Onsite and Sponsored Seminar

DOE –I Basic Design of Experiments (Taguchi Robust Designs)

This 3-day session will be of interest to practicing engineering and quality champions interested in learning how to immediately apply common type of experimental designs in their own projects. Participants learn how to *plan*, *lay out* experiments, and analyze results.

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 - onsite seminar

WHO SHOULD ATTEND?

- Product/Process Design Engineer
- R&D Scientists, or QA Personnel, Manufacturing. Manager
- Plant Managers and Production technicians.

COURSE DESCRIPTION

Design of Experiment (DOE) is a powerful statistical technique for improving product/process designs and solving production problems. A standardized version of DOE, as forwarded by Dr. Genichi Taguchi, allows one to easily learn and apply it in manufacturing and production problem investigations. Since its introduction in the U.S.A. in early 1980's, the Taguchi approach of DOE has been a design optimization tool in the hands of the engineering and scientific professionals.

COURSE CONTENT

- Overview- concepts of quality engineering
- New Definition of Quality
- Loss to the society from poor quality
- Standardized technique

COURSE CONTENT (Contd.)

- 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 Evaluation Criteria
- Combining multiple evaluation criteria
- Experiments designed using orthogonal arrays
- Experiments with all factors at two levels
- Experiments mixed level factors
- Experiments with all factors at three levels
- Experiments with all factors at four levels
- Experiments to study interaction
- Trade off between factors and interactions
- Test for presence of interactions
- Test for relative influence of interaction
- Basic analysis and strategy for experimentation
- Dealing 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
- Experiment Planning Review
- TEAM: the new disciplines in workplace
- Order of discussions in planning session
- Participants and facilitation of planning
- Measuring cost of quality by Loss Function

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 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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