

# DESIGN OF EXPERIMENTS (DOE)



## Introduction

DOE has been used by statisticians in industry for more than fifty years. It is only recently that managers, engineers and scientists begin to explore these methods and find out the effectiveness in problem solving, design and development.

DOE will help to minimise the many variables that affect the yield of production in the industry. It permits many variables to be changed in a planned manner in order to come out with the most optimal values for such variable thereby saving time for production and cutting cost. It is no wonder that DOE is the most importance tools used in Six Sigma Black Belt Program.

## Objective

This course will enable the participants to:

- provide means for tackling problems with long-term solutions.
- improve quality of products through optimising the variables.
- reduce material waste due to frequent rejects on the product resulting from quality problems.
- increase productivity by reducing quality problems.
- reduce the cost of production due to ability to detect quality problems faster.

## Duration

2 days | 9am – 5pm | 14 hours

## Who should attend

This course is suitable for technical professionals as well as chemical professionals such as managers, engineers, engineering assistants and chemists involved in design, development, production, manufacturing, quality, and maintenance of the product.

## Entry Requirement

Participants should have basic knowledge of statistics.

## Course Fees

Member: S\$535.57  
Non-Member: S\$563.76  
*Registration Fee of S\$17.28 apply*  
*SDF funding & SkillsFuture applicable*  
*All fees stated are inclusive of 8% GST*

## Award of Certificate

Certificate of Completion will be issued to participants who have attended at least 75% of the course.



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## Course Contents

### Analysis and Control of Variables

- Introduction
- Dimension of Quality Improvement
- Application of Statistics
- Performance Optimisation
- Types of Experiments
- Concluding Remarks

### Process Evaluation and Comparison

- Statistical techniques and decision making in the face of variability.
- Evaluation and characterisation of process variations.
- Comparative studies of process performance.

### Multifactor Studies

- Framework of P-optimisation.
- Application of Design of Experiment.
- Factorial selection and coding.
- Factorial experiment: design and analysis.
- Two-level factorial designs.
- Interpretation of main and interaction effects.
- Significant tests for main and interaction effects

### Case Studies



Please refer to this URL  
<https://www.sqi.org.sg/courses/>  
or QR Code for soft copy  
and updated training schedule

### Membership Application

Register membership online at  
**[www.sqi.org.sg/membership-join/](https://www.sqi.org.sg/membership-join/)**  
or contact us to get the membership  
application form.

Membership Categories:

- ~ Organisation membership
- ~ Individual membership

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