



Training on Design of Experiments & Taguchi

Course Duration: Three Days

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INTRODUCTION

Design of Experiments is a practical adaptation of a statistical tool which enables non-statisticians to use low cost experimental methods to optimise the performance of your products and processes during development whilst using the widest possible tolerances, and to improve your yields, reduce waste and fine tune your processes during production.

This programme will generate in you the confidence and give you the ability to organise and run successful experiments in your own organisation.

You will learn how to design products, which are more economic to produce, and more robust in operation, and will learn how to set up and operate processes to improve process yields and produce product characteristics at optimum values with reduced variations.

OBJECTIVES

The Power of DOE

DOE is a very powerful analytical method that can be taught to technical professionals at a very practical level, providing a cost-effective and organized approach to conducting industrial experiments:

Multiple product design and/or process variables can be studied at the same time with these efficient designs, instead of in a hit-and-miss approach, providing very reproducible results.

Due to the statistical balance of the designs, thousands of potential combinations of numerous variables (at different settings or levels) can be evaluated for the best overall combination, in a very small number of experiments.

This not only saves experimental costs, but it greatly increases the odds of identifying the hard-to-find solution to nagging quality problems.

COURSE CONTENT

Module Content

Experimental Overview -

- why experiments?
- application potential
- typical results achieved
- basic concepts
- basis of DoE
- choice of experimental approach
- types of experimentation
- Taguchi quality engineering.

Experimental Basics -

- define the process
- establish objectives
- define key process factors & levels
- design & run experiments
- analyse results
- do confirmation run & draw conclusions
- make proposals for future operation.

Two Level Experimentation -

- L4, L8, L12 & L16 arrays
- interaction matrices & linear graphs
- case studies/projects
- parameter design.

Three Level Experimentation -

- L9, L18, L27 arrays
- interaction matrices & linear graphs
- case studies/projects
- box

Evolutionary Operation (EVOP) -

- experiments during production using EVOP
- essence of EVOP
- box EVOP
- simplex EVOP
- team tasks.

Basic Blending (mixture) Designs -

- reasons for, purpose & scope
- two component mixture designs
- three component designs
- projects / case studies
- how to conduct experiments, ten step implementation guidelines.

CERTIFICATE

- **Participants qualifying written examination shall be awarded certificate of successful completion of the course.**

WHO SHOULD ATTEND

- Technical Managers • Quality Engineering Team • Quality Managers • Laboratory Personnel • Production Managers • Quality Management Consultant • Engineers • Quality Control Executives • Metrology/Standard room personnel • S.Q.C/ SPC Team

Students from Engineering, Management, and Science Streams.

About us

Shreyas Quality Management System is a Consultancy Development Centre(CDC), Govt. of India Accredited, and IMS(ISO9001QMS,14001EMS & OHSAS18001)certified Training & Consultancy Organization focused on organizational performance improvement through the globally accepted tools such as ISO 9001, ISO14001 EMS, ISO5001EnMS,TS16949,NABL ISO 17025,ISO15189,ISO27001 ISMS,OHSAS 18001, SIX SIGMA, 5 S/Kaizen, TQM, quality costs, design of experiments(DOE) etc. It has helped many organizations both from manufacturing and service sectors to analyze and improve their performance through well-established systems. It has team members possessing a wide spectrum of professional qualifications, experience and expertise which could effectively and efficiently address improvement issues which are of importance to your business / organization. It has provided consultancy to more than 200 organizations both from manufacturing and service organizations for quality improvement.

Organised by-

SHREYAS QUALITY MANAGEMENT SYSTEM (SQMS)

(Consultancy Development Centre, Govt. of India Accredited, and IMS certified Training & Consultancy Organization)

Training & Consultancy for-

- Six Sigma, TQM - Quality Award, Quality Cost, TPM, SQC
 - ISO 9001QMS; ISO 14001 EMS, QS 9000, OHSAS 18001, ISO 27001 ISMS, ISO 5001 EnMS
 - ISO 17025/15189 (NABL Accreditation), NABH, HACCP, SEI-CMM,
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