

Analysis of Variance Masterclass

This one-day workshop gives you the opportunity to consider issues that we are sure you worry about from time to time in your everyday analysis of consumer and sensory test data

Course Developed and Written by Hal MacFie and Anne Hasted

Presented by Anne Hasted, Qi Statistics Ltd

16th April 2019

Venue:

Microtek Labs

5th Floor, 230 W. Monroe

Suite 550 Chicago, IL 60606 USA

Course Summary

Our key tool is Analysis of Variance, but this technique makes assumptions about the underlying distributions in our data – what are these assumptions and do they matter? Do you understand all the outputs that the software spills out? We will cover standard ANOVA, mixed model ANOVA, repeated measures analysis- when and how it should be used, nested models and models with covariates.

We will also discuss the over reliance on statistical significance in reporting data, the relevance (or not) of multiple comparison tests and alternative approaches that have been recently proposed.

The day will be carried out using the modelling functionality in XLSTAT

Software

The day will use XLSTAT to analyse data and there will be opportunities for practical work. Computers will be provided with XLSTAT loaded, so no need to bring your own laptop unless you prefer to work from your own machine. If so please make sure you have an up to date version of XLSTAT on your laptop.

The Trainer

Anne Hasted began her career as an academic statistician at Reading University. She is the founder and senior consultant at Qi Statistics Ltd, a UK based consultancy, offering statistical training and support to research and industry. She has many years training and consultancy experience in the food industry, particularly in the

areas of consumer and sensory research and is well recognised for providing user friendly training courses.

Course Schedule

9.00-9.45	Quick review of the basics. Properties and precision of means – standard error- confidence intervals. Central Limit theorem – its relevance to us. Statistical significance –what does it tell you – what does it not tell you. Dangers and alternatives.
9.45-10.00	ANOVA Exercise as refresher
10.00-11.00	Analysis of Variance options and outputs examined: Model parameterisation. Unbalanced test data, the different sums of squares, which to use, LSMEANS – how to interpret them
	<i>Break</i>
11.15-12.15	The four assumptions we make in the analysis. Normality, Homogeneity, Independence, No Outliers. How to check them How “bad” can my data be before I have to worry? Which assumptions are most critical. ANOVA using JAR or even CATA data. XLSTAT Exercise
	Lunch
13.00-13.30	Multiple comparison tests, family error rate and false discovery rate. How to deal with all the options available.
13.30-14.30	Fitting Mixed Models to replicated test data – classical ANOVA approach v REML. Which residuals to examine for replicated tests (benefit of central limit theorem)
	Break
14.45-15.45	Repeated Measures ANOVA – when should it be used? traditional approach of significance adjustment v modern approach of modelling error structure . XLSTAT Exercise
15.30-16.15	Fitting Nested models -their application in investigating demographic effects and structured replication variation. XLSTAT Exercise
16.15-17.00	Modelling products and variables (covariance) – satiation trials. XLSTAT Exercise
17.00	<i>Close</i>

Training Facility

Microtek Labs
5th Floor
230 W. Monroe
Suite 550
Chicago, IL 60606
USA



The building is in the Loop, at the corner of Franklin and Monroe, one block from the Sears Tower. The facility is 3 blocks from both the Union and Ogilvie train stations. MicroTek is on the 5th floor.

Please see the facility website www.mclabs.com/room-rentals/microtek-chicago for details of hotels nearby with discounted rates. We usually stay at La Quinta which is next to the facility and very reasonable with a free breakfast. However Club Quarters is also close and gets good scores from attendees

Pricing and Fees*

Registration Fee - Course attendance	£675
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*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/upcoming-training/qi-hal-macfie-courses>

Please select your preferred payment option and then click the Checkout Now.



Pay Cheque or Direct Payment

***To make a payment in \$ or Eu please choose the 'pay cheque or direct payment' option on the booking page after adding the items to your basket and we will be in touch to take your payment, but your booking will still be registered in the booking system.**

IMPORTANT NOTES:

Registration Policy: Registration is not final until payment is received. Unpaid spaces will be opened to new registrants 30 days ahead of the course. Virtual attendees must register and make payment at least 30 days before the start of the course to secure a virtual seat.

Payment: Payment may be made in, Euros, GB pounds or US Dollars via the Qi Statistics website or by transfer into Qi Statistics' currency accounts. Contact the course administrator Karen Starke: karen@qistatistics.co.uk for routing and IBAN details of the currency account you require.

Refund policy: Cancellation of registration can be made up to 30 days ahead, and return of payments, minus reasonable administrative expenses, will be made for these cancellations. Cancellations within 15 to 30 days of the course start will receive a credit for a future course. Registrants who fail to attend or cancel less than 15 days prior to the seminar start date are responsible for the entire fee. Substitution of another person for the same course may be made at any time.

Course Cancellation: Qi Statistics Ltd retains the right to cancel the course 30 days before the start date if less than 4 delegates have registered by that date. Please do not book your travel before this.

**For further information or questions contact:
Qi Statistics Ltd on info@qistatistics.co.uk or telephone +44 (0)1189 345722**