CQ Consultancy

Setting the standard in

Chemometrics and Applied Statistics training

Course program 2019/423:

Statistics and DOE courses inclusive app !

From 2015 on, attending our Statistics and DOE courses give u free access to **Sherpa** for one year. **Sherpa** is a unique extension to our handouts, that is, a platform-independent **web-based app**, providing step-by-step guidance when setting up experiments or analyzing data. A consultant in a box, let's say.

OUR COURSES:

➢ **Application-oriented course concept**
- Provide insight (no cookbook approach)
- Mix of theory and case studies + hands-on exercises on real-life examples
- Main goal = direct applicability

➢ **Quality guarantee**
- 20 years of experience in training and consulting Chemometrics and Applied Statistics
- Unique money-back guarantee if a course doesn't fulfill your expectations

➢ **Training inclusive follow-up coaching (open courses)**[*]
- An individual 2-hour follow-up session with the trainer
- A 2-hour budget for follow-up support by telephone

Training inclusive follow-up coaching (in-company courses)[*]
- A 4-hour follow-up session with the trainer on-site
- A 4-hour budget for follow-up support by telephone

[*]*General conditions*

CQ Consultancy

CQ Consultancy is a competence center in Chemometrics and Applied Statistics. Building on over 20 years of experience, CQ Consultancy offers its services to chemical, pharmaceutical and food industries, through training, consulting and contracting. Due to our lean organisation we offer our services at prices beyond competition, even when compared with in-house alternatives!

COURSE OVERVIEW

- **Design of Experiments (DOE)**

  Efficiently developing processes and products; exploration and optimization

- **Applied Statistics**

  Backing up decisions by means of classical statistical tools and modern alternatives

- **Multivariate Data Analysis**

  Acquiring information and insights by analyzing large amounts of (non-designed) data

- **Spectroscopic (NIR) Calibration**

  Spectroscopic regression models as an alternative to lab analyses

- **Statistical Quality Control (SQC)**

  Statistics-based process monitoring and control: standard and novel approaches.
  Capability Analysis and Measurement System Analysis.

IN-COMPANY TRAINING

All trainings listed can be organised in-company, in the language of your choice (English, Dutch, German or French), with the software of your choice, and with the possibility to adapt the exercises and course contents to your needs.
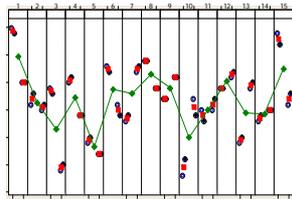
Statistics in Practice

WHY STATISTICS?

After years of neglect in industry, statistics is finally being recognized as one of the cornerstones of "good decision making". The statistical analysis and validation of results is no longer merely encouraged but demanded; this is the case both for conclusions from the analytical lab as for research results. This course is intended for anyone who wants to retrieve the information from statistical numbers and graphs so easily produced by software.

COURSE SET-UP

During the first two days all basic statistical concepts and techniques are treated, which will guide the participants through a correct statistical analysis of their results, originating from experiments or other sources. The third day expands the statistical toolbox with such methods as two-way ANOVA, nested designs for the identification of the most important sources of variation (e.g. for an R&r study) and polynomial regression.
Theory will alternate with hands-on computer exercises.

TRAINING INCLUSIVE FOLLOW-UP COACHING

Each participant is offered **free individual follow-up coaching**. Follow-up coaching means that each participant can appeal to the trainer's expertise, after having applied the methods treated in the course to his / her own cases. This coaching comprises an individual follow-up session of two hours with the trainer, as well as follow-up support by phone. Read more.

COURSE OBJECTIVE

As a result of this course, participants will acquire a good insight into statistics and they will be able to choose an appropriate technique and interpret the results correctly.

INTENDED AUDIENCE AND PRIOR KNOWLEDGE

This course is intended for anyone who wants to acquire a solid background in statistical thinking and master the application of it to questions that arise in every day's work. Although theoretical details are skipped whenever possible, it is still about statistics. And although no prior knowledge is required, some affinity for numbers is a definite plus.

