Course offer
Chemistry Exchange

Academic year 2018-2019

UNIVERSITY OF APPLIED SCIENCES

CHEMISTRY

Chemistry is all about experimenting, researching and analysing. You are going to ensure diseases are no longer life-threatening, or you'll be solving murder cases based on DNA analyses.

You will be researching the composition of substances and products and will be able to analyse these down to the very last molecule. From waste water to medicine to plastics. Suppose there is a suspicion the groundwater is contaminated, then you will be able to ascertain whether this is actually the case.

COURSE OFFER FALL SEMESTER 2018-2019

Fall Semester
Depending on your educational background you can follow 3rd year courses either from the Applied Chemistry specialisation or Life Sciences specialisation.

You may also choose courses from the second year. Currently the curriculum of the 2nd year is being redeveloped, topics in the fall semester are;

Water
Analytical techniques in the lab and water related chemical analysis and more in-depth knowledge of chemistry. All topics are related to the theme 'Water'. The theme is connecting the bio/ecological field of the program to the applied chemistry. Research skill are developed toward a more professional level and students are working together more and more in projects. The structure of the semesters is organized in 2 quarters with 15 EC each.

Biochemical toolbox
Biochemists want to understand in molecular detail the function of cellular reactions occurring in vitro (under controlled conditions) AND to relate this information to what occurs in reality inside a living cell (in vivo). They need to know the concentrations and properties of the macromolecules inside cells in order to understand the `jungle` of metabolism. The toolbox gives theoretical and practical information about three important groups of molecules in the cell, the carbohydrates, lipids and proteins. Their structures, properties, importance in celmetabolism and applications in industry, biobased economy and medicine will be discussed. During practical techniques like centrifugation, extraction, thin layer chromatography, sodium dodecyl sulphate poly acryl gel electrophoreses and spectroscopic detection of enzyme activity will be executed.

Organic 2
The theory expands and deepens your knowledge of the properties and reactions of common organic substances, for example, molecules containing a carbonyl group, (non-) substituted aromatic carbons, carbohydrates, polysaccharides and polymers. During the practicals you work as a team on the multi-step synthesis and characterisation of a prescribed substance and a molecule of your own choice. In the practicals you focus on planning, theoretical aspects of the reactions, safety and reporting.

Based on your educational background the programme coordinator will determine whether you will be admitted to the 2nd or 3rd year.

Spring semester
In our spring semester you can follow courses from our 1 and 2 year. Currently the curriculum of the 2nd year is being redeveloped, topics of the spring semester (Q3 and Q4 of the program of the 2nd year);

Forensic Science
In this quarter different chemical, biochemical and also biological techniques will be topic of the program. Both theoretical lessons and practicals as well will travel through the interesting world of forensic research to learn you how to solve crimes at the lab.

Marine Biobased Specialties
The chemistry program does have a very close cooperation with the research group of Marine Biobased Specialties. This research group focusses on scientific research on marine organism and their chemical and biological content. Based on this research application of the results is part of the research program. As a student you will get involved in the current research projects of marine biobased topics. This will learn you how we can face challenging problems and how to contribute to a demanding search for solutions to create a more biobased economy.

Based on your educational background the programme coordinator will determine whether you will be admitted to the 1st or 2nd year.

Additional you can choose the courses below which are especially for exchange students.

- Dutch for beginners 1 2,5 ECTS
- Peer Project 1,25 ECTS