Hanze University of Applied Sciences Groningen

# Course: Chemistry in Engineering — credits: 5

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| **Course code** | ELVP22CHE |
| **Name** | Chemistry in Engineering |
| **Study year** | 2023-2024 |
| **ECTS credits** | 5 |
| **Language** | English |
| **Coordinator** | G. van der Schot |
| **Modes of delivery** | Problem-based learning |
| **Assessments** | Chemistry in Engineering - Assignment |

**Learning outcomes**

**Defining**

The student clearly identifies a problem or customer need, contextualizes it, consults relevant sources, and converts it into a goal, problem statement, and electrical engineering requirements.

**Designing**

The student considers various solution directions to arrive at a detailed and well-founded electrical engineered product/service/process based on the program of requirements, using appropriate design methodologies and taking into account societal interests and engineering standards.

**Professionalizing**

The student is able to acquire and maintain skills, is self-directed, constructive in giving and receiving feedback, shows flexibility, and can communicate clearly.

**Content**

This course covers parts of chemistry that play a role in the applications of electrical engineering.

The topics that are covered:

- Chemical balances,
- Redox chemistry,
- Acids and bases,
- Reaction rates and enthalpy,
- Organic chemistry,
- Phase transitions, intermolecular forces,
- Chemical analysis
- Separation techniques.

The student applies the theory to a number of practical assignments. The emphasis is on applications within the technical field, such as the construction and analysis of a sensor, a new type of battery or fuel cell.

**Included in programme(s)**

Electrical Engineering Major Sensor Technology
Electrical Engineering Major Electronics

**School(s)**

Institute of Engineering