COURSE CONTENTS

- Descriptive statistics
  - Graphical techniques: scatter plots, histogram, dotplot, boxplot, normal probability plot
  - Descriptive statistics: means, median, variance, IQR, ...
  - Describing the similarity between variables: covariance & correlation
  - Autocorrelation
- Good data collection practice
  - Sampling strategies
  - Paired comparisons
- Dealing with random variables (probability distributions)
  - Properties of distributions of random variables
  - Distributions for discrete and continuous variables: Binomial, Poisson, normal distribution, Weibull, ...
- Functions of random variables: the z-distribution, χ^2, t and the F-distribution
- Confidence intervals for means, difference in means, variances, proportions, capability indices, ...
- Hypothesis testing
  - Hypothesis testing with confidence intervals
  - Classical hypothesis testing
  - Statistically significant versus practically relevant
  - Type I and Type II errors
  - Power and sample size calculations
- One-way ANOVA
- Simple Linear Regression
- Two-way ANOVA
- Random effects and Nested ANOVA - Variance Components Analysis (R&r study)
- Polynomial Regression

Some cases & applications:

Detecting and proving a change in a process / Quantifying and judging the difference between two products or systems / Deciding on the equivalence of analysis methods / Setting a specification taking the customers' measurement error into account / Calculating the effect of variation in addition and adjustment of a component on the process performance / Calculating the number of data needed to detect a certain improvement / Investigating the effect of different types of constituents on the product properties / Identifying the major source of variation / Investigating the effect of a process parameter on a characteristic.

PRACTICAL

Each course day will be held from 9 am to about 5 pm. The course dates and fees are listed on the application form. The course fee includes handouts, lunches, the individual follow-up coaching and **one year free access to the Statistics-in-Practice guide through the Sherpa-app**: a step-by-step guidance when setting up experiments or analyzing data.

To apply, send us back the application form or apply on-line, at least 20 days before the start of the course.
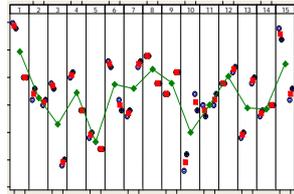
Statistics in Practice
A primer

APPLIED STATISTICS, a (solid) primer

This compact version of the 3-day course 'Statistics in Practice' covers the essential concepts of statistics, from descriptive statistics over hypothesis testing, power and sample size calculations to ANOVA and regression.

COURSE SET-UP

While this course puts a strong emphasis on practical applicability, it is mainly intended to offer a solid background for other courses. If the focus is on applied statistics, we recommend the three-day course Statistics in Practice, which offers more time for hands-on exercises and some additional methods.

TRAINING INCLUSIVE FOLLOW-UP COACHING

Each participant is offered **free individual follow-up coaching**. Follow-up coaching means that each participant can appeal to the trainer's expertise, after having applied the methods treated in the course to his / her own cases. This coaching comprises an individual follow-up session of two hours with the trainer, as well as follow-up support by phone. Read more.

COURSE OBJECTIVE

Although primarily intended as a "foundation" on which other courses are built, this course will result in many eye-openers and at the same time enhance the quality of everyday's decision making.

INTENDED AUDIENCE AND PRIOR KNOWLEDGE

This course is primarily intended for anyone who wants to acquire a solid background in statistical thinking before taking on courses like DOE or SQC.
No prior knowledge is required.

COURSE CONTENTS

Day 1

- Descriptive statistics
  - Graphical techniques: scatter plot, histogram, dotplot, boxplot, normal probability plot
  - Descriptive statistics: means, median, variance, IQR, ...
- Good data collection practice
  - Representative sampling
  - Paired comparisons
- Dealing with random variables (probability distributions)
  - Properties of distributions of continuous random variables
  - The normal distribution and its derivatives (the z, χ^2, t and F-distribution)

Day 2

- Confidence intervals for means, differences in means and variances
- Hypothesis testing
  - Hypothesis testing with confidence intervals
  - Classical hypothesis testing
  - Statistically significant versus practically relevant
  - Type I and Type II errors
  - Power and sample size calculations
- One-way ANOVA – Fixed effects

Some cases &applications: detecting and proving a change in a process / quantifying and judging the difference between two products or systems / calculating the number of measurements or experiments needed to detect a certain improvement / investigating the effect of different types of a constituent on the product properties / investigating the effect of a process parameter on a characteristic

PRACTICAL

Each course day will be held from 8.30 am to about 5.00 pm. The course dates and fees are listed on the attached application form. The course fee includes handouts, lunches, the individual follow-up coaching and **one year free access to the Statistics-in-Practice guide through the Sherpa-app**: a step-by-step guidance when setting up experiments or analyzing data.

