Course: Statistics 2 credits: 5

Course code	CTVH24STATIS2
Name	Statistics 2
Study year	2026-2027
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	M.E.F. Apol
Modes of delivery	Practical / Training Tutorial
Assessments	Statistiek 2 Practicum - Other assessment Statistiek 2 Theorie - Computer, organised by STAD examinations

Learning outcomes

This module has the following learning outcomes:

You perform linear and non-linear regression (ordinary and multiple) for a given or experimentally obtained dataset, interpret the data and apply model selection.

You use simultaneous Design of Experiment (DoE) methods to optimise factors for a given process, choosing the right design and using regression and model selection (Surface Response Method) to locate the optimum.

You use univariate and multivariate sequential optimisation methods (Binary, Fibonacci, Simplex and modified Simplex) for optimisation of factors for a given process, and use them to localise the optimum.

You select the appropriate techniques and methods in a screening phase and in a detailed optimisation phase.

You use matrix algebra as part of optimisation of process parameters and can use it to determine the quality of an experimental design.

Content

As a chemical technologist, you will often be involved in improving and optimising a production process. To give well-founded advice, you will often do a number of experiments. This module covers various optimisation techniques, with the aim of obtaining as much relevant information as possible with as few experiments as possible. Simultaneous (Design of Experiment, Surface Response Method) and sequential methods (Binary, Fibonacci, Simplex and Modified Simplex) approaches are discussed and applied to practical problems. Assessment is by means of a computer-based examination using Excel, Mathcad and Wolframalpha.

Included in programme(s)

Chemical Engineering

School(s)

Engineering, Life Sciences & ICT

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