

# Fast Trak™ training and education

DOE1

## Introduction to design of experiments

*Duration: 3 days*

### Course description

This course gives an introduction to design of experiments (DoE) principles and the statistical terms associated with them. We will also discuss different DoE designs and the process of evaluating results.

Hands-on exercises will provide experience in evaluating various pre-generated DoE data files. You will also set up and run your own DoE experiment on an ÄKTA™ avant system, assess potential responses, and evaluate the results.

- Overview of DoE in process development and its application using ÄKTA™ avant systems
- Understand the concept of DoE, how it relates to quality by design (QbD) and how it plays an important role in establishing a process design space
- Discover how to choose a suitable experimental design according to different applications and scenarios
- Learn how to evaluate data from DoE investigations and how DoE results can be employed to define design and operating spaces
- Gain systems and application knowledge related to DoE

### Who should attend?

This training will be useful for research and development scientists.

### After the course, you will be able to:

- Run and design various DoE experiments
- Assess potential response and evaluate DoE data files

### Topics covered

- QbD: overview and relevance of DoE
- Introduction to statistics
- DoE theory: key concepts, various experimental designs and their properties, evaluation of results from DoE investigations
- Introduction to UNICORN™ control software

## 2022 pricing

Fast Trak™ Center	List Price	Product Code
Germany, Munich*	2160 EUR	29222540
India, Bangalore	Contact us	29219189
China, Shanghai	17 725 CNY	29012016

\* Germany course is a dry course and 2 days in duration

## General course information

Fast Trak™ Education is one means by which Cytiva provides application training in the various aspects of bioprocessing. The courses are designed to provide a learning experience for process development and manufacturing staff.

Fast Trak™ offers training courses on column packing, basic chromatography, optimization and scale-up for both pilot and production scales. We also offer courses on validation issues and chromatography theory. The courses are offered in a variety of formats to meet your unique learning needs, including lab-based courses, live virtual classes, self-paced e-learning courses, and custom courses that can be delivered at your premises.

### Cancellation policy

In case you need to cancel your registration, the following charges will apply:

- 30 to 21 days prior to course: 50% of course fee
- 20 to 8 days prior to course: 80% of course fee
- 7 days or less prior to course: 100% of course fee

If you are unable to attend after registered, you may send a colleague in your place or attend another course.

Cytiva reserves the right to modify course location, course material, substitute speakers, or to cancel the course. If the course is cancelled, registrants will be notified as soon as possible and will receive a full refund of paid fees.

Cytiva will not be responsible for airfare penalties or other costs incurred due to a course cancellation.

### Course certificate

Upon completion of the course, each participant receives a course certificate in which course name and course date is stated.

### Course evaluation

At the end of each course, you will be asked to fill in a course evaluation form. We value your opinion of the course, the speakers, the material, and presentations and use this feedback to continuously improve the courses and their contents.

### Travel and hotel costs

Travel and hotel costs are not included in the course price.

## Language

Standard courses are held in English at Fast Trak™ Centers in USA, Sweden, India, Singapore and Korea, unless otherwise specified. In China, most courses are in Mandarin with occasional courses in English. The courses in Germany are held in German and English, and courses in Japan are held in Japanese. Customized courses can be presented in other languages. Please contact your local Fast Trak™ center for more information.

## Lunches

All lunches during course days are included in the course prices.

## Material in binders

Each course participant will receive the lectures and other relevant material in a binder.

## Requirements for safety level S1 (L1) laboratories

Every course participant who enters our laboratories for the practical sessions must comply with certain safety requirements. Please notice that open-toe shoes are not allowed in the lab. Obligatory protective clothing and safety devices will be provided.

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