To apply, send us back the application form or apply on-line, at least 20 days before the start of the course.
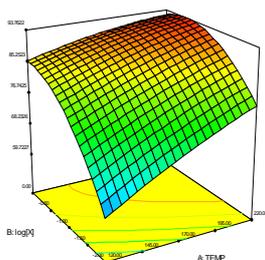
Design of Experiments
in chemical and related industries

COST-EFFICIENT RESEARCH

Research & Development: searching for new products and improving existing processes. This can be accomplished efficiently and optimally only in one way: the way of Experimental Design. Experimental Design, alias Design of Experiments (DOE) or Statistical Design of Experiments (SDE), not only guarantees reaching the preset goal, but on top costs a minimum number of experiments ... on condition that one takes into account the characteristics of the field of application. The optimal strategy of experimenting will be different in chemical industries as compared to for example the automotive industry. This explains the specific context of this course.

COURSE SET-UP

Four courses on DOE are offered: an introductory course (DOE-I: 4 days), a follow-up course (DOE-II: 1 day), a course on Principal Properties Design (0.5 day) and a DOE course for formulations (2 days).

DOE-I is limited to standard designs for continuous variables.

Categorical variables (e.g. type of solvent or type of reactor) and generating and evaluating optimal designs will be discussed in DOE-II.

The Principal Properties Design course deals with how solving / circumventing the problem of multi-level categorical variables.

Designs for problems where the sum of constituents is constant will be discussed in the fourth course.

TRAINING INCLUSIVE FOLLOW-UP COACHING

Each participant to DOE-I is offered **free individual follow-up coaching**. Follow-up coaching means that each participant can appeal to the trainer's expertise, after having applied the methods treated in the course to his / her own cases. This coaching comprises an individual follow-up session of two hours with the trainer, as well as follow-up support by phone. Read more.

DOE-I PRACTICAL

Each course day will be held from 9 am to about 5 pm. The course dates and fees are listed on the application form. The course fee includes handouts, lunches, the individual follow-up coaching and **one year free access to the DOE-in-Practice guide through the Sherpa-app**: a step-by-step guidance when setting up experiments or analyzing data.

Application is possible until 20 days before the start of the course.

DOE-I

COURSE SET-UP

In this course the topics listed below will be theoretically treated, and illustrated with exercises. This course also includes an Experimental Design "game": the participants go through all phases of a project: from problem analysis over choosing a design, up to analysing simulated data and reporting the results.

COURSE OBJECTIVE

At the end of the course the participants will be able to formalise a problem, find the appropriate design type and, except for complex problems, construct this design. The participants will also master the statistical analysis of standard designs for continuous variables.

INTENDED AUDIENCE AND PRIOR KNOWLEDGE

Those who want to acquire an "active" knowledge in setting up experiments according to Experimental Design theory, as well as people who want to understand both the Experimental Design principles and the results of the statistical analysis.

Participants to DOE-I are assumed to have a thorough understanding of some basic statistical techniques (normal probability plot, confidence intervals, hypothesis tests, Type I & Type II errors, power, ANOVA, regression). The 2-day course 'Statistics in Practice – A primer' is ideally suited as a preparation to DOE-I.

The required prior knowledge can however also be obtained by private study. The course material consists of the handouts of the 'Statistics in Practice' course, including problems and solutions. This selfstudy package can be ordered on-line or through the application form.

COURSE CONTENTS

- One Variable At a Time versus Experimental Design
- The concept of interacting variables
- Replication, 2-level blocking variables and randomisation
- 2-level designs: Full Factorial, Fractional Factorial, Minimum-Run designs, Foldover designs, Confounding, Resolution
- Multi-level Response-Surface-Model designs
- Power-analysis: which is the smallest significant effect I can find, how many experiments will it cost to find an effect of a particular size
- Analysing the results with Analysis of Variance
- Residual analysis and graphical validation
- Visualisation of the results
- Response transformation
- Multi-response optimisation

- Experimental Design game

DOE-II

Design of Experiments - additional applications

DOE-II deals with several extensions to the standard design approach that offer a solution to problems occurring in practice relatively frequently, in particular categorical variables (e.g. type of additive) and factors that are subject to combined constraints, for which standard (symmetrical) designs are inadequate and optimal designs need to be made.

