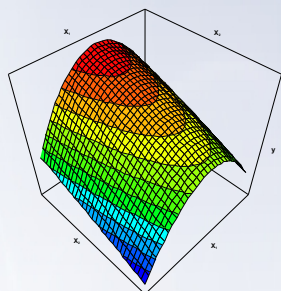
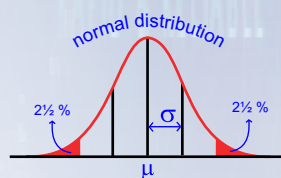
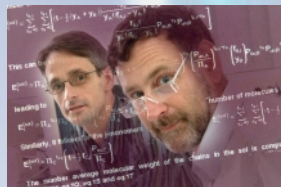


Finding solutions is our business....

.... and we're pretty good at it

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Technical note Resolve 053



Courses in the field of statistics

Base Course Statistics Course Design of Experiments

Experimental data has to be analyzed.

Performing experiments leads to the collection of data. These numbers should be analyzed and interpreted in order to draw the correct conclusions. As such, the statistical analysis of the data is an integral part of performing the experiments.

As DSM Resolve, we can offer courses in the field of applied statistics at two different levels. We do know that the experimentalist is seldomly interested in the beautiful and elegant mathematical details that are behind the statistical procedures; the interest is on how to apply the techniques, and how to interpret the results. That is exactly how the courses were developed. The basic principles are generally conceptually easy, and the mathematics can be skipped. Concepts like confidence levels and p-values in significance tests can be illustrated and 'experienced' by drawing random numbers using software packages. Apart from that, the statistical techniques are illustrated using examples that are relevant for coworkers of DSM.

Base Course.

The first course is a Base Course. It starts at the very basis, to refresh the knowledge on the relevant details concerning sample means, standard deviations and standard errors. Also the concepts used in statistical hypothesis testing are addressed.

Well-known statistical tests as the t- and F-test are presented. The final chapters of the course focus on one-way analysis of variance and on linear regression analysis.

Design of Experiments.

The second course is about Design of Experiments, and starts more or less at the level where the Base Course ends. As the design of an experiment is not very useful if the tools and knowledge concerning the analysis are missing, attention is paid to statistical techniques like analysis of variance and regression analysis. Model validity criteria are vital for a proper and meaningful statistical analysis. When these concepts are clear, the actual Design of Experiments-part is simple. The concepts on (fractionated) factorial designs, response surface designs, Box-Behnken and Plackett-Burman designs bear no secrets any more. For this course use is made of the software packages Excel and Modde (version 6.0).

Syllabus.

For both courses an extensive syllabus has been written, containing the theory, descriptions on how to use the software, and exercises. The courses are given in Dutch, but it is anticipated that English versions will be developed in the near future.

Specific courses can be developed on demand.