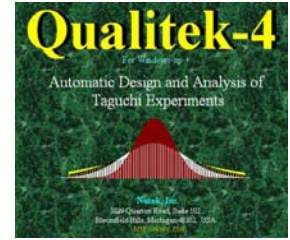


## DOE -II Advanced Experiment Designs for Robust Products and Processes (Taguchi Robust Designs)

This 3-day session will be of interest to experienced experimenters interested in learning how to apply the Taguchi advanced concepts of experimental designs in their own projects. (Must have completed DOE-I)



**WHERE?** At your facility (For larger group)

**WHEN?** At a mutually convenient time.

**DETAILS:** Please visit for information and registration.

[www.Nutek-us.com/wp-sem.html](http://www.Nutek-us.com/wp-sem.html) - onsite

### WHO SHOULD ATTEND?

- Product/Process Design Engineer
- R&D Scientists, or QA Personnel
- Manufacturing, Manager, Director or Senior Engineer (who wish to lead, teach, and introduce this technique within your organization)

### COURSE CONTENT

#### DAY 1

- Overview- Taguchi approach
  - New disciplines
  - Definition of Quality
  - Loss Function
  - Attractiveness of Taguchi Approach
- Review basic concepts in experimental design
- Types of factors and levels
- Common experiment designs
- Orthogonal array vs. one-factor-at-a-time experiments
- Practice Problem
- Project objective Evaluation Criteria
  - Need for combining multiple evaluation criteria into a single index
- Experiments designed using orthogonal arrays

### Learning Objectives:

- How to set up experiments and analyze results
- Optimize product and process designs
- Solve technical problems in design and productions
- Lay out validation test plans for robust products

### COURSE CONTENT (Contd.)

#### DAY 2

- Experiments with mixed level factors
- Upgrading 2-level columns into a 4-level array
- Downgrading (dummy treatment) columns
- Over 15 different experiments using an L-8 array
- Practice Problem

#### DAY 3

- Robust Design for Dynamic Systems
- Why Robust Design?
- Ideal Function
- Desirable Performance from Robust Design of Dynamic Systems
- Examples of Dynamic Systems
- Practice Problems
- Analysis of Results
- 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
- TEAM: the new disciplines in workplace
- Order of discussions in planning session
- Participants and facilitation of planning
- Computation of savings from LOSS FUNCTION
- Reference and Application assistance
- Project application guidelines

### COURSE INSTRUCTOR

This seminar is led by Ranjit K. Roy, Ph.D., P.E., PMP, and Mechanical Engineer. Dr. Roy specializes in the Taguchi approach to quality improvement and engineering quality improvement topics.



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