COURSE SET-UP AND PRIOR KNOWLEDGE

This course builds further on what was treated in DOE-I. The optimal-design part focuses on generating and evaluating designs, and less on the statistical analysis of the results.

Theory will be illustrated with hands-on exercises.
Those who participate to DOE-II are assumed to have attended DOE-I.

COURSE OBJECTIVE

With the knowledge acquired in DOE-II, participants will be able to set up a design and to analyse the experimental results for almost all practical problems.

COURSE CONTENTS

- Categorical variables: classical designs and their analysis
- Evaluation of designs: how accurate will the resulting model be, which effects can I determine, condition number, information index, VIF, D/G efficiency, Fraction of Design Space (FDS)
- Optimal designs: optimal configuration of experiments for constrained systems, for which symmetrical designs are inadequate

DOE-II PRACTICAL

Each course day will be held from 9 am to about 5 pm. The course dates and fees are listed on the application form. The course fee includes handouts and lunches.

Application is possible until 20 days before the start of the course.

PRINCIPAL PROPERTIES DESIGN

In several situations standard designs are inadequate, such as situations where categorical variables need to be investigated at many levels (e.g. type of solvent, additive, etc.). Principal Properties Designs are designs that replace categorical variables by continuous descriptors. At the basis of these designs is Principal Component Analysis (PCA).

Being a multivariate method, in a DOE-context PCA can also be powerful in the analysis of multi-response problems. It can reveal the correlation between all responses which helps identifying outlying values and prove unattainable targets (e.g. low value of response Y_1 combined with high values of Y_2 when they exhibit strong positive correlation).

COURSE SET-UP AND PRIOR KNOWLEDGE

In this course the basics of Principal Component Analysis will be discussed, with two illustrations of its use and power in a DOE context.
This session will be closed with hands-on exercises.
Those who participate to this course are assumed to have attended DOE-I.

COURSE OBJECTIVE

The objective of this course is to provide insight in the way multivariate methods can be of aid in setting up designs for multi-level categorical factors, and in analyzing multi-response problems.

COURSE CONTENTS

- Principal Component Analysis: the basics and interpretation of results
- Principal Properties Design
- The analysis of multi-response problems

PRACTICAL

This half-day course is offered in-company only.

DOE FOR FORMULATIONS

In this 2-day course designs will be discussed for formulations (e.g. polymer blends), including D-optimal designs that will often be required. An abridged 1-day version is available as in-house course.

COURSE SET-UP AND PRIOR KNOWLEDGE

Theory will be illustrated with hands-on exercises. Participants are assumed to have attended DOE-I.

COURSE OBJECTIVE

At the end of the course the participants will be able to set up designs for formulations and to analyse the experimental results.

COURSE CONTENTS

- Formulations – an introduction
- Designs for regular design regions
- Models for mixture problems: slack variable, Scheffé and Cox models
- Analysis, interpretation and visualisation of mixture models
- Designs for irregular design regions (optimal designs)
- Irregular regions: Response Surface Modelling
- Mixture-process problems

The abridged in-company-only version covers Scheffé models only, does not cover mixture-process problems and treats optimal designs as a black box.

PRACTICAL

Each course day will be held from 9 am to about 5 pm. The course dates and fees are listed on the application form. The course fee includes handouts and lunches.
To apply, send us back the application form or apply on-line, at least 20 days before the start of the course.
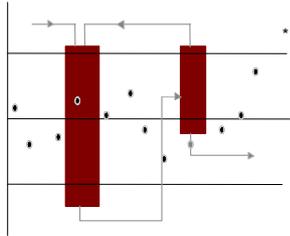
Statistical Quality Control

WHY A SPECIFIC SQC COURSE?

Where SPC (Statistical Process Control) can be roughly defined as 'control charting', SQC (Statistical Quality Control) has a much broader meaning; it involves SPC, capability analysis as well as Measurement System Analysis (MSA).

