Join Radboud Summer School 2018!

Chemometrics: Introduction to Advanced Data Analysis

change perspective

Radboud University
Analytical chemical instruments can record massive amounts of data in just a small fraction of time, which need to be analysed for instantaneous management decisions. Such volumes of data need to be processed by advanced data analysis methods. The power of such methods lies in their multivariate nature. For example, an infrared spectrum may consist of a thousand absorbances measured at different wavelengths. While traditional data analysis methods focus on analysis of each wavelength separately, advanced chemometric methods focus on the entire spectrum at once, thereby taking much more information into account.

The research field of chemometrics focuses on the development and improvement of advanced data analysis methods for the analysis of chemical data, including e.g. the removal of instrumental artefacts by data pre-processing, the prediction of sample properties, and comprehensive assessment of significance by validation.

During this course, you will become familiar with the most commonly used chemometric data analysis methods. These include tools for exploratory data analysis (e.g. Principal Component Analysis, PCA), as well as for clustering, classification, and regression (e.g. Partial Least Squares regression, PLS). Each subject will be introduced with a lecture, after which you will gain hands-on experience with the tools during (computer) exercises. The focus will be on interpretation of the results, rather than an extensive theoretical background.

Internationally renowned chemometricians from the Analytical Chemistry department at Radboud University will introduce state-of-the-art chemometrics. Throughout the course, guest lecturers will present a range of cases where chemometrics is used in industry, in government, and in the hospital. Relevant data will be provided during the course.

For whom is this course designed
A wide range of applicants from the field of natural sciences, e.g. advanced bachelor students who want to pursue data analysis in their masters; master students who want to do a PhD in which data analysis will play a key role; and PhDs, post-docs and professionals who already have data available and want to gain experience with data analysis.
After this course you are able to
• Interpret the results of different chemometric methods
• Properly perform advanced data analysis, including pre-processing and validation
• Integrate chemometrics in your own chemical studies or research

Admission documents
Motivation letter and CV

Number of EC
2 ECTS credits

Entry level
Advanced Bachelor, Master, PhD, Post-doc and Professional

Course leader
Dr. J.J. (Jeroen) Jansen, (Acting) Head of Department, Analytical Chemistry, Radboud University

Dates
Monday 13 August – Friday 17 August 2018

Course fee
€500 students, €900 professionals

Discounts
• 10% discount for early bird applicants. The early bird deadline is 1 April 2018.
• 15% discount for students and PhD candidates from partner universities.

Deadline application, 1 June 2018
Want to be part of the RSS experience?

More than just a course!
Radboud Summer School is more than an academic event. It is a unique opportunity to meet other international students and researchers and to get to know Radboud University and the city of Nijmegen. Our participants come from all over the world and have different cultural and academic backgrounds. Our programme includes the following activities free of charge: welcome reception, guest lecture and farewell drink. We offer sports activities, a BBQ, a river cruise on a Pancake Boat and a city tour for a small fee.

Have a look at what participants have said about their experience!

Contact
T. +31-248187706
E: Radboudsummerschool@ru.nl
F: RadboudSummerSchool

You can find more details about the courses on our website

Register now!

www.ru.nl/radboudsummerschool, 5-17 August 2018