



# Kawasaki Robotics Academy

Seminar overview 2023

Date 04.2023

### Contents

General information .....	3
Overview Basic-, Advanced and Application seminars.....	4
Overview Options seminars .....	5
Robot operation .....	6
Electrical maintenance .....	7
Robot programming .....	8
duAro Tablet.....	9
Cubic-S.....	10
K-ROSET simulation .....	11
duAro AS programming.....	12
Operation and programming of painting robots.....	13
Integration of painting robots .....	14
Arc welding.....	15
Cleanroom .....	16
Picking system .....	17
Conveyor tracking.....	18
General fieldbus .....	19
Collision detection.....	20
Soft absorber/Changing gain.....	21
Interface communication .....	22
K-Logic/K-Ladder .....	23
External axis.....	24
K-SPARC .....	25
K-VFinder Vision System.....	26
TREND Manager 2 .....	27
Data storage .....	28
Fixed tool.....	29
Spin control .....	30
Directions to the Kawasaki Academy in Neuss .....	31
Hotel list Neuss.....	32
Contact .....	34

## General information

This catalogue contains an overview of our seminars and their contents. The contents of the seminars are shown in presence or as web seminar (online).

The content covers all areas related to Kawasaki robots and their operation. Our offer includes customer-specific or application-related seminars as well as standard seminars designed by us.

### Locations seminars

The seminars take place at our main office in Neuss or as a web seminar (online). If you have any questions as to whether a web seminar (online) is suitable for you, we will be happy to advise you.

### Seminar dates

Please contact us for possible seminar dates on +49(0)2131-3426-1350.

### Seminar times

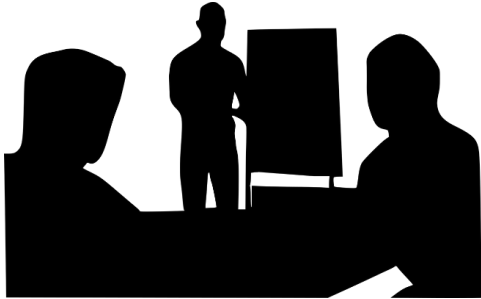
Monday - Thursday from 9.00 a.m. to 4.00 p.m.  
Friday from 9.00 a.m. to 2.00 p.m.  
(Break time daily from 12.00 p.m. to 12.30 p.m.)

Please note the general seminar conditions of the Kawasaki Robotics Academy.

## Overview Basic-, Advanced and Application seminars

We offer a range of different seminars. Our basic seminars are the foundation for all further seminars. After completing a basic seminar, further advanced, application and option seminars are available.

### Basic seminars



Robot operation

Electrical maintenance

Robot programming

duAro Tablet

### Advanced seminars



K-ROSET simulation

Cubic-S

duAro AS programming

### Application seminars



Operation and programming of  
painting robots

Integration of painting robots

Arc welding

Cleanroom

Picking system

## Overview Options seminars

Some functions of the robot system exceed the standard basic functions. Here we speak of so-called options. With the help of these options, the performance range of the robot can be expanded in a modular way. Information and descriptions can be found later in this catalogue.

### Options-Seminare

Conveyor tracking	K-SPARC
General fieldbus	K-VFinder Vision System
Collision detection	TREND Manager 2
Soft absorber/Changing gain	Spin control
Interface communication	Fixed tool
K-Logic/K-Ladder	Data storage
External axis	

### Explanation legend



Target group



Requirements



Contents



Duration



Number of participants



Price



Location



Dates

**Robot operation**

The aim of this seminar is for you to be able to operate the robot safely and to detect and rectify simple faults and correct positions.



- // System operator
- // Shift supervisor
- // Production manager



- // Technical knowledge
- // Basic knowledge of English



- // Safety instructions
- // Robot system overview
- // Start the robot system and switch it off
- // Safe operation of the robot system
- // Troubleshooting (Basic)



2 days



3 – 6 participants



836,00 € per participant



Kawasaki Robotics Academy Neuss



on request

## Electrical maintenance

At the end of this seminar, you will be able to independently record, analyse and professionally rectify faults on the robot system.



