Open Enrollment Seminar in Detroit Area

Robust Product and Process Designs

This 4-day seminar with application workshop is intended to prepare the attendees for immediate use of the technique. About 80% of class discussions involve address issues on 'how to apply'.

WHERE?

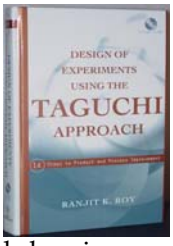
- In Detroit area (several times a year)
- At your facility (For larger group)

Visit http://Nutek-us.com/wp-s4d.html for scheduled event.

DETAILS: Please visit for information and registration.
www.Nutek-us.com/wp-s4d.html - public seminar
www.Nutek-us.com/wp-ons.html - onsite seminar
www.Nutek-us.com/wp-q4w.html - Software

WHO SHOULD ATTEND?

- Product/Process Design Engineers
- R&D Scientists
- Marketing Specialists and Project Managers
- QA Personnel who have immediate applications in product optimization or production problem solving
- Manufacturing Manager, Director or Senior Engineer wishing to lead application project teams
- Instructors in academic institution who are looking toward sharpening the application knowledge
- Consultants and Trainers



REGISTRATION:

The cost for this 4-day seminar/workshop is $2,750/attendee. (SAVE cost by registering early and in group)

WHAT PARTICIPANTS RECEIVE?

- Seminar handout (over 250 pages)
- Single user copy of our Qualitek-4 (Retail at $1,996 value)
- Textbook: Design of Experiments Using the Taguchi Approach …by Ranjit Roy text (text book, list price $130).
- Certificate of completion (2.4 CEU)
- Lunch (all four days of the session)

WHY SHOULD YOU CONSIDER OUR SEMINAR?

Attendees to this session learn hands-on, how to apply the Taguchi experimental technique. Upon completion, they are able to:

- Build robustness in product and process designs
- Lay out efficient *validation test* plan
- Resolve technical & production problems cost effectively
- Optimize products, processes, recipes & formulations
- Increase response from conventional and web based advertisements

Course Overview

Robustness is an essential characteristic for dependable performance. Robust products and processes perform reliably with minimum variation due to uncontrollable factors. Naturally, to assure consistent performance, the designs must be robust.

Dollar for dollar, the return on investment is the most when design improvement efforts are directed toward the development activities. One of the effective ways to reduce variation in performance that potentially results in reduced rework and rejects downstream is to use the standardized version the Design of Experiment (DOE) technique proposed by Dr. Genechi Taguchi.

This 4-day seminar prepares participants for immediate application of the technique to their own projects. Basic steps of experiment designs are discussed in detail. Major emphasis is 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. The participants are encouraged to attend as a team and bring their own projects to the class.

Workshop: Attendees learn hands-on, how to accomplish design and analysis tasks using Qualitek-4 computer software. All attendees are requested to bring their own laptop computer for the last two days of the class. (Visit www.Nutek-us.com/wp-s4d.html for details.)

Be sure to visit us in the web and explore our sites on seminars, software, support services, and client information.
www.Nutek-us.com

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Public Seminar Content

Product and Process Design Improvement Using The Taguchi Approach

TOPICS OF DISCUSSIONS

- 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

- 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

- 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
- 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

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

COURSE INSTRUCTOR

This seminar 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.

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. He is also the author of two leading textbooks on Taguchi application, and Qualitek-4 software used in the seminar. He began his career as senior design engineer with Burroughs Corporation following completion of graduate studies in engineering at the University of Missouri-Rolla in 1972. He then worked for General Motors Corp. (1976-1987) assuming various engineering responsibilities with his last position as that of reliability manager. Dr. Roy is a *fellow* of the American Society of Quality.

ATTENDEES EVALUATION

"Excellent presentation and approach to all with or without Taguchi background."

"Dr. Roy has a unique way delivering complex information in a common sense language."

"It's a great relief to know that there are software packages available to do all of the number crunching and prepare the reports."

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