However, the way SQC is being treated in most textbooks and courses doesn't focus enough on the typical problems of complex processes, and very often standard methods are not directly applicable. Also the specificity of the measurement system has its implications on the statistics involved, and should be explicitly taken into account.

In this course modifications and extensions to classical SPC are being proposed.

COURSE SET-UP

In this two-day course theoretical aspects are alternated with practical exercises. All examples and exercises are based on chemical processes.

The book "Introduction to Statistical Quality Control" by Douglas C. Montgomery is strongly recommended as additional reference material.

COURSE OBJECTIVES

The goal of this course: to offer a thorough introduction to SQC, with emphasis on typical situations in the process industry: one-at-a-time sampling, short-run processes, batch processes, serial correlations ("drifts") and complex measurements.

INTENDED AUDIENCE AND PRIOR KNOWLEDGE

This course addresses those who are at level with the material treated in 'Statistics in Practice – A primer'. No prior knowledge of SQC is required.

COURSE CONTENTS

Introductory statistics for SQC
- Review of 'Statistics in Practice – A primer'

Standard SQC
- Basic principles of control charts
- Traditional control charts: X, X-bar, R, S, S^2, MR2, p, np, c and u
- Moving Average (MA) chart
  Exponentially Weighted MA (EWMA) chart
  Cumulative Sum (CUSUM) charts
- Process Capability Analysis: meaningful measures

SQC for the lab and measurement systems
- %R&r / Measurement Capability / Precision to Tolerance
- Identification of Variance Components: R&r study
- Monitoring measurements and the lab

SQC in process industry – specific solutions
- Control charts for 'short-run' processes and 'between-within batch' charts
- Serial correlation: detection and remedy
- SQC in an Automatically Regulated Process

PRACTICAL

This course is offered in-company only.
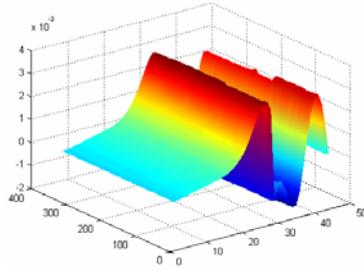
Spectroscopic (NIR) Calibration

WHY SPECTROSCOPIC CALIBRATION?

Over the last two decades more and more companies opt for (on-line) NIR calibration models as an alternative to time-consuming and expensive lab analyses. This is often the case throughout the whole production process: to check the quality of the feedstock at delivery, to obtain timely information on different process streams, and to quantify the quality of the end product.

Also in food companies the use of NIR calibration models for e.g. the monitoring and automation of processing of biological products has become common practice.

Due to continuous chemometrical developments, the number of applications of spectroscopic calibration - especially NIR - continues to increase, despite the strong overlap of spectral bands and peaks in the NIR region.

COURSE SET-UP

In this course we will go through the different steps required for a successful Spectroscopic Calibration: from sample selection over validation and interpretation of the models, up to guidelines and recommendations for the maintenance and update of calibration models in the future. Since emphasis will be put on practice, theoretical aspects will be alternated with practical exercises.

TRAINING INCLUSIVE FOLLOW-UP COACHING

Each participant is offered **free individual follow-up coaching**. Follow-up coaching means that each participant can appeal to the trainer's expertise, after having applied the methods treated in the course to his / her own cases. This coaching comprises an individual follow-up session of two hours with the trainer, as well as follow-up support by phone. Read more.

COURSE OBJECTIVE

In this course, the participants will develop a feel for the multivariate approach to spectroscopic calibration, gain insight into the underlying methods, learn to perform a multivariate calibration in "normal" situations and recognise problem situations.

INTENDED AUDIENCE AND PRIOR KNOWLEDGE

If your aim is to perform multivariate calibrations and/or to properly interpret the results, this course will satisfy your needs.

No prior knowledge is required.