- // Maintenance engineer
- // Service engineer
- // Electrical technician
- // Person with electrical knowledge



- // Technical knowledge
- // Knowledge of electrical engineering
- // Basic knowledge of English
- // Electrical instruction in the field of electrical engineering



- // Safety instructions
- // Overview of the electronic components
- // Configuration and function of the robot controller
- // Circuit diagram overview
- // Error analysis
- // Create a data backup
- // Creation of a test program
- // Troubleshooting



2 days



3 – 6 participants



836,00 € per participant



Kawasaki Robotics Academy Neuss



on request

**Note:** This seminar does not take place in our seminar rooms, but in our demo hall. Therefore, it is mandatory for our participants to wear safety shoes. We kindly ask you to bring them yourself to the seminar date.

## Robot programming

At the end of this seminar, you will be able to operate the robot safely and analyse simple faults, as well as create programs in the AS programming language, background tasks and individual user interfaces (Interface panels). At the end of the seminar you will have created a complete palletising program.



// System Integrator  
// Developer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// PC knowledge



// Safety instructions  
// Robot system overview  
// Start the robot system and switch it off  
// Safe operation of the robot  
// AS programming language  
// Create/correct positions  
// Input/output signals  
// Creation of the TCP (Tool Centre Point)  
// Background tasks (process control)  
// Creating individual user interfaces (Interface panel)  
// Simple fault analysis during system standstill (Basic)



4 days



3 – 6 participants



1.540,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request



## duAro Tablet

At the end of this seminar you will be able to operate the robot safely and analyse simple faults, create coherent programs with the tablet and set up the safety module.



// System Integrator  
// Developer  
// Programmer



// Technical knowledge  
// Knowledge of electrical engineering/mechanics  
// Basic knowledge of English  
// Basic knowledge of PC/Android tablets



// Safety instructions  
// Robot system overview  
// Safe switch-on and switch-off procedure  
// Safe operation of the robot  
// Programming with the tablet  
// Configuration of the safety module



3 days



2 – 4 participants



1.188,00 € per participants



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## Cubic-S

The aim of this seminar is to enable you to parameterise the Cubic-S safety module and integrate the hardware into the robot system.



// System Integrator  
// Developer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// PC knowledge  
// Participation in the seminar "Robot programming"



// Safety instructions  
// Integration of the Cubic-S safety module into the robot system  
// Parameterising the individual safety settings of the Cubic-S module  
// Create/adapt safety zones  
// Determination/interconnection safe inputs and outputs



2 days



2 – 4 participants



977,00 € per participant



Kawasaki Robotics Academy Neuss



on request

## K-ROSET simulation

At the end of this seminar you will be able to create your own robot simulations using the PC software K-ROSET.



// System Integrator  
// Developer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// PC knowledge  
// Participation in the seminar "Robot programming"



// Installation/functional overview of the software  
// How to move the robot in simulation software  
// Create and load tool data  
// Create geometries  
// Import objects  
// Create robot programs  
// Cycle time analysis  
// Obstacle contour



2 days



3 – 6 participants



977,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## duAro AS programming

The aim of this seminar is for you to be able to operate the robot safely and analyse simple faults, create programs using our AS programming language and set up the safety module.



// System Integrator  
// Developer  
// Programmer



// Technical knowledge  
// Knowledge of electrical engineering/mechanics  
// Basic knowledge of English  
// PC knowledge  
// Participation in the seminar "Robot programming" and „duAro Tablet“



// Safety instruction  
// Robot system overview  
// Safe switch-on and switch-off procedure  
// Safe operation of the robot  
// AS programming language (Basic)



1 day



2 – 4 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## Operation and programming of painting robots

At the end of this seminar, you will be able to operate the robot safely, create painting programs and adapt the databases for managing the painting parameters.



// Developer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// PC knowledge



// Safety instruction  
// Robot system overview  
// Safe switch-on and switch-off procedure  
// Moving the robot in manual mode (teach mode)  
// Setting of tool coordinates (spray distance)  
// Creation/teaching of coating programs with defined commands  
// Creation/use of databases to manage and control the paint supply  
// Creating programs for automatic path generation  
// Creation of subroutines for cleaning, basic position and paint supply control  
// Observation of wrist and avoidance of singularities



3 days



3 – 6 participants



on request



Kawasaki Robotics Academy Neuss



on request

**Note:** The painting process is simulated during the seminar.

## Integration of painting robots

At the end of the seminar, you will be able to commission the robot system, integrate BUS participants and other painting-specific components into the robot system and create a painting main program and use process-based signals.



