



HSD

Hochschule Düsseldorf
University of Applied Sciences



Faculty of Mechanical
and Process Engineering

Bachelor of Engineering

Mechanical Engineering – Product Development

Develop the product of the future!

The products you can work on as a mechanical engineer are diverse: typical devices for production plants such as machine tools, plastic injection moulding machines, 3D printing machines, but also vehicles, aeroplanes and their driving engines; complex automated systems or even devices for everyday use such as household appliances; modern energy production facilities, such as wind-energy plants. The variety of potential materials is almost unlimited: metals, plastics, ceramics and special materials... You have to choose the most suitable material for the product depending on its characteristics and cost-efficiency in production.

Mechanical engineers develop almost all mechanical components of machines, plants and devices. They deal with the entire product lifecycle: problem case, functionality, choice of form and material, cost-efficient production, service life and disposal or recycling.

In state-of-the-art product development, computer-based methods (CAD, FEM, FMEA) support the processes. However, despite increasing simulation potentials, traditional experiments are in many cases still essential.

To produce a new product, product developers and production engineers work partly simultaneously. First, experts in product development work on the concept: functionality, form and design, choice of material etc. Production engineers consult them in the process and are responsible for smooth, cost-efficient production.

Thanks to their interdisciplinary training, mechanical engineers can work closely in teams with experts across many fields. Many mechanical engineers also use their knowledge acquired in relevant courses and projects at university to take on management responsibilities later on.

Please note: The language of instruction is mainly German.

Career Options

Mechanical engineers specialised in product development can work in any company planning to produce new machines, devices or entire systems made of machines and devices. Typical industries include e.g. mechanical engineering, plant engineering, vehicle construction, power engineering, process engineering, aerospace, electrical engineering, medical technology, safety technology, agrotechnology, food technology, engineering services.

Many mechanical engineers work in mid-sized companies. However, there are also options in larger companies or even in self-employment. Due to increasing intercommunication and interdisciplinary division of labour in production, companies tend to work with specialised external engineering services – to supervise the process of product development. Thus, this field offers more and more interesting job prospects for product developers.

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

- Electrical Power Engineering
- Fundamentals of Fluid Mechanics
- Materials Technology
- Strength of Materials and Dynamics
- Cutting and Chipless Manufacturing
- Machine Parts
- Control Engineering
- Cost Accounting and Results Accounts
- Scientific Computing
- Enterprise Resource Planning
- Project Management and Problem Solving Methods
- Design and Rapid Prototyping

SEMESTER 5

- Internship Semester

SEMESTERS 6-7

- Measurement Technology
- Factory Planning and Quality Management
- Product Data Modelling
- Production Metrology
- Design Project: Designing and Manufacturing a Real Product
- Machine Design
- Modelling and Simulation of Dynamic Systems
- 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

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About the programme, admission requirements
and application:

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Get in Touch

Admissions Office

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Student Advisory and Counselling Service (ZSB)

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Psychological Counselling Service (PSB)

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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

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