

# At a Glance

## Your Profile

Bachelor graduates with a degree in electrical engineering, optoelectronics, mechatronics, computer science or related subjects

## Degree

Master of Science (M.Sc.)  
Advanced Systems Design

## Duration

- Three semesters including one to prepare your master thesis
- Total of 90 ECTS

## Admission Criteria

- Above-average professionally qualifying university degree (min. 2.5) in electrical engineering, optoelectronics, mechatronics, computer science or related subjects.
- Completion of a selection procedure with preparation of a selected topic.
- Further information for foreign students can be found in the admission regulations.

## Special features

- With us, you will study a range of courses that is unique in Germany.
- You will work in state-of-the-art laboratories.
- You will have access to practical tools for your R&D projects.

## Application

You can apply directly online (German applicants) or mail the documents (foreign applicants) to:

Admission Office  
Hochschule Aalen  
Beethovenstraße 1  
73430 Aalen

☎ +49 (0) 7361 576-1299  
✉ [zulassungsamt@hs-aalen.de](mailto:zulassungsamt@hs-aalen.de)  
🌐 [www.hs-aalen.de/bewerbung](http://www.hs-aalen.de/bewerbung)

## Dates and Deadlines

You can start your studies in the winter and summer semester.

The application deadline is December 15th (summer semester) and June 15th (winter semester) of each year.

## The University

Aalen University is one of the leading research institutions among the Universities of Applied Sciences in Germany. At Aalen University one of our main goals is to deliver a focused education to our 4,500 students by combining the developments in industry with the latest research findings.

The institution builds on this tradition by expanding its research capabilities and intensifying its relationship with firms. We offer an attractive, modern environment to students. Therefore Aalen University is the first choice to those who seek industry-focused education.



[hs-aalen.de/msd](http://hs-aalen.de/msd)



# Contact

Program Coordinator



**Prof. Dr. Heinrich Steinhart**

Phone +49 7361 576-4113  
[Heinrich.Steinhart@hs-aalen.de](mailto:Heinrich.Steinhart@hs-aalen.de)

Departmental Office



**Meta Lange**

Phone +49 7361 576-4107  
[E-Sekretariat@hs-aalen.de](mailto:E-Sekretariat@hs-aalen.de)

Student Advisory Service

[EIN.Studienberatung@hs-aalen.de](mailto:EIN.Studienberatung@hs-aalen.de)



Advanced Systems Design  
(Research Master)  
Master of Science (M.Sc.)

# Advanced Systems Design (Research Master)

Our Advanced Systems Design research Master's program offers you the opportunity to study at one of the most research-oriented universities of applied sciences in Baden-Württemberg and gain your first research experience. This study program is almost unique in Germany.

From the first semester onwards, you will independently pursue a current research topic in the field of systems engineering. You will investigate scientific issues from applied research in state-of-the-art laboratories. You will be in close professional contact with your supervising professor and be part of a research group. You will complete your three-semester research project with your Master's thesis.



## Program Overview

Semester	3	Masterthesis (29 CPs)			General studies (1 CP)
	2	Research module 2 (20 CPs)	Elective modules 2 (5 CPs)	Elective modules 3 (5 CPs)	
	1	Research module 1 (20 CPs)	Project management (5 CPs)	Elective modules 1 (5 CPs)	

Total of 90 credit points

Mandatory modules
  Elective modules

## Course of Study

For your research activities, you will choose an R&D topic from the following areas: Electrical engineering, optoelectronics and optics or mechatronics.

- **Energy generation, energy conversion and energy transmission**
  - Electrical drive technology
  - Power electronics
  - Grid feed-in / grid stability
- **Mechatronic systems**
  - Reliability analyses
  - Concepts for optimization
- **Optical measurement technology**
- **Optical manufacturing technologies and their processes**

## Program Plan

### Competences

The wide range of research courses offers you the opportunity to shape your professional profile and your personal interests in an industry-relevant and future-oriented field of work.

### You will learn during your studies:

- Structure complex research and development tasks independently, develop solutions and evaluate them critically
- Present work results competently and publish them scientifically
- Successfully plan and manage larger research and development projects.

### Study format and didactic concept

You will conduct independent research as part of the course. To ensure that your projects are successful, you will define specific goals with your supervising professor at the beginning of the semester. You will carry out your projects in university laboratories and inform your supervisor about the progress of your project at regular meetings. Finally, you will present the results of your work in a lecture to fellow students and professors and publish a scientific paper.

### Orientation Weeks Program

There is an Orientation Weeks Program for international students, which takes place 1-2 weeks before the start of lectures and prepares you for your study semester. For more information please contact: [incomings@hs-aalen.de](mailto:incomings@hs-aalen.de)

### Career Opportunities

- You have excellent career opportunities in industrial research and development, project planning, manufacturing and quality assurance.
- You have in-depth expertise in a current R&D topic and an excellent basis for doctoral studies.
- You have the know-how to independently plan and carry out the entire development process of an industrial product, from modeling and simulation to prototype construction and validation of the measurement results.