// System Integrator  
// System planner  
// Developer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// PC knowledge



// Safety instruction  
// Robot system overview  
// Safe switch-on and switch-off procedure  
// Necessary first steps for putting the robot into operation  
// Moving the robot in manual mode (teach mode)  
// Setting of tool coordinates (spray distance)  
// Setup of General fieldbus, analog output card and Conveyor tracking into the robot system  
// Creation of robot system - PLC communication (reserved signals start, stop and program selection)  
// Creation/preparation of the painting main program  
// Setting up signals for paint-specific applications  
// Explanation of paint-specific robot settings  
// Creating individual user interfaces (Interface panel)  
// Calling up subroutines for cleaning, basic position run and paint supply control  
// Explanation of PC programs for paint signal control



4 days



3 – 6 participants



on request



Kawasaki Robotics Academy Neuss



on request

**Note:** The painting process is simulated during the seminar.

## Arc welding

At the end of this seminar, you will be able to independently integrate the welding power source into your robot application, develop application-specific welding programs, select the parameters and options required in the welding process and analyse simple faults.



// System Integrator  
// Developer  
// Programmer



// Technical knowledge  
// Basic knowledge of English



// Safety instruction  
// Welding robot system overview  
// Setting up external axes (software)  
// Connection of robot to welding power source  
// Integration of General fieldbus into the robot system  
// Allocation of signals and digital I/O  
// Explanation of the various setting options in the robot software  
// Setting of tool coordinates  
// Creation of block and AS program structures



3 days



3 – 6 participants



on request



Kawasaki Robotics Academy Neuss



on request

## Cleanroom

The aim of this seminar is for you to be able to operate the robot safely and analyse simple errors, teach positions and simulate motion sequences.



// System Integrator  
// Developer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// PC knowledge



// Safety instruction  
// Robot system overview  
// Explanation of KRET (Teach tool)  
// Introduction to KMTerm and KR3D (simulation program)  
// Importing KRET-generated positions into the robot  
// Explanation of the most important commands (via manual)  
// Performing simulation and collision free check exercise  
// Introduction to the KSUtility software  
// Exercises on the real robot



3 days



3 – 6 participants



on request



Kawasaki Robotics Academy Neuss



on request



## Picking system

At the end of this seminar you will be able to realise a complete pick and place application with a Y-series robot.



// System Integrator  
// Commissioning engineer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// Knowledge of the AS programming language  
// Knowledge of robot operation  
// Participation in the seminars "Robot programming", "Conveyor tracking", "Interface communication" and "K-VFinder Vision System".



// Safety instruction  
// System application overview  
// Functional overview of the programs  
// Setup the system by using of example programs



1 day



3 – 6 participants



on request



Kawasaki Robotics Academy Neuss



on request

## Conveyor tracking

The aim of this seminar is to enable you to install the relevant hardware components in the robot controller and to define the system-relevant settings for conveyor tracking. Furthermore, program examples with the Conveyor tracking function will be created.



// Programmer  
// Commissioning engineer



// Technical knowledge  
// Knowledge of electrical engineering  
// Basic knowledge of English  
// Knowledge of AS programming language  
// Knowledge of robot operation



// Safety instruction  
// General overview Conveyor tracking  
// Installation procedure of the hardware components  
// Function-relevant settings  
// Safe operation of the robot with Conveyor tracking  
// Creation of program examples  
// Troubleshooting (Basic)



2 days



3 – 6 participants



977,00 € per participant



Kawasaki Robotics Academy Neuss



on request

## General fieldbus

At the end of this seminar you will be able to implement a fieldbus module in the robot system and realise a signal exchange between your PLC and the robot.



// Commissioning engineer  
// Programmer/PLC programmer



// PC knowledge  
// Basic knowledge of English  
// Knowledge of robot operation



// Safety instruction  
// Overview of supported fieldbus systems  
// Hardware installation in the robot controller  
// Explanation of the fieldbus setting in the teach pendant  
// Creating a fieldbus communication between PLC and robot system (PROFINET)  
// Checking the input and output signals between PLC and robot system (PROFINET)



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## Collision detection

The aim of this seminar is for you to be able to set up and use the optional collision detection of the robot system professionally.



