

Summer & Winter Schools at RWTH Aachen University

Broaden your horizon and spend your holidays abroad in Germany

Experience excellent academic content and have fun at the same time! Develop practical ideas together with renowned professors and expand your skills with hands-on case studies. Enjoy a wide range of social events full of intercultural and fun activities. Every program includes accommodation, two meals per day, and personal support from local mentors.

Highlights & Benefits

Benefit from excellent teaching at RWTH Aachen University, a top-ranked and one of Europe's leading science and research institutions. To support the academic content of each program, we include visits of companies and institutes, lab tours, and the chance to network with German organizations.

Check out our [website!](#)



Quick facts about our Short Courses

 Teaching: on campus	 Credit Points: 2-4 ECTS
 Duration: 2-3 weeks	 Qualification: RWTH Certificate
 Workload: 50-100 Teaching Hours	 Language: English

Application Information

You are welcome to apply if you are:

- ▶ at least 18 years old
- ▶ proficient in the English language
- ▶ in your Bachelor's, Master's, in between or recently graduated

Supporting Program



Professional Insights

- ▶ Company Visits
- ▶ Institute & Lab Tours
- ▶ Expert Talks
- ▶ Networking



Interactive Classes

- ▶ Lectures
- ▶ Exercises
- ▶ Case studies
- ▶ Experiments



Social & Cultural Activities

- ▶ Social Events
- ▶ City Tours
- ▶ Mentoring Program
- ▶ Student Life in Aachen



Comfortable Stay

Accommodation, breakfast & lunch, transportation, emergency contact
Help with visa & insurance, travel tips, full-time support

Artificial Intelligence in Industrial Applications

Immerse yourself in artificial neural networks and deep learning

Check out our
[website!](#)



Expect these Contents

This Summer School introduces the fundamentals of Cyber Physical Systems, Network Infrastructure, Innovative Sensor Systems and Data Integration to provide a comprehensive understanding of data acquisition in an industrial context, as well as a training in programming languages and tools commonly used for industrial AI, such as Python, scikit learn, and TensorFlow (Keras).

- ▶ Understand Key AI concepts such as machine learning, deep learning, reinforcement learning and time series processing
- ▶ Apply Supervised Learning in Predictive Quality
- ▶ Perform information integration in industrial networks
- ▶ Assess the potential of data driven solutions for industrial scenarios
- ▶ Master programming basics in Python

Quick Facts

Your Summer School at a glance

 June 23 - July 6, 2024 (2 weeks)	 2,250 €
 On campus	 Mentoring and Supporting Program
 RWTH Certificate with 3 ECTS (approx. 75 hours)	 Accommodation included

Insights into the world of AI and smart manufacturing

Apart from understanding the theoretical concepts, you will also experience how they are put into practice. Learn how state-of-the-art AI-based technologies are used in the industry during one of our company visits at Mitsubishi Electric Europe!



Innovative Technologies in Automotive Engineering

Build the best self-driving miniature car and win the competition!

Check out our
website!



Expect these Contents

Explore the fundamentals of automotive engineering, learn about mobile propulsion, and understand modern automotive technologies. You will discuss alternative vehicle propulsion systems, examine automated driving, and work on a case study. You even get to meet a student formula team. They present their work on self-built race cars with alternative propulsion systems to you.

- ▶ Study modern automotive technologies and longitudinal dynamics
- ▶ Understand how driving resistances and brake systems work
- ▶ Consider automated driving in its legal, social and economic context
- ▶ See how a student racing team builds their cars
- ▶ Succeed in a case study by building a self-driving miniature car

Quick Facts

Your Summer School at a glance

 June 23 - July 13, 2024 (3 weeks)	 3,350 €
 On campus	 Mentoring and Supporting Program
 RWTH Certificate with 4 ECTS (approx. 100 hours)	 Accommodation included

Discover future-oriented and sustainable mobility

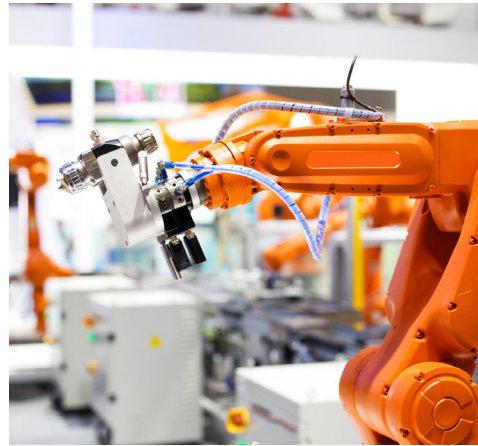
If you aspire to see how future-oriented technologies are already being implemented in practice, then this course is the right place for you! Our partner DAF Trucks N.V. invites you to their headquarters to showcase their latest innovations and alternative propulsion systems!



