



Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



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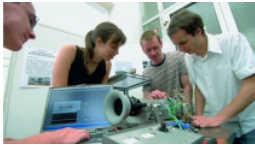
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# Master's degree



## Design and Development in Automotive and Mechanical Engineering

Esslingen University of Applied Sciences • Esslingen am Neckar



## Overview

Degree	Master of Engineering
Teaching language	<ul style="list-style-type: none"><li>English</li></ul>
Languages	<p>The courses are entirely taught in English.</p> <p>A German language course, starting with an intensive course that is available at different levels, is offered at the beginning of the programme in September. Students also have the opportunity to learn various other languages.</p>
Full-time / part-time	<ul style="list-style-type: none"><li>full-time</li></ul>
Mode of study	Less than 50% online
Programme duration	3 semesters
Beginning	Winter semester
Additional information on beginning, duration and mode of study	The winter semester starts in September.
Application deadline	31 March for the following winter semester
Tuition fees per semester in EUR	1,500 EUR
Additional information on tuition fees	No tuition fees for EU applicants
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No

## Description/content

Build your network of knowledge in engineering design and development

The Esslingen MEng in Design and Development in Automotive and Mechanical Engineering (DDM) is focused on the design and development of complex engineering systems. In order to work in modern simultaneous engineering, graduates need specialised knowledge and the ability to work in interdisciplinary and international teams.

DDM students gain core competence in problem-solving abilities, based on networked knowledge in design, development, simulation, and production technology. A strong focus is placed on the ability to communicate confidently in the international environment of modern industry.

The aim of this course is to prepare students for a challenging job in the core areas of design and development within the globalised mechanical engineering and automotive engineering industry. Graduates of the DDM programme usually continue to a career in one of the following areas: the automotive industry and its component suppliers, the mechanical engineering industry, the process engineering industry, and engineering consultancy.

Study in the heart of the European automotive and mechanical engineering industry

Esslingen University of Applied Sciences has a long tradition in educating mechanical and automotive engineers. Founded in 1914 as the Royal College for Mechanical Engineering, the university has always taken advantage of its location in one of the major centres of European industry and is therefore closely linked with the nearby companies. These include many global technological leaders in mechanical and automotive engineering, such as **Mercedes-Benz Group, Bosch, Festo, Porsche, Index**, and many others. These strong connections to the industry are especially important when it comes to the placement of the student's Master's thesis.

Learn to work in an interdisciplinary and intercultural environment

The DDM programme reflects the needs of globally oriented companies. We offer the opportunity for students from diverse cultural backgrounds to study, work, and live together. This is made possible through active contact with partner universities in many countries throughout the world. The intercultural co-operation of project work is also of added value to Master's students.

## Course Details

### Course organisation

The Esslingen "Master of Engineering in Design and Development in Automotive and Mechanical Engineering" (DDM) programme focuses on communicating advanced knowledge and abilities in the area of design and development of complex engineering systems. It aims to enable students to successfully deal with the various facets of modern, simultaneous engineering development projects. Besides advanced technical/scientific lectures and lab work, cross-cultural, interdisciplinary student projects are part of the programme. Through these, students are given the opportunity to share not only their specialised knowledge but also their cultural backgrounds in real-life working scenarios.

#### First semester:

Advanced Strength of Materials:

- Lightweight Design, Advanced Finite Element Method

Integrity of Structures:

- Integrity of Structures
- Failure Analysis

Vibration Acoustics I:

- Vibration and Acoustics Measurement, Lab Vibration and Acoustics Measurement

Dynamics:

- Multibody Systems
- Simulation of Multibody Systems

Design and Development I:

- Design Methodology, Ecological and Economic Design, Reliability

Numerical Methods in CAE:

- Numerical Mathematics, CAE Methods and Algorithms

**Second semester:**

Design for Manufacturing:

- Production-Oriented Product Design
- Production Life Cycle Management with Laboratory

Vibration Acoustics II:

- Vibrations, NVH in Automotive Systems, Lab Computer-Aided Vibration Analysis (CAT)

Advanced Materials Technology:

- Advanced Engineering Materials
- Surface Technology
- Composite Materials

Design and Development II:

- Advanced CAD, Design of Experiments (DoE)
- Project work

**Third semester: Master's thesis**

In their final thesis,

- students demonstrate the full extent of their scientific and practical engineering knowledge of a specific subject.