// Commissioning engineer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// Knowledge of the AS programming language  
// Knowledge of robot operation



// Safety instruction  
// Overview of the Collision detection function  
// Function-relevant settings  
// Using Collision detection in teach and repeat mode  
// Troubleshooting (Basic)



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## Soft absorber/Changing gain

At the end of this seminar you will be able to set up and use the optional Soft absorber/Changing gain function of the robot system professionally.



// Commissioning engineer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// Knowledge of the AS programming language  
// Knowledge of robot operation



// Safety instruction  
// Overview of the Soft absorber/Changing gain function  
// Function-relevant settings  
// Using Soft absorber/Changing gain in the robot program  
// Troubleshooting (Basic)



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## Interface communication

The aim of this seminar is to enable you to implement communication of various protocols in the robot system and to realise data exchange between peripherals and the robot system. Possible areas of application are, for example, camera systems or sensors connected to the robot system.



// Commissioning engineer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// Knowledge of the AS programming language  
// Knowledge of robot operation



// Safety instruction  
// Overview of the supported protocols  
// Creating a communication between periphery and robot system  
// Checking the data exchange between periphery and robot system  
// Troubleshooting (Basic)



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## K-Logic/K-Ladder

At the end of this seminar you will be able to use the optional K-Logic function in the robot system. The K-Logic function is a software-based PLC that is operated directly on the robot system.



// Commissioning engineer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// Knowledge of the AS programming language  
// Knowledge of robot operation



// Safety instruction  
// Overview of the K-Logic function  
// Using the K-Ladder software  
// Creating a sample program  
// Troubleshooting (Basic)



2 days



3 – 6 participants



977,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## External axis

The aim of this seminar is to enable you to install the relevant hardware components in the robot controller and to define the system-relevant settings for the external axis. Furthermore, program examples are created in connection with an external axis.



// Commissioning engineer  
// Programmer



// Technical knowledge  
// Knowledge of electrical engineering  
// Basic knowledge of English  
// Knowledge of AS programming language  
// Knowledge of robot operation



// Safety instruction  
// General overview  
// Safe installation procedure of the hardware components  
// Function-relevant settings  
// Operation of the robot with Conveyor tracking  
// Creation of programming examples  
// Troubleshooting (Basic)



2 days



3 – 6 participants



on request



Kawasaki Robotics Academy Neuss



on request



## K-SPARC

At the end of this seminar you will be able to create a palletising pattern or program using the optional function K-SPARC in the simulation software K-ROSET.



// Commissioning engineer  
// Programmer



// Technical knowledge  
// Basic knowledge of English  
// Knowledge of the AS programming language  
// Knowledge of robot operation  
// Knowledge in handling the software K-ROSET



// Overview of the K-SPARC function  
// Creating a sample project with K-SPARC  
// Checking the program function in K-ROSET



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## K-VFinder Vision System

The aim of this seminar is for you to be able to commission the Kawasaki Vision System K-VFinder.



// Commissioning engineer  
// Programmer



// Technical knowledge  
// PC knowledge  
// Basic knowledge of English



// Function overview K-VFinder  
// Connection of a camera  
// Calibration and distortion correction  
// Teaching object characteristics  
// Additional functions (e.g. height correction, gripping range monitoring, inspection)



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

## TREND Manager 2

At the end of this seminar you will be able to set up and use the TREND Manager 2 software. TREND Manager 2 can inform you in time about a changing robot condition with the help of continuously collected data.



// Commissioning engineer  
// Maintenance staff  
// Operations manager



// Technical knowledge  
// PC knowledge  
// Basic knowledge of English  
// Knowledge of AS programming language  
// Knowledge of robot operation



// Function overview TREND Manager 2  
// Installing and setup the software  
// Creation and parameterisation of a sample project  
// Integration into existing robot programs  
// Additional functions (e.g. notification via e-mail in case of malfunction etc.)  
// Analysis options



1 day



3 – 6 participants



on request



Web seminar (online) including license 1 year/1 robot



on request

**Note:** The price includes the Trend Manager annual license for one robot. The Mac address of the computer used in the web seminar must be submitted to us 2 weeks before the web seminar takes place. Installation, licensing and testing will take place before the start of the web seminar.