Robotics and Innovation for Future Industries

Learn how to program robots for multiple purposes

Check out our [website!](#)



Expect these Contents

Gain fundamental theoretical knowledge in robotics and then apply your skills in lab classes at RWTH Aachen University. You solve classical problems in robotics like localization and navigation and make use of simulations. Receive information on industrial applications and see how stationary and mobile robots move because of your own programming.

- ▶ Experience various types of stationary and mobile robots
- ▶ Gain a theoretical understanding of lightweight industrial robots
- ▶ Apply your knowledge in practical projects and exercises
- ▶ Make use of different types of programming software and learn about sensors and their inaccuracy
- ▶ Solve tasks like mapping, navigation, planning, and reasoning

Quick Facts

Your Summer School at a glance

 July 7 - July 27, 2024 (3 weeks)	 3,350 €
 On campus	 Mentoring and Supporting Program
 RWTH Certificate with 4 ECTS (approx. 100 hours)	 Accommodation included

Learn from pioneer in global industrial robotics

We make sure that you get the most out of our network. Therefore, we cooperate with our longstanding partner KUKA AG, one of the leading suppliers on the global market for industrial robots. Learn first-hand from experts and expand your own network!



Production Technology meets Industry 4.0

Optimize production by considering materials, AI and smart factory concepts

Check out our [website!](#)



Expect these Contents

Explore fundamental areas of Industry 4.0 and acquire a better understanding of current and future requirements in production technology. Learn about Internet of Things and Internet of Production, discuss the role of robotics in automation and consider aspects of human-machine interaction. By considering different aspects of artificial intelligence you dive deep into the concept of smart factory.

- ▶ Experience the production chain with real-life machines and learn how to plan the layout of modern factories
- ▶ Gain valuable insights into Industry 4.0 technologies to improve human-machine interaction and succeed in future work places
- ▶ Understand artificial intelligence, big data and data mining
- ▶ Visit the „Smart Automation Lab“ to see robots in action
- ▶ Work with various materials and lightweight design

Quick Facts

Your Summer School at a glance

 July 7 - July 27, 2024 (3 weeks)	 3,350 €
 On campus	 Mentoring and Supporting Program
 RWTH Certificate with 4 ECTS (approx. 100 hours)	 Accommodation included

Production Technology meets Industry 4.0 in reality

Our long-standing partner company Henkel produces entirely according to the concept of Industry 4.0 and has perfected the idea of smart factories. In order to experience their processes, you are invited to come and see one of the most modern production facilities in the world!



Sustainable Buildings and Green Cities

Simulate a campus building and optimize its energy performance

Check out our
[website!](#)



Expect these Contents

Explore the energy efficiency of buildings on a micro-level, and consider districts on a macro-level, while learning about building performance simulation and district supply systems. A district from the living lab project SmartQuart will serve as a use case. SmartQuart's core technological element is the exchange of energy and intelligent networking within and between the smart districts.

- ▶ Understand the mathematical and physical basics to work with dynamic building simulation and plant operation simulations
- ▶ Implement models using computer-based numerical methods and the object-oriented modeling language Modelica
- ▶ Identify influential factors on CO₂ emissions and costs in the operation of a power system through a sensitivity analysis
- ▶ Simulate a single zone of a building for a complete year

Quick Facts

Your Summer School at a glance

 July 14 - July 27, 2024 (2 weeks)	 2,250 €
 On campus	 Mentoring and Supporting Program
 RWTH Certificate with 3 ECTS (approx. 75 hours)	 Accommodation included

Explore a model of sustainable living

In times of energy transition, new technologies are emerging faster and faster. Become the next to shape a sustainable future! Do you want to experience the future of energy management up close? Our partner SmartQuart will help you understand the future of sustainable cities!



Automation and Simulation

Solve computing assignments and apply your skills in a project

Check out our
[website!](#)



Expect these Contents

Learn all about fundamentals in automation and simulation. The topic simulation features various exercises in a computer lab. You solve real world problems by applying software and acquire a solid understanding of methods used in mechanical engineering. In the automation part, you discuss modern automated production systems, covering major cutting-edge technologies of production automation.

- ▶ Come up with elaborate calculations for adequate simulations
- ▶ Realize a project work in a computer laboratory
- ▶ Try, test, and acquire methods in mechanical engineering to understand automation processes
- ▶ Learn about current research challenges during a lab tour
- ▶ Upgrade your skill set for the interdisciplinary engineering world

Quick Facts

Your Summer School at a glance

 July 14 - August 3, 2024 (3 weeks)	 3,350 €
 On campus	 Mentoring and Supporting Program
 RWTH Certificate with 4 ECTS (approx. 100 hours)	 Accommodation included

Insights into the technologies of the future

As a global pioneer in the field of industrial automation, Eaton is playing a key role in the development and implementation of the most advanced technologies. For you, they open their gates of their German headquarters in Bonn. A whole day full of exciting hands-on activities paired with the latest technologies awaits you!

