



QUALITY AND PRODUCTIVITY | QP-014

Design of Experiments for Process Improvement

Contact

+31 85 7444446
info@aractech.com
<https://aractech.com>

Address

Waarderweg 50, 2031PB Haarlem - Netherlands.

Course content

Why Attend

Design of experiments is a powerful method for understanding how multiple factors affect a process and finding optimal settings with minimum testing. It is widely used in manufacturing, laboratories and process industries.

This Aractech course explains experimental design principles, full and fractional factorial designs, analysis of effects and interactions, screening experiments, response surface basics and practical planning and execution. Participants design and analyse experiments using software and case data.

Course Methodology

- Concept sessions
- Software-based exercises
- Case studies
- Hands-on experiment simulation
- Group presentations

Course Objectives

- Explain the principles of designed experiments
- Plan experiments with clear objectives and factors
- Design full and fractional factorial experiments
- Analyse main effects and interactions
- Use screening and optimisation designs
- Implement and verify optimal settings

Target Audience

- Process and quality engineers

Course content

- Six Sigma practitioners
- R&D scientists
- Laboratory professionals

Course outline

Detailed course outline

Day-by-day outline for Design of Experiments for Process Improvement.

Day 1 - Experimental Thinking

- 09:00-09:39 | Limits of one-factor testing
- 09:39-10:18 | DOE principles
- 10:18-10:57 | Factors, levels and responses
- 10:57-11:00 | Randomisation and replication
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Randomisation and replication (continued)
- 12:05-12:43 | Planning
- 12:43-14:00 | Exercise: Experiment planning

Day 2 - Factorial Designs

- 09:00-09:39 | Full factorial designs
- 09:39-10:18 | Main effects
- 10:18-10:57 | Interactions
- 10:57-11:00 | Analysis
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Analysis (continued)
- 12:05-12:43 | Graphs
- 12:43-14:00 | Lab: Two-level factorial

Course outline

Detailed course outline

Day-by-day outline for Design of Experiments for Process Improvement.

Day 3 - Fractional and Screening Designs

- 09:00-09:39 | Fractional factorials
- 09:39-10:18 | Resolution and confounding
- 10:18-10:57 | Screening designs
- 10:57-11:00 | Selecting designs
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Selecting designs (continued)
- 12:05-12:43 | Interpretation
- 12:43-14:00 | Lab: Screening experiment

Day 4 - Optimisation

- 09:00-09:30 | Response surface basics
- 09:30-10:00 | Centre points
- 10:00-11:00 | Robust design concepts
- 11:00-11:30 | Coffee break
- 11:30-12:00 | Confirmation runs
- 12:00-13:00 | Case study: Process optimisation
- 13:00-14:00 | Exercise: Optimisation

Course outline

Detailed course outline

Day-by-day outline for Design of Experiments for Process Improvement.

Day 5 - Practical Application

- 09:00-09:34 | Running experiments
- 09:34-10:08 | Common mistakes
- 10:08-10:42 | Communicating results
- 10:42-11:00 | Implementing settings
- 11:00-11:30 | Coffee break
- 11:30-12:19 | Implementing settings (continued)
- 12:19-12:53 | Control
- 12:53-14:00 | Capstone: Experiment design project

Seminar dates

Available seminar dates

Live dates and pricing for Design of Experiments for Process Improvement generated from the course details page.

Date	Location	Format	Fee
16 - 20 November 2026	Barcelona	Classroom	€2,815
7 - 11 December 2026	Munich	Classroom	€3,225
11 - 15 January 2027	Barcelona	Classroom	€2,815
8 - 12 February 2027	Amsterdam	Classroom	€2,830
8 - 12 March 2027	London	Classroom	€2,315
12 - 16 April 2027	Munich	Classroom	€3,225
10 - 14 May 2027	London	Classroom	€2,315
14 - 18 June 2027	Barcelona	Classroom	€2,815
12 - 16 July 2027	Munich	Classroom	€3,225
9 - 13 August 2027	Barcelona	Classroom	€2,815

Seminar dates

Available seminar dates

Live dates and pricing for Design of Experiments for Process Improvement generated from the course details page.

Date	Location	Format	Fee
13 - 17 September 2027	Amsterdam	Classroom	€2,830
11 - 15 October 2027	London	Classroom	€2,315
8 - 12 November 2027	Munich	Classroom	€3,225
13 - 17 December 2027	London	Classroom	€2,315
16 - 20 November 2026	Online / Live	Online / Live	€1,815
7 - 11 December 2026	Online / Live	Online / Live	€1,815
11 - 15 January 2027	Online / Live	Online / Live	€1,815
8 - 12 February 2027	Online / Live	Online / Live	€1,815
8 - 12 March 2027	Online / Live	Online / Live	€1,815
12 - 16 April 2027	Online / Live	Online / Live	€1,815

Seminar dates

Available seminar dates

Live dates and pricing for Design of Experiments for Process Improvement generated from the course details page.

Date	Location	Format	Fee
10 - 14 May 2027	Online / Live	Online / Live	€1,815
14 - 18 June 2027	Online / Live	Online / Live	€1,815
12 - 16 July 2027	Online / Live	Online / Live	€1,815
9 - 13 August 2027	Online / Live	Online / Live	€1,815
13 - 17 September 2027	Online / Live	Online / Live	€1,815
11 - 15 October 2027	Online / Live	Online / Live	€1,815
8 - 12 November 2027	Online / Live	Online / Live	€1,815
13 - 17 December 2027	Online / Live	Online / Live	€1,815