



AMSTERDAM  
BUSINESS  
SCHOOL

Business

# Design and Analysis of Experiments

**Participants will learn the basics of experimentation. The emphasis is the sequential nature of experimentation. The primary purpose of experimentation is to support scientific and engineering inquiry.**

Good experimentation unfolds over a series of steps. It rarely is a “one shot and done” exercise. This course introduces participants to the common phases of experimentation and outlines the experimental strategies typically used with each phase. The capstone project brings all of these elements together.

This course begins with a review of standard two-level factorial experiments. It introduces two-level factorial experiments run within blocks. Next, it considers fractional two-level factorial experiments. The first day ends with a capstone hands-on project (the “catapult” experiment). The purpose of this first day is to ensure that participants have a deeper understanding and appreciation of the two level experiments than their Lean Six Sigma Black Belt training provided. The first day will end with networking drinks.

Day two introduces second-order experimentation designed to optimize products and processes. The instruction clearly lays out the sequential experimentation usually required to optimize. The capstone project summarizes the key elements. The final topic of the second day is two factor experimentation involving categorical factors with more than two levels.

The third day discusses categorical factors, which include such things as vendors and types of plastic. The goal is to introduce participants to missed effects (fixed and random effects). The day centers on common examples within business and industrial statistics.

## Facts & figures

Period	21 - 23 June 2017
Timing	Wednesday 21 June 9:00 - 17:00 Thursday 22 June 9:00 - 17:00 Friday 23 June 9:00 - 12:30
Location	Amsterdam Business School
Fee	€ 1,495
Language	English

This course strongly emphasizes the proper use of statistical software. Participants will do no hand-calculations. The purpose of the course is to get participants to be able to plan and to analyze real experiments. During the class the delegates will analyze real data sets using the software.

After this programme you are able to run and analyze (fractional) two-level factorial designs, optimize responses via second-order experiments and use statistical software for analyzing results from experimentation.



### Participant profile

This course builds on most standard Lean Six Sigma Black Belt training in the design and analysis of experiments. The course assumes exposure to the concepts of two-level full factorial, two-level fractional factorial, and basic second-order response surface experiments.

### Admission criteria

Participants should have knowledge of statistics on Lean Six Sigma Black Belt level. And should bring their own laptop with a free-trial version of the following software: Minitab, JMP, Design-Expert.

### Collaboration

This programme is a collaboration between IBIS UvA, Holland Innovative and the Amsterdam Business School.



**IBIS UvA** is part of the University of Amsterdam and is internationally recognized as a center of expertise in Lean Six Sigma and operations management. The members of the institute are leading authors in international scientific and professional literature. The core strength of IBIS UvA is the interaction between scientific research and more than 20 years of field experience in Lean Six Sigma.



**Holland Innovative** is specialised in project support, training and coaching in the field of project management, product & process development and reliability engineering. Their professionals have an average of 20 years' experience and have built a reputation for quality and success. [www.holland-innovative.nl](http://www.holland-innovative.nl)

### Faculty & speakers

The Institute for Business and Industrial Statistics (IBIS UvA) of the Department of Operations Management of the Amsterdam Business School organizes the course. The speaker is Professor Geoff Vining from Virginia Tech, US.



**Prof. Vining** is one of the leaders in industrial statistics and quality engineering. For many years he is a statistical practitioner. He taught courses on experimental design and analysis at a wide range of companies. His list of publications is really impressive. Many articles have been published in the Journal of Quality Technology and Technometrics. These two journals

are the international top level journals in the field of industrial statistics. Also his 5 books deserve special mention.

### How can I apply?

If you meet the requirements, go to the website for your application: [www.abs.uva.nl/doe](http://www.abs.uva.nl/doe). Application deadline is two weeks before the start of the course.

### Address

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