COURSE CONTENTS

Day 1:

- NIR introduction
- Exploratory Multivariate Analysis
    - Visualisation of information in big data sets
    - Principal Component Analysis (PCA)
    - Cluster analysis: searching for groups of similar samples

Day 2:

- Basic principles of calibration techniques
    - Multiple Linear Regression (MLR)
    - Principal Component Regression (PCR)
    - Partial Least Squares (PLS)
- Interpretation of calibration models
- Model validation
- Preprocessing and scaling of spectra

Day 3:

- Detection of outliers and non-linearities
- Prediction with calibration models
- Selection of calibration samples
- Standardisation of calibration models
- Monitoring the performance of (on-line) calibration models

PRACTICAL

Each course day will be held from 9 am to about 4.30 pm. The course dates and fees are listed on the application form. The course fee includes handouts, lunches and the individual follow-up coaching.
To apply, send us back the application form or apply on-line, at least 20 days before the start of the course.
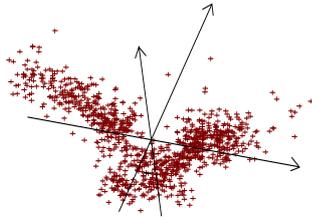
Multivariate Data Analysis

WHY MULTIVARIATE DATA ANALYSIS?

The massive amounts of collected data, often just stored without being analysed, might contain valuable information about wanted and unwanted variation in process factors and product properties. A multivariate approach allows combining multiple series of (non-designed) data. Taking into account all available information will lead to insights, such as the identification of parameters that have an impact on the quality of both chemical and biological products, which then provides directions towards quality improvement.

COURSE SET-UP

During day 1 qualitative aspects of multivariate data analysis will be treated: exploring the data, searching for correlations, clusters, outliers, ...
In day 2 we come to the model building part: searching for relations between groups of variables. Emphasis will be put on correctly selecting and applying the appropriate multivariate method, and on the correct interpretation of the results.
During this course the course matter will be immediately applied on real-life cases / exercises on PC.

TRAINING INCLUSIVE FOLLOW-UP COACHING

Each participant is offered **free individual follow-up coaching**. Follow-up coaching means that each participant can appeal to the trainer's expertise, after having applied the methods treated in the course to his / her own cases. This coaching comprises an individual follow-up session of two hours with the trainer, as well as follow-up support by phone. Read more.

COURSE OBJECTIVE

Multivariate analysis comprises a broad gamma of techniques to extract information from massive amounts of data, but at the same time contains an equally broad gamma of pitfalls. Breaking down the barriers towards multivariate analysis and smoothing the path towards expertise building, while at the same time making the participants aware of the problems that arise, are considered to be the main objectives of this course.
At the end of the course participants will be able to select the appropriate method to solve different kinds of problems, analyse the data and correctly interpret the results.

INTENDED AUDIENCE AND PRIOR KNOWLEDGE

This course will be of great help to anyone who in daily practice is faced with large data tables and who is not familiar with the application of multivariate methods, and to those who have already been playing around with multivariate methods but don't feel confident in the interpretation of multivariate graphs and numbers.
Prior knowledge is not required.

COURSE CONTENTS

Day 1: Exploratory multivariate analysis

- Visualisation of big datasets
- Principal Component Analysis (PCA)
- Cluster analysis: searching for groups of similar samples

Day 2: Quantitative analysis: in search of cause-effect relations

- Multiple Linear Regression (MLR) with uncorrelated variables
- Multiple Linear Regression (MLR) with correlated variables
    - Stepwise regression
    - The collinearity problem
    - An overview of the pitfalls
- Principal Component Regression (PCR)
- Partial Least Squares (PLS)
    - Interpretation of PCR and PLS models
    - Validation of regression models
    - Detection of outliers and non-linearities
    - Prediction with regression models
- Some alternatives

Day 3: Quantitative analysis: the sequel + specific applications

- Feasibility study: does a quantitative analysis make sense?
- Classification (supervised pattern recognition): predicting class membership
    - Linear Discriminant Analysis (LDA)
    - Soft Independent Modeling of Class Analogy (SIMCA)
    - PLS-DA
- Specific applications:
    - QSAR / QSPR (Quantitative Structure Activity / Property Relations)
    - Multivariate SPC (M-SPC)
    - Principal Properties Design
    - ......

PRACTICAL

Each course day will be held from 9 am to about 4.30 pm. The course dates and fees are listed on the application form. The course fee includes handouts, lunches and the individual follow-up coaching.
To apply, send us back the application form or apply on-line, at least 20 days before the start of the course.

