



A two day EXCEL2010 training Workshop

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The Workshop objective:

The aim of this workshop is to assist students and researchers use Excel 2010 to create statistical field plans and to test for ANOVA assumptions; to calculate Student's t-LSD and assign a, b, c letters to non-significant ranges; to represent result in tables and graphs with LSD's added; to perform regression and correlation analysis; to use pivot tables to summarize data and check data for coding errors and to apply graphic's efficiently for different situations.

The student will perform the above on hand and will also be given some exercises for the different topics discussed.

Content: Data Analysis with Excel 2010 as Basis

1. What you need to know to perform Data analyses
2. Activating Analysis Tools in Excel
3. Some limitations with Excel
4. Experimental Designs that can be analysed with Excel
5. Creating your own randomized field plan
 - For a Completely Randomized Design
 - For a Randomized Complete Blocks Design
 - For a Latin Square Design
6. Performing a One-way Analysis of Variance (ANOVA)
7. Testing the assumptions for a valid ANOVA
 - Testing for typing and data errors – Data Filter and validation
 - Testing for normality in One-way design : Identifying outliers
 - Descriptive Statistics : kurtosis and skewness
 - Histogram can help visualize the distribution of the standardized residuals
 - Testing if treatment variances are of comparable types
8. Performing a One-way ANOVA data analysis

- Calculating Student's t-LSD to compare treatment Means
 - Assigning a, b, c's to non-significant ranges
 - Drawing Bar Graphs with LSD Bar with values and a, b, c's added
9. Performing data analysis from a CRD and RBD with Sub-Samples.
 10. Performing data analysis for a 2x2 factorial treatment design
 11. Performing data analysis for a Split-Plot treatment design
 12. Performing data analysis for a Latin square design
 13. Performing a paired t-test or t-test for independent samples
 14. Describing Survey data
 15. Calculating Chi-Square to test for association and create graphs
 16. Calculating Significance level using the normal approximation for difference between two proportions and total counts
 17. Regression with Excel
 - Method to use
 - Creating a Predicted plot, Residual plots and Normal probability plots

Content: Pivot Tables with Excel 2010 –TE Mathebula

18. What is a Pivot Table?
19. What to know before using Pivot Tables
20. Understanding Pivot Tables
21. Examples

Content: Graphics with Excel 2010 – C Ngwane

22. What is the purpose of using graphs
23. Bar charts, Pie Charts and Lines
24. Bar chart with more than one data
25. Bar/Line combined
26. 3D Charts
27. Spider Web

The workshop outcomes:

The student or researcher will be able to create their own experimental randomized field plans and be able capture data and setup an ANOVA table with degrees of freedom with Excel 2010. They will be able to test for assumption and the interpretation of ANOVA table. They will be able to use formulas, coping top to bottom and left to right etc. Also to draw graphs and tables of means with LSD added. The Student will also learn a lot of features that can be useful when using Excel.

The quotation amounts:

Excel 2010 workshop = R495 + Tax per attendant / day

PowerPoint slideshows handouts will be given.

This workshop can be presented at your place/division/institute if the number of attendance is 10 or more and the travel and accommodation of the presenters were arranged and paid for by the group where workshop will be presented.

Workshop program:

Day One

08:00-8:30 Registration

08:30-10:00 Points 1-4 of Excel 2010 Workshop Content

10:00-10:15 *Refreshments*

10:15-11:45 Point 5 of Excel 2010 Workshop Content

12:00-12:15 *Refreshments*

12:15-13:00 Point 6 of Excel 2010 Workshop Content

13:00-14:00 *Lunch (Own Lunvh)*

14:00-15:00 Points 7-8 of Excel 2010 Workshop Content

15:00-15:15 *Refreshments*

15:15-16:30 Points 9 of Excel 2010 Workshop Content

Day Two

08:00-8:30 Registration

08:30-10:00 Points 10-12 of Excel 2010 Workshop Content

10:00-10:15 *Refreshments*

10:15-11:45 Point 13-14 of Excel 2010 Workshop Content

12:00-12:15 *Refreshments*

12:15-13:00 Point 15-17 of Excel 2010 Workshop Content

13:00-14:00 *Lunch (Own Lunch)*

14:00-15:00 Points 18-21 of Excel 2010 Workshop Content

15:00-15:15 *Refreshments*

15:15-16:30 Points 22-27 of Excel 2010 Workshop Content