

ERASMUS+ BLENDED INTENSIVE PROGRAMME / 2027

Automotive Systems Block Week – 2027

15–19

MARCH

2027 · DORTMUND, GERMANY

ON-SITE BLOCK WEEK
15–19 March 2027 (confirmed)

BLENDED PROGRAMME
8 March – 9 April 2027 (planned)

Programme, Learning Content & Teaching Methods

Dortmund University of Applied Sciences and Arts (FH Dortmund). English-language programme for final-year Bachelor's and Master's students interested in automotive systems engineering.

PRELIMINARY INFORMATION · ACTIVITIES AND VIRTUAL DATES MAY CHANGE

This document presents the planned academic content, teaching formats and on-site schedule. Activities involving external contributors, laboratories or excursions depend on availability.

01 / INTRODUCTION & LEARNING CONTENT

Modern automobiles combine mechanical, electrical/electronic and software components. Their specification, design, integration and testing require coordination across manufacturers, suppliers and engineering disciplines.

Advanced Driver Assistance Systems (ADAS), autonomous driving (AD) and connected-vehicle technologies are increasing system complexity. The BIP explores how structured systems engineering and software-development approaches can respond to these challenges.

Key learning areas

- V-Model and Automotive SPICE (ASPICE)
- Requirements management and system architecture
- Sensors for ADAS/AD
- Safety and security
- Automotive software development
- ADAS/AD algorithms
- Model-based development with MATLAB/Simulink
- Agile methods and software testing
- System integration, validation and verification

Learning approach

Students explore engineering frameworks through seminars, case studies, practical exercises, demonstrations and collaborative assignments. Examples focus particularly on ADAS/AD and software-intensive automotive functions.

Target group & technical preparation

The programme is intended for students in the final year of a Bachelor's programme and Master's students. MATLAB/Simulink is used for demonstrations and hands-on exercises. Basic prior knowledge is helpful but not mandatory; a Simulink crash course is planned. Participants are expected to bring a laptop with a licensed MATLAB/Simulink installation.

02 / TEACHING & LEARNING METHODS

Lectures and seminars

Engineering concepts are introduced and discussed in interactive sessions. Short online questions may be used to provide immediate feedback and clarify challenging topics.

Practical work on a mobile robot

An autonomous mobile robot may be used as a prototype for an Autonomous Emergency Braking (AEB) function. Students work with model-based code developed in Simulink, LiDAR data processing, motion control and indoor testing.

Test-vehicle demonstrations and laboratory visits

A demonstration vehicle, such as the Audi Q7 described in the previous programme, may illustrate sensors and systems used in ADAS/AD, including radar, LiDAR and GPS. Visits to mechanical-engineering laboratories depend on availability.

MATLAB/Simulink development

Participants work on a simulated AEB function: developing, optimizing and testing their solution. Other ADAS/AD algorithms may also be demonstrated through simulation.

Scientific papers and white papers

Students examine selected current research and technology papers, summarise key ideas and discuss them with lecturers and peers.

Practical components are indicative and remain subject to equipment, staffing and laboratory availability.

03 / ASSIGNMENTS & BLENDED FORMAT

Further teaching activities

Third-party contributions: Guest speakers from partner universities or the automotive industry may provide additional perspectives. A company visit to an automotive supplier in or near Dortmund is planned subject to availability.

Group assignment: Students work in groups on an automotive-related topic, review relevant literature and prepare a presentation. The results are presented and discussed in an assignment colloquium during the on-site week.

Planned programme structure

Week	Dates	Activity
CW 10	8–12 March 2027	Virtual introduction and preparation
CW 11	15–19 March 2027	On-site block week in Dortmund
CW 12	22–26 March 2027	No scheduled programme activities
CW 13	29 March – 2 April 2027	Virtual follow-up and group work
CW 14	5–9 April 2027	Virtual finalisation of group work

Programme location

FH Dortmund, [Sonnenstr. 96, 44139 Dortmund](#). Exact room to be confirmed.

Important note

The on-site week of 15–19 March 2027 is confirmed. The virtual activity dates and the individual on-site sessions are preliminary and may be adjusted.

04 / PRELIMINARY ON-SITE PROGRAMME

MON 15 MAR

09:00–10:30	Requirements Management
10:45–12:15	System Architecture
11:30–12:30	Case Study: Introduction
12:30–13:30	Lunch Break
13:30–15:00	Sensors for ADAS/AD
15:30–17:00	Demonstration: Sensors for ADAS/AD

TUE 16 MAR

09:00–10:30	Discussion: White Paper
10:45–12:15	Safety and Security
12:15–13:30	Lunch Break
13:30–15:00	Lab Visits
15:30–17:00	Automotive Software Development

WED 17 MAR

09:00–10:30	Company Presentation (TBD)
10:45–12:15	ADAS/AD Algorithms
12:15–13:30	Lunch Break
13:30–15:00	Model-Based Development
15:30–17:00	Model-Based Development

THU 18 MAR

09:00–10:30	Company Visit (TBD)
10:45–12:15	Company Visit (TBD)
12:15–13:30	Lunch Break
13:30–15:00	Function Integration
15:30–17:00	Function Validation

FRI 19 MAR

09:00–10:30	Software Testing
10:45–12:15	System Validation
12:15–13:30	Lunch Break
13:30–15:00	Assignment Colloquium

Further information: go-study-europe.de · Contact: ekaterina.hermann@fh-dortmund.de