Master's theses can be

- completed either at the university or, preferably, within a company.

The duration is

- six months, including training in soft skills.

**A Diploma supplement will be issued**

Yes

**International elements**

- International guest lecturers
- Language training provided
- Training in intercultural skills

**Course-specific, integrated German language courses**

Yes

**Course-specific, integrated English language courses**

No

## Costs / Funding

Tuition fees per semester in EUR	1,500 EUR
Additional information on tuition fees	No tuition fees for EU applicants
Semester contribution	170 EUR per semester
Costs of living	In addition to the study fees and in order to cover personal expenses during the study programme in Esslingen, we recommend that participants budget around 934 EUR per month for accommodation (320 EUR - 420 EUR), health insurance, books, excursions, and other expenses. For a residence permit, the amount of 934 EUR per month (16,812 EUR for 18 months) is required.
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	<p>The "Deutschlandstipendium" supports a limited number of new or advanced students who have excellent academic and professional promise. For more information, see:</p> <p><a href="https://www.hs-esslingen.de/en/study/advice-support/praxis-beruf-karriere/job-search-contacts-to-companies/deutschlandstipendium-german-scholarships">https://www.hs-esslingen.de/en/study/advice-support/praxis-beruf-karriere/job-search-contacts-to-companies/deutschlandstipendium-german-scholarships</a></p> <p>Company scholarships are also a possibility, and interested students should contact the respective company directly for further information.</p>

## Requirements / Registration

Academic admission requirements	<ul style="list-style-type: none"><li>• Bachelor's degree in Mechanical Engineering, Automotive Engineering, or an equivalent area of engineering with a focus on design and development</li><li>• Overall grade of A or B (top 35%)</li><li>• Minimum credit point workload in Bachelor's studies in the following areas:<ul style="list-style-type: none"><li>◦ CAD (Pro/E or CATIA): 5 CP</li><li>◦ Design/Machine Elements: 15 CP</li><li>◦ Strength of Materials/Mechanics: 10 CP</li><li>◦ Mathematics: 8 CP</li></ul></li><li>• A letter of motivation, one page</li><li>• Two letters of recommendation</li><li>• <a href="#">online application</a></li><li>• The APS certificate is required for applicants whose first degree is from PR China, Vietnam and India.</li></ul>
Language requirements	<p>English</p> <p>One of the following tests is required:</p> <ul style="list-style-type: none"><li>• International <a href="#">TOEFL</a> score of at least 550 paper-based, 213 computer-based, 71 Internet-based (our code: 1680)</li><li>• An academic <a href="#">IELTS</a> score of at least 6.0</li><li>• UNicert II; OPT test 75 points</li><li>• Cambridge Certificate (CAE or CPE)</li></ul>

We do not accept the institutional TOEFL. Native English speakers and applicants who completed their undergraduate degrees in English (certification from university) are exempt from the English language test. Applicants from India do not need to submit proof of English language proficiency.

Proficiency in **German** is very important for students not only to manage everyday life but also to write the Master's thesis and apply for a job in industry. Without good knowledge of German, it is almost impossible to find a good position in Germany. Therefore, all students should arrive in Germany in September with basic knowledge (A1) of German. To meet this prerequisite, beginners must take German language courses in their home countries. At the end of the second semester, proof of German language skills at level A2 must be provided.

**Application deadline** 31 March for the following winter semester

**Submit application to** [Apply here](#)

Esslingen Graduate School  
University of Applied Sciences  
Flandernstr. 101  
73732 Esslingen  
Germany

## Services

**Possibility of finding part-time employment** Students can apply for part-time jobs in the industry around Esslingen. We recommend not to work more than eight to ten hours a week.

From time to time, jobs are available in the labs of the University of Applied Sciences of Esslingen.

**Accommodation** Most of our students live in modern single apartments with a bathroom/toilet and modern facilities located in student residences. There are student dormitories in the immediate vicinity of the City Campus or the Hilltop Campus in Esslingen. A room in the dormitory is guaranteed for one year. The monthly cost is between 320 EUR and 420 EUR per month.

