



# Fast Trak training and education

## DOE1



### 실험계획법 (Design of Experiments) 기본 과정 (DOE1)

기간: 3일

#### 코스 소개

Fast Trak DOE1 코스는 실험설계법 (DoE) 원리 및 관련 통계 용어를 소개하고 다양한 DoE 기법과 실험 결과 평가 방법에 대해 학습합니다. 실습을 통해 다양한 DoE 예시를 분석/평가하고, ÄKTA Avant 시스템을 사용해 DoE 실험이 진행됩니다.

#### 코스 일정

- 날짜: 2019년 2월 20일 - 22일 (3일 과정)
- 장소: GE Healthcare APAC Fast Trak 센터
- 주소: 인천광역시 연수구 송도1동 송도 미래로 9 BRC 2동 2층 GE Healthcare APAC Fast Trak Center
- 식사: 점심식사 제공

#### 수강 대상

관련 학부/대학원생, R&D 연구원, 프로세스 엔지니어, 제조 기술자

#### 등록 방법

APAC Fast Trak 웹사이트 ([www.bit.ly/fasttrak-kr](http://www.bit.ly/fasttrak-kr))를 통해 직접등록 또는 담당 GE 영업사원에게 문의 주시기 바랍니다.

#### 코스 가격 (2019년 기준)

Fast Trak Center	List Price	Product Code
Korea, Songdo	2,400,000 (KRW)	29295152

#### 강의 내용

- DoE를 통한 공정 개발 및 ÄKTA avant 시스템을 통한 DoE 적용
- 설계 기반 품질 고도화 (QbD) 를 위한 design space 도출 및 DoE 적용 방법
- 다양한 사례에 따른 적절한 실험 설계 유형 분석
- 적격성 검사와 밸리데이션
- DoE 결과 데이터 분석에 따른 Design/ Operating space 적용 방법
- DoE 관련 시스템 및 응용 지식 습득



# Fast Trak training and education

## DOE1



## Introduction to design of experiments (DOE1)

*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

### 2019 pricing

Fast Trak Center	List Price	Product Code
Korea, Songdo	2,400,000 (KRW)	29295152

# General course information

Fast Trak Education is one means by which GE Healthcare provides application training in the various aspects of bioprocessing.

The courses are designed to provide a learning experience for process development and manufacturing staff. There are hands-on training courses on column packing, basic chromatography, optimization and scale-up for both pilot and production scales. Courses on validation issues and chromatography theory are also given. The courses are run at our regional Fast Trak centers or customized 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.

GE Healthcare 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. GE Healthcare 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, Turkey, India, Singapore and Korea, unless otherwise specified. In China, most courses are in Chinese with occasional courses in English. The courses in Germany are held in German and courses in Japan are held in Japanese. Customized courses can be presented in other languages. Please contact the 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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