## Data storage

The aim of this seminar is to enable you to create measurement recordings of different robot parameters such as motor current, axis speed etc. with the help of the Data storage function. The subsequent import of the measurement into Excel is also part of this seminar.



// Maintenance engineer  
// Programmer



// Technical knowledge  
// PC knowledge  
// Basic knowledge of English  
// Knowledge of robot operation



// Function overview Data storage  
// Creation and configuration of a measurement logging  
// Exporting the measurement data  
// Import into Excel



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)



on request

### Fixed tool

At the end of this seminar you will be able to set up an external tool in the robot controller and integrate it into a motion program.



// Commissioning engineer  
// Programmer  
// System operator



// Technical knowledge  
// PC knowledge  
// Basic knowledge of English  
// Knowledge of AS programming language  
// Knowledge of robot operation



// Function overview Fixed tool  
// Setup an external TCP  
// AS language command overview  
// Teaching with an external tool  
// Integration in a movement program



1 day



3 – 6 participants



555,00 € per participant



Kawasaki Robotics Academy Neuss



on request

## Spin control

The aim of this seminar is for you to be able to set up the optional Spin control function in the robot system and integrate it into a movement program.



// Commissioning engineer  
// Programmer  
// System operator



// Technical knowledge  
// PC knowledge  
// Basic knowledge of English  
// Knowledge of AS programming language  
// Knowledge of robot operation



// Function overview Spin control  
// Setup the function  
// AS language command overview  
// Integration into a movement program



