

Course: Chromatography and Potentiometry

credits: 5

Course code	CHVH24CHROMATPOT	Modes of delivery	Practical / Training
Name	Chromatography and Potentiometry		Tutorial
Study year	2026-2027	Assessments	Chromatografie en Potentiometrie Practicum
ECTS credits	5		- Other assessment
Language	Dutch, with parts in English		Chromatografie en Potentiometrie Theorie -
Coordinator	I.J. Robin		Written, organised by STAD examinations

Learning outcomes

You describe and apply the van Deemter equation in theoretical cases and name the deviations in chromatograms.

You describe the application and operation of different types of chromatography.

You recommend changes in parameters to optimize chromatograms and methods, including calculation of pH (buffers) and eluent composition.

You name and describe different types of indication and reference electrodes and can explain/name the deviations in potentiometry.

You apply Nernst's law and the Nernst-like equation appropriate to the different types of electrodes in potentiometric issues.

You apply the acquired theoretical knowledge about chromatography in an independent, safe and responsible way while performing an experiment, and communicate about this with a logbook according to the applicable guidelines.

Content

In this module, we further explore chromatographic methods and deepen the techniques in theory and practice. The techniques covered are: GC, LC, HIC, SEC and IC.

The basics are the different separation principles, the van Deemter equation and equipment construction. The focus during this module is more on optimizing chromatograms so that as much separation as possible takes place in the shortest possible analysis time.

In Potentiometry (quantitative electrochemistry) we cover the different reference and indicator electrodes. Calculations on various issues using the Nernst and Nerstian equations are also performed.

During the practical days, one experiment will be performed: LC experiment with UV detection with a calibration line. In the method, statistical testing is applied and quantified in various ways.

Included in programme(s)

Chemistry

School(s)

Engineering, Life Sciences & ICT