



# HSD

Hochschule Düsseldorf  
University of Applied Sciences



Faculty of Mechanical  
and Process Engineering

**Bachelor of Engineering**

# Environmental and Process Technology

## **What is process technology?**

Process technology deals with the production and processing of large amounts of products without specific geometric form – bulk goods such as powder, granulated material, fluids or gases. Production methods are diverse and range from oil plant to brewery. They include physical, chemical and biological processes and various unit operations: combination (mixing processes) and separation (filtration, distillation, pollutant removal etc.).

## **Why should I study environmental and process technology?**

You are interested not only in production methods, but also in how to produce environmentally friendly and sustainably and how to conserve resources and avoid waste.

## **What to expect from the study programme?**

- Fundamentals of natural sciences such as physics, chemistry and mathematics
- Work in practical projects – already in semester 1
- Characteristics of specific materials and how they change
- Devices and machines for materials conversion, combination and separation
- Devices and machines to store and extract materials
- Functioning of production plants
- Purification procedures for air and water, noise protection
- Electricity supply and automated control solutions in production plants
- Lots of practical exercises in our laboratories
- Aspects of profitability and sustainability

**Please note:** The language of instruction is mainly German.

## **What to expect from professional practice?**

- You work on concepts for cost-efficient and environmentally friendly production.
- You plan production processes for e.g. pharmaceuticals, cosmetics, paints and varnishes, plastics, paper, fuel or even sugar.
- You plan, design and calculate devices and machines.
- You operate production plants of an industrial dimension to process raw material, separate substances, recycle waste material, develop consumer goods with specific characteristics etc.
- You design plants and processes to produce high-quality intermediate and end products from raw material.
- You contribute to air pollution control, water purification, soil rehabilitation and noise protection.
- You sell technical products and consult clients all over the world.

## **In which sectors can I work?**

The chemical and petrochemical industry, pharmaceuticals and cosmetics, food and luxury food, plastics, wood, paper, paints and varnishes, process plant and machine design, water supply and waste water treatment, engineering services, inspection agencies, environmental and disposal technology, biotechnology, genetic and medical technology, nano- and microtechnology, application-oriented research, safety technology, occupational safety and emission control, waste disposal, management, patents and many more.

# SYLLABUS

## SEMESTERS 1-2

- Mathematics and Computer Science
- Fundamentals of Natural Sciences
- Fundamentals of Engineering
- Fundamentals of Business Administration
- Project Work, Languages, Management

## SEMESTERS 3-4

- Fluid Mechanics and Noise Protection
- Inorganic and Organic Chemistry
- Control Engineering
- Mechanical Process Engineering
- Thermal Process Engineering
- Environmental Analysis
- Project Management and Problem Solving Methods
- Heat Transfer
- Chemical Reaction Engineering
- Scientific Computing

## SEMESTER 5

- Internship Semester

## SEMESTERS 6-7

- Process Plant Design
- Air Pollution Control
- Biotechnology
- Water Purification and Waste Water Treatment
- Environmental Law and Licence Procedures
- Project: Environmental and Process Engineering
- Compulsory Elective Modules
- Bachelor's Thesis
- Colloquium

Please check the module manual (currently only in German) for detailed information on the contents of the study programme.

## Further Information

### Faculty contact:

Dean's Office at the Faculty of Mechanical  
and Process Engineering

T +49 211 4351-2400

[dekanat.mv@hs-duesseldorf.de](mailto:dekanat.mv@hs-duesseldorf.de)

About the programme, admission requirements  
and application:

[mv.hs-duesseldorf.de/buvt-en](http://mv.hs-duesseldorf.de/buvt-en)

## Get in Touch

### Admissions Office

[zulassung@hs-duesseldorf.de](mailto:zulassung@hs-duesseldorf.de)

[hs-duesseldorf.de/zulassungsstelle](http://hs-duesseldorf.de/zulassungsstelle) (in German only)

### Student Advisory and Counselling Service (ZSB)

[studienberatung@hs-duesseldorf.de](mailto:studienberatung@hs-duesseldorf.de)

[hs-duesseldorf.de/zsb-en](http://hs-duesseldorf.de/zsb-en)

### International Office (IO)

[international-office@hs-duesseldorf.de](mailto:international-office@hs-duesseldorf.de)

[hs-duesseldorf.de/io-en](http://hs-duesseldorf.de/io-en)

### Family Support Centre

[familienbuero@hs-duesseldorf.de](mailto:familienbuero@hs-duesseldorf.de)

[hs-duesseldorf.de/fam-en](http://hs-duesseldorf.de/fam-en)

### Office of Counselling and Disability Services (ABS)

[barrierefrei@hs-duesseldorf.de](mailto:barrierefrei@hs-duesseldorf.de)

[hs-duesseldorf.de/abs-en](http://hs-duesseldorf.de/abs-en)

### Psychological Counselling Service (PSB)

[info.psb@hs-duesseldorf.de](mailto:info.psb@hs-duesseldorf.de)

[hs-duesseldorf.de/psb-en](http://hs-duesseldorf.de/psb-en)

## HSD Invites You

Visit us! Join courses during our yearly trial week  
(Schnupperstudium) and attend our information events  
(e.g. *Tag der offenen Tür*, *Hochschulinformationstage*,  
*Wochen der Studienorientierung*).

Information on all events (in German only):

[hs-duesseldorf.de/zsb\\_veranstaltungen](http://hs-duesseldorf.de/zsb_veranstaltungen)

HSD on social media  
[facebook.de/hsduesseldorf](https://facebook.de/hsduesseldorf)  
[instagram.com/hsduesseldorf](https://instagram.com/hsduesseldorf)

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