

Build and control your own Delta Robot!

Robot Operating Systems Essentials

Check out our website!



Expect these Contents

Dive into the fascinating world of robotics, where you'll embark on a hands-on journey to build and control your very own delta robot. This course offers a comprehensive exploration of delta robot kinematics, assembly, and control mechanisms, including an introduction to the Robot Operating System (ROS), a crucial tool in modern robotics. From the fundamentals of robot construction to advanced control using both Arduino and ROS, you'll learn through practical, project-based sessions that culminate in a live demonstration of your robot.

- Understand delta robot kinematics and control principles
- Learn the delta robot building process, including material and component selection
- Program the delta robot using Arduino for task execution
- Debug and optimize robot performance for complex task execution

Summer School

📅 June 22 - July 5, 2025
(2 weeks)

💰 2,750 €

📍 On-campus

🏠 Supporting Program

🎓 RWTH Certificate with 3 ECTS
(approx. 75 hours)


🏠 Accommodation included

Turn the theory into your own fully functional robot!


Gain new insights into robot design and control. You will build your own Delta Robot, which you can even take home with you at the end! Learn first-hand from industry experts and expand your own network!



Robot Operating Systems Essentials – Summer School*

TIME (CEST)	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
08:00 - 08:30									
08:30 - 09:00									
09:00 - 09:30			Introduction & Basics of Kinematics of Delta Robots	City Trip	Introduction to Delta Building Process & FastX Support	Delta Assembly & Arduino Support			
09:30 - 10:00									
10:00 - 10:30		Pick up							
10:30 - 11:00		Welcome Orientation							
11:00 - 11:30									
11:30 - 12:00									
12:00 - 12:30		Lunch Break				Lunch Break			
12:30 - 13:00									
13:00 - 13:30									
13:30 - 14:00	 Individual arrival	Get to know Aachen City Rally	Introduction & Basics of Kinematics of Delta Robots		Introduction to Delta Building Process & FastX Support	Delta Assembly & Arduino Support	Free time for excursions, sight-seeing and self-study		
14:00 - 14:30									
14:30 - 15:00									
15:00 - 15:30				Visit of Insitute (IGMR)					
15:30 - 16:00									
16:00 - 16:30									
16:30 - 17:00									
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17:30 - 18:00									
18:00 - 18:30									
18:30 - 19:00									
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									


 Organizational and social event




 Lecture, academic program

 Academic supporting program (institute/company visit, scheduled self-study, group work, case study, project work)

*Exemplary Schedule (Information presented is subject to change. Errors and omissions reserved)

Robot Operating Systems Essentials – Summer School*

TIME (CEST)	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday				
08:00 - 08:30											
08:30 - 09:00											
09:00 - 09:30		Delta Kinematics on Arduino	Introduction to ROS (Short Version: msgs, topics, pub, sub, nodes, launch, rviz)	Program a ROS Node to send Poses to Arduino	Implementation and Demonstration	Demonstration in front of Professors					
09:30 - 10:00											
10:00 - 10:30											
10:30 - 11:00											
11:00 - 11:30											
11:30 - 12:00											
12:00 - 12:30		Lunch Break									
12:30 - 13:00											
13:00 - 13:30											
13:30 - 14:00	Free time for excursions, sightseeing and self-study	Test: Complex Path Execution	On FastX	Bring the Kinematics Calculation to a ROS Node (FastX)	Preparation for final exam	Farewell Event	 Individual departure				
14:00 - 14:30											
14:30 - 15:00											
15:00 - 15:30											
15:30 - 16:00											
16:00 - 16:30											
16:30 - 17:00											
17:00 - 17:30											
17:30 - 18:00											
18:00 - 18:30				Barbeque							
18:30 - 19:00											
19:00 - 19:30											
19:30 - 20:00											
20:00 - 20:30											
20:30 - 21:00											

-  Organizational and social event
-  Lecture, academic program
-  Academic supporting program (institute/company visit, scheduled self-study, group work, case study, project work)

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