Course calendar 2017-2018

Course	Course Dates	Language[*]	Location	Fee
❑ **Statistics in Practice**	❑ October 24-26, 2017	Dutch	Leuven	€ 1.500
	❑ May 29-31, 2018	Dutch	Leuven	€ 1.500
❑ **Private study package**				€ 300
❑ **DOE-I**	❑ January 30-31, February 6-7, 2018	English[**]	Leuven	€ 1.950
❑ **DOE-II**	❑ February 8, 2018	English	Leuven	€ 500
❑ **DOE for formulations**	❑ *Dates to be confirmed*	English	Leuven	€ 1.000
❑ **Principal Properties Design**	*In-company only*			
❑ **Multivariate Data Analysis**	❑ January 23-25, 2018	English[**]	Leuven	€ 1.500
❑ **Spectroscopic (NIR) Calibration**	❑ *Dates to be confirmed*	English[**]	Leuven	€ 1.500
❑ **Statistical Quality Control (SQC)**	*In-company only*			

[*]*All course notes are in English*
[**]*Unless Dutch-speaking participants only*
Fees valid for the listed course dates only
Fees exclusive 21% VAT

----------------------- *On-line applications (preferred): www.cq.be* -------------------------------

Application

Please tick the boxes (title + dates) corresponding to the course you want to apply for.

Mr. / Mrs.   First Name : ....   Last name: ……...

Company : …... Job Title : ....

Address : ....…….….…......…….............

Phone : ……………...   E-mail : ……….......................................…….….…………….........

Education / Prior knowledge : ………………………….………….….…….……..……………………...………………

Dietary preferences : ....

Invoice address (if different from above) : ....……………..........

VAT Nr. : ……..

The course fee will be paid after receipt of the invoice, **before the first course day**. I have taken note of the general conditions on payment and cancellation.

Date : ....……...............   Signature: ....

In case you can not attend a course you applied for, you can always let a colleague take your place, without additional cost. On cancellation until twenty days before the course start, half of the course fee is due. After that the full amount needs to be paid. CQ has the right to cancel a course until 10 days before the start of the course, in which case we will provide a complete refund. CQ also has the right to reject the application of course candidates without further motivation.

General conditions for follow-up coaching

What is follow-up coaching ? Follow-up coaching is intended to support the application of methods / techniques covered in a certain course in daily practice. So after having applied the course matter to their own cases, course participants can make use of the trainer's expertise to evaluate / discuss their results. So the purpose of follow-up coaching is guidance, not outsourcing. Answers to questions concerning topics outside the course context are not considered as follow-up coaching, but as consulting.

What does follow-up coaching comprise for open courses?

For open courses, follow-up coaching comprises:

-   One individual follow-up session of 2 hours in CQ's offices within 6 months after the course[1]
-   A 2 hour budget for telephone support within 12 months after the course[2]

[1] Location for the individual follow-up session are CQ's offices in Leuven (unless otherwise agreed with the participant). Participant will make an appointment with one of CQ's consultants, within 6 months after the last course day.

[2] If participant wants support by telephone, he / she will first make an appointment with one of CQ's consultants, and briefly describe by e-mail the subject of his / her call. The 2-hour budget can be spent on several separate calls. For each call however the remaining budget will be decreased by minimum 15 minutes.

What does follow-up coaching comprise for in-company courses?

For in-company courses, follow-up coaching comprises:

-   One 4-hour follow-up session on-site within 6 months after the course[1]
-   A 4 hour budget for telephone support within 12 months after the course[2]

For in-company courses 'the company' will appoint a coordinator, who will take care of the local organization of the 4-hour follow-up session, and whom participants, before contacting CQ, will inform about their request for support by telephone.

[1] One 4-hour session, to be organized within 6 months after the last course day, is included in the course fee, expenses for travel and accommodation are not included. This follow-up session can be arranged as individual meetings or as a plenary session or a combination of both.

[2] If a participant wants support by telephone, he / she will first make an appointment with one of CQ's consultant, and briefly describe by e-mail the subject of his / her call. The 4-hour budget can be spent on several separate calls. For each call however the remaining budget will be decreased by minimum 15 minutes.