For more information: <https://www.hs-esslingen.de/en/international/coming-to-esslingen-uas/international-masters-programmes-graduate-school/general-information-about-studying-and-living-in-esslingen>

**Career advisory service** Career services are available at the university:  
<https://www.hs-esslingen.de/en/study/advice-support/praxis-beruf-karriere/careers-orientation>

**Support for international students and doctoral candidates**

- Welcome event
- Cultural and linguistic preparation
- Visa matters



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## Jia Ling MEng in Design and Development in Automotive and Mechanical Engineering

DDM was not just a challenge but also a rewarding course of study that bridged the gap between academics and industry. It also closed the gap between different world cultures. Studying together with a diverse group of students from various nations was an incredibly refreshing and unique experience.



## MEng in Design and Development

The video gives an insight into the lectures and labs. It also contains testimonials of students and gives an overview of the university site and city.

» more:  
[https://youtu.be/zk1GsdX\\_5TQ](https://youtu.be/zk1GsdX_5TQ)

# — Esslingen University of Applied Sciences —



City campus

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The University of Applied Sciences Esslingen, with its focuses on engineering studies, business studies, and social sciences, covers a wide range of subjects. In October 2006, two historical universities were merged: the former "Königliche Bauwerkschule, Abteilung Maschinenbau" (Royal School of Construction, Faculty of Mechanical Engineering), which had been relocated to Esslingen from Stuttgart in 1914, and the "Soziale Frauenschule des Schwäbischen Frauenvereins" (Social Women's School of the Swabian Women's Association), founded in 1917. Both schools were elevated to the status of University of Applied Sciences in 1972.

Currently, more than 6,000 students are enrolled in the university's six faculties and are divided between three campuses: the city centre campus lies in the heart of Esslingen; the hilltop campus is located on a hill overlooking the city; and the Goepingen campus is situated 32

km away from Esslingen.

As a lively university, the University of Applied Sciences Esslingen is continually adapting to meet the demands of current practice in all its fields of work. Because of this, the business studies and industry-oriented degree programmes foster intensive contact with many important companies in south-western Germany and make use of a network that has been continually extended over the last 50 years. In the densely populated region of Baden-Württemberg, there are also a large number of state-run and independent providers of health and social care. For the degree programmes in health and social care and care sciences at the university, they offer excellent and extensively-used opportunities for cooperative work in the areas of training, study, and research.

The central philosophy of the University of Applied Sciences Esslingen is to offer degree programmes that are practice-based but also oriented towards the future. Manageable student numbers enable intensive study and cooperative relationships between staff and students. Practical semesters, project work, group work, and scientific degree theses with a practical orientation are all aimed towards successfully preparing the students for an academically sound, professional career.

Its excellent reputation and the quality of the scientifically and professionally grounded training have ensured that the University of Applied Sciences Esslingen is regularly placed among the top universities in various university ranking schemes.

The University of Applied Sciences Esslingen endeavours to provide favourable work and study conditions for young parents. In an audit carried out by the "Beruf- und Familie GmbH" (a non-profit organisation concerned with promoting family-oriented personnel and student policies), the university was certified as a "family-friendly university".

The Graduate School was founded in 1999. International Master's programmes are organised here. A comprehensive service for students from all parts of the world is guaranteed by the Graduate School.



## University location

A history of culture and technology

The history of Esslingen dates back to the year 777, when the town was first mentioned in an official document. Esslingen developed into an important market town and in the 13th century was officially recognised by the Holy Roman Empire as a "Free City of the Empire". In the Middle Ages, the great trade route from Holland to Venice crossed the Neckar River at Esslingen and proved a source of great wealth for the medieval town. Consequently, Esslingen developed into a major trade centre and was especially famous for its wine. A walk through the heart of the old town, one of the best-preserved of its kind in Germany, bears witness to Esslingen's 1,200-year history.

Esslingen is, however, more than just a romantic old town set in the middle of the vineyards of the Neckar Valley. Around 1830, it was the most industrialised city in the kingdom of Württemberg, and to this day, Esslingen has remained a major centre for all kinds of engineering and engineering-related industries. The region around Esslingen is home to some of the most famous corporations in the world of business. This mixture of industry, trade, and culture is what gives Esslingen its special flair and forms the atmosphere in which the University of Applied Sciences has flourished.



# Contact

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🌐 Course website: <https://www.hs-esslingen.de/en/international/coming-to-esslingen-uas/international-masters-programmes-graduate-school/master-degree-programmes/design-and-development-for-mechanical-and-automotive-engineering-master>

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# International Programmes in Germany - Database

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