrial Network**

2 Cityplace Drive, Suite 200,  
Saint Louis, MO 63141

- 5) **Email** all form information to [Training@bin95.com](mailto:Training@bin95.com)

### Seminar Location ...

#### [The Microsoft Building](#)

**3 Cityplace Drive, 2nd Floor  
Saint Louis, MO 63141**

*Located at our new state of the art training facility located in the Microsoft building next to Business Industrial Network offices.*

### Accommodations ...

#### **Drury Inn & Suites**

11980 Olive Blvd  
Creve Coeur, Missouri, 63141  
[Click for hotel website/](#) Hotel

Phone :

(314) 989-1100

**Note: Seminar Ends 4:30 Friday, book travel accordingly. (Saturday rec.)**

Seminar fee does not cover meals, travel or hotel. **Lunch is on us!** Discount code sent after registration.

### Schedule ...

**St. Louis, MO. Schedule:**

**Feb 26-29, 2008**

8:00am - Class Starts  
12:00 - 1:00pm Lunch  
4:30 - Class Ends

Registrants may receive additional information and updates via their email address.

### Authorizing Manager:

Name:

Title:  Email:

Company Name:

Address:

City:  Zip:  State/Prov:

Phone:  Fax:

**4 Day Course Dates:**  February 26-29, **2008**

### Seminar Attendees:

Name:  Title:

Name:  Title:

Name:  Title:

Name:  Title:

**Payment Method:** Amount to be charged per attendee, \$2500 per 4 day course.

Please enter your credit card information below before submitting this secure form. You will also need to submit this form with contact information above filled out when paying with Check.

Visa  MasterCard  AMX  Check Enclosed (pay to Business Industrial Network)

Card Number:

Expiration Date:  Card Code?:

Name on Card:

Signature:

*The total will be US\$2500, times the number of attendees you are registering. (US\$2250, per AFE attendee)*

**Additional Information:** *This seminar - workshop is great for those seeking adult continuing education to help qualify for jobs in St Louis, MO. If AFE member, indicate so in name field. Cancellations may apply fees to other training classes, except 'no-shows'. Instructor recommends, but does not require you to bring a lap top which you will install and use our free DOE training software on..*

**We are a Strategic Training Partner for the Association for Facilities Engineering (AFE) and provide AFE members a 10% discount.**

**- Thank You -**

*All trademarks and trade names are property of their respective owners. [Cancellation Policy On line](#)*