

## **Purpose of and reason for the admission requirements Chemical Engineering, specialization Chemical and Process Technology (CPT)**

We require a Bachelor of Science degree (or equivalent) in Chemical Engineering.

Please review the program information carefully with regards to the two tracks:

- Molecular Systems and Materials Chemistry
- Chemical and Process Technology

Since the program is taught in English, the level of English when entering the program needs to be at sufficient level as well.

## **Subject- Related Knowledge & Skills**

### **The criterium used is**

A Bachelor of Science degree (or equivalent) in Chemical Engineering

### **The norm is**

In your previous education you should have gained knowledge in the following areas:

- Mathematics: trigonometric, exponential and logarithmic functions, first-and second order differential equations, dot products and cross products, complex numbers, functions of more than one variable, double and triple integrals, vector fields along curves and through surfaces, linear algebra, matrices, systems of linear differential equations, numerical methods (basics), engineering statistics. (15 ECTS).
- Physics: Conservation laws of classical fluid and solid mechanics, thermodynamics, simple harmonic motion, electric and magnetic fields, Maxwell's equations (7.5 ECTS).
- Physical Chemistry: Chemical bonding including quantum chemical description, spectroscopy, thermodynamics, kinetics, phase equilibria and chemical equilibria in one and multi component systems (12.5 ECTS).
- Process Engineering: Transport mechanisms (and their rates) for mass, momentum and energy and corresponding laws of conservation, basic principles of the most important industrial separation technologies and application thereof to determine and design appropriate separation equipment, heterogeneous catalysis, ideal and non-ideal reactors, including non-isothermal reactors, fixed-bed reactors for heterogeneous catalyzed reactions, gas-liquid and gas-liquid- solid reactors, process modelling (15 ECTS).
- Lab Experience: Formal training in laboratory techniques including chemical synthesis and chemical analysis, hands on laboratory sessions on physical transport phenomena, flow measurements (10 ECTS).
- Academic training including research project (15 ECTS).

### **Method of assessment (by the department admissions board)**

Assessment of transcript of records displaying the content of previous course subjects and project work.

### **Score**

Sufficient/ insufficient/ conditional; under the condition\* that the student gets the defined requirement of homologation during the master (max 15 Credits).

*\*The conditional situation always depends on educational feasibility.*