

## Introduction to Statistics for Research & Development Using XLSTAT

Course Developed and Written by Gemma Hodgson

Presented by Gemma Hodgson, Qi Statistics Ltd  
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Venue:  
**XL STAT**  
**35 Rue Thiac**  
**33000**  
**Bordeaux, FR**

### Course Summary

This basic but wide-ranging course covers the easy to use features in XLSTAT for investigating, visualising and performing basic statistical techniques on data sets typical to research and industry settings. There are many basic concepts that need to be understood before statistics can be used to its full potential to give useful and informative answers. This course ensures that these concepts are understood in a non-technical way and then practised using real data examples.

Mathematical details are kept to a necessary minimum and we focus on the interpretation of the outputs from XLSTAT and illustrate applications with case studies using data from surveys, instrumental analysis, manufacturing processes, clinical trials and biological data.

We aim to explain the objectives of the techniques and to send you away with a better understanding of which technique to use when.

No previous knowledge of statistics is necessary with this course, as we start right from the beginning. It also serves as a useful refresher course to those who once studied statistics as part of a college course.

There is plenty of opportunity for practice using XLSTAT through “hands on exercises” for which annotated solutions are provided.

## Workshop Outline

### Day 1

1. Back to the beginning – Refresh the absolute basics of statistics
  - Types of data
  - Summary Measures
  - What is variability?
2. How sure are we? - Assessing Variability
  - Data Visualisation
  - Frequency Distributions
  - Measures of Variability
  - Degrees of Freedom
  - Descriptive Statistics
3. The answer could be...? - Estimation
  - Estimation
  - Confidence Intervals
  - Presenting Results
  - Data Requirements
4. Which is better? - Making Statistical Comparisons
  1. Testing against a target (T Tests)
  2. General Hypothesis tests
  3. Comparison of 2 samples (means and variance) inc ANOVA
  4. Problems with statistical significance and p-values

### Day 2

5. Analysis of Binary (Yes/No)Data
  - Estimating Response Rates with uncertainty
  - Testing for significance
6. Power & Sample Size
  - How big a sample do I need to meet my objectives?
  - What is statistical power?

- Statistical performance v practical considerations
- Power & Sample Size

#### 7. Correlation & Simple Regression

- Correlation – what is measures
- Simple trend modelling – assessment of fit
- Diagnostics

#### 8. Multiple Regression & Further Modelling

- Variable selection techniques
- Pitfalls for the unwary
- Modelling curvature

#### 9. Study Design

- Issues to consider

### Software

You will need to bring a laptop with the latest version of XLSTAT installed. If you don't have a licence you can download a 14 day trial version before the course. If you cannot bring a computer we can arrange laptop hire for an additional £50 (+VAT) – please contact us separately or inform us at booking. A copy of XLSTAT software can be purchased at a 30% discount through Qi (available via Qi website when booking, or after training course).

### The Trainer

Gemma Hodgson has worked as a statistician, project manager, trainer and business consultant for over 25 years across a wide variety of projects within large and small multidisciplinary teams. Gemma has an MSc in Medical Statistics, was a statistician and a global project manager at Pfizer, before joining Takeda Global R&D as a principal statistician in 2006. Since joining Qi in 2012, Gemma's business background and excellent statistical and communication skills are invaluable to our clients wanting to maximise information for competitive advantage from their data.

**Pricing and Fees\***

Registration Fee - Course attendance (excl VAT)	£1150
XLSTAT Base (one year)	£172
Laptop Hire (if necessary)	£50

\*Payment may be made in £, \$ or Eu. The current exchange rate will be applied at the time of payment.

- Fees include folder of course material, refreshments and lunch.
- Discounts: We offer a 10% discount on registrations when two or more people from the same company register for the same course at the same time.
- Course fees reduced by 10% for members of academia

Book online from this link: <https://www.qistatistics.co.uk/product/intro-to-statistics-using-xlstat/>

**For further information or questions contact:  
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