1 day



3 – 6 participants



555,00 € per participant

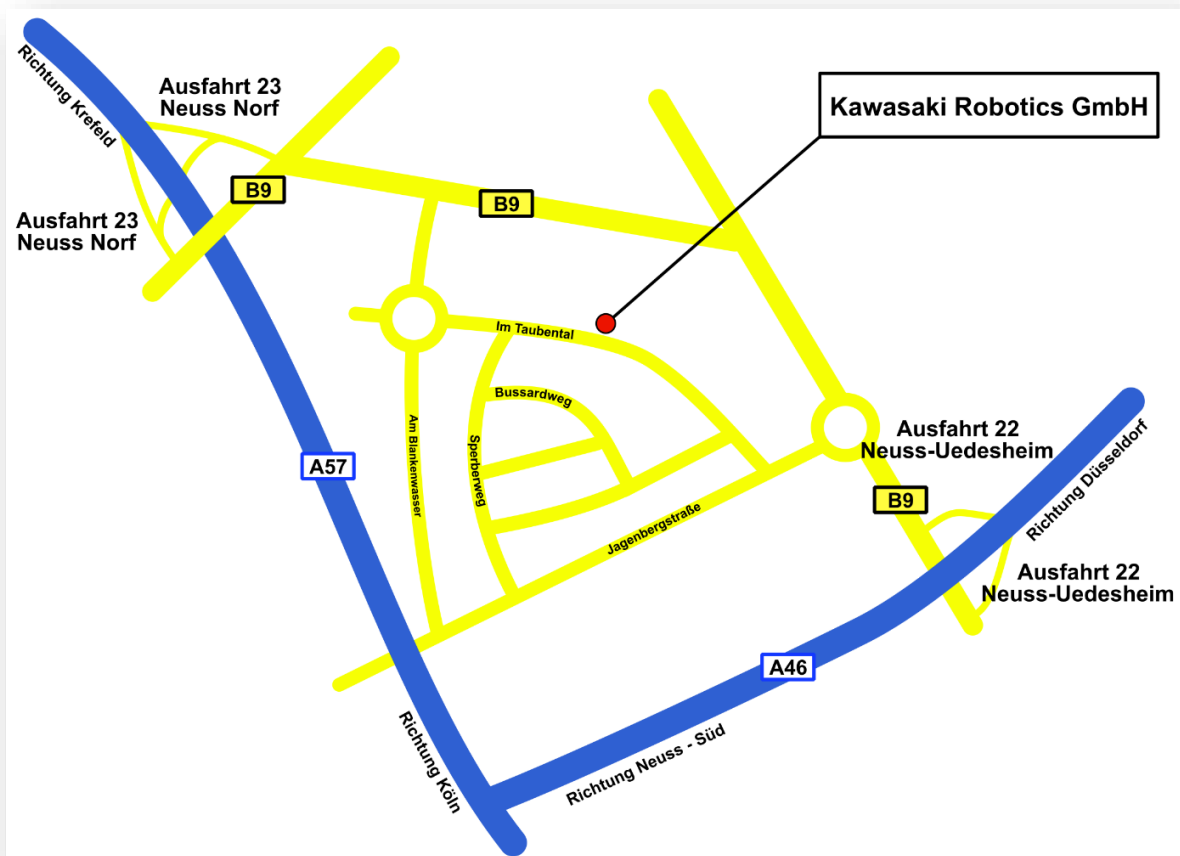


Kawasaki Robotics Academy Neuss



on request

## Directions to the Kawasaki Academy in Neuss



### Address

Kawasaki Robotics GmbH

Im Taubental 32

41468 Neuss

Telefon: +49 (0) 21 31/34 26 - 0

Fax: +49 (0) 21 31/34 26 - 22

## Hotel list Neuss

For your information, here is a selection of accommodation in Neuss.



## LAGE

Am Derikumer Hof 1

41469 Neuss / Düsseldorf, Germany

+49 (0) 2131 138 - 0

### Hotel mit schneller Autobahnanbindung

Das Mercure Hotel Düsseldorf Neuss liegt südlich vom Zentrum der Stadt Neuss und ist verkehrsgünstig über die Autobahn A57 zu erreichen. Mit dem Auto gelangt man in jeweils 20 Minuten an den Flughafen Düsseldorf International (20 Kilometer) und die Messe.

Gleiches gilt für die Düsseldorfer City und die Altstadt. Eine ÖPNV-Haltestelle befindet sich etwa fünf Minuten zu Fuß vom Hotel entfernt. Bis zum Neusser Hauptbahnhof sind es knapp acht Kilometer. Die Messe Köln befindet sich etwa 32 Kilometer entfernt.

[www.gchotelgroup.com/de/portfolio/hotels/mercure-hotel-duesseldorf-neuss](http://www.gchotelgroup.com/de/portfolio/hotels/mercure-hotel-duesseldorf-neuss)





Wir begrüßen Sie herzlich in unserem Hotel-Gasthof „Vater Rhein“. Gerne empfangen wir Sie in unseren gediegen gestalteten Gasträumen, die mit ihrer Atmosphäre zum Verweilen einladen.

Hotel-Gasthof „Vater Rhein“ GmbH  
 Inhaber: Familie Remmer  
 Oberstraße 4  
 41541 Dormagen (Stürzelberg)  
 Telefon: 0 21 33 / 7 19 30 · Telefax: 0 21 33 / 97 42 08  
 E-Mail: info(@)gasthof-vaterrhein.de

[www.gasthof-vaterrhein.de](http://www.gasthof-vaterrhein.de)



#### Ihr Dorint Kongresshotel Düsseldorf/Neuss

Herzlich willkommen in einer der ältesten Städte Deutschlands

Zentrumsnah und idyllisch: Unser Dorint Kongresshotel Düsseldorf/ Neuss befindet sich mitten im Grünen eingebettet im Stadt- und Rosengarten in der historischen Innenstadt Neuss.

Das Vier-Sterne-Hotel überzeugt mit hohem Wohnkomfort und bietet für Geschäftsreisende die optimale Businessausstattung mit der angrenzenden Stadthalle und 18 Konferenzräumen.

Selikumer Strasse 25, 41460 Neuss  
 Telefon: +49 2131 262-0  
 Fax: +49 2131 262-100  
 E-Mail: [info.neuss\(at\)dorint.com](mailto:info.neuss(at)dorint.com)

<https://hotel-duesseldorf-neuss.dorint.com/de>

## Contact

**Herzlich Willkommen bei der Kawasaki Robotics Academy.**

KAWASAKI ROBOTICS GMBH

Im Taubental 32 | 41468 Neuss | Germany

### Kontakt



+49(0)2131-3426-1350



academy@kawasakirobotics.de

### Business hours

Monday till Thursday  
8.00 a.m. to 5.00 p.m.

Friday  
8.00 a.m. to 3.00 p.m.

