



## Training Outcomes

- Develop your understanding of wind energy use
- Understand the aerodynamics of wind turbines as well as control strategies
- Get first-hand market info
- Do the matchmaking with the German and international industry

**Incl. guided tour to wind energy tradeshow, excursions and cultural events**



The global on & offshore event

24 – 27 September 2024  
windenergyhamburg.com

**Optional: Hands-on wind turbine workshop.**

The certified attendance costs 370 EUR for professionals, students 220/280 EUR, incl. tax, group tickets available!  
**Online only participation: 30% off**

In cooperation with:



## Any questions?

Please contact the course coordinator for further information:

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[www.srh-berlin.de/short-courses/](http://www.srh-berlin.de/short-courses/)

[www.gsan.solar](http://www.gsan.solar)

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Berlin University of Applied Sciences

**GSAN international  
Wind Industry Training  
GSAN-iWIT2024**

**20 – 27 September 2024 | Hybrid**

# 3.5-day Training Programme Details

## Session 1

Global status of wind energy - benefits of wind energy

## Session 2

Introduction to wind energy - physics behind the generation of wind and its occurrence - historical development of wind turbines - types of small and large wind turbines

## Session 3

Wind resources measurement and assessment - atmospheric conditions, complex terrains, wind farm effects - site assessment (site selection, measurement equipment, types of meteorological masts, etc.) - energy yield calculation

## Session 4

Aerodynamics of wind - the acting forces - basic blade designs and their influence on the aerodynamic performance

## Session 5

Working principles and efficiency of wind turbines - wind energy and wind power - overall turbine efficiency

## Session 6

Mechanical components - rotor - drive train - support structure

## Session 7

Electrical system and control concepts - grid-connected and off-grid wind power - types of control strategies

## Session 8

Planning, building and commissioning - phases of wind energy project development - energy yield assessment - grid-connection of wind turbines - financing and economic calculation

**Incl. hands-on exercises (demonstration of small wind turbine, handling of multimeters, use of excel sheets and simulation software to calculate energy yield), excursions, cultural programme, training hand-outs and insider tips, university certificate (4 ECTS) and post-seminar guidance.**

**We are cooperating with partaking wind companies and have 1:1 matchmaking sessions and site-visits.**

# Become a Wind Energy Expert

Our **SRH**-accredited main trainer Mr. Abdulkarim Abdulrazek of University Oldenburg has **16 years of experience** in international project and construction management, wind energy consulting and engineering, acted **more than 10 years** in wind energy research and has conducted wind tunnel experiments and installations in several countries like Germany, North Korea, Lebanon, Saudi Arabia, Morocco, Mongolia and Indonesia.

Furthermore Mr. Karim is **specialized** in the design and optimization of testing facilities for small wind turbines following the **IEC 61400-2 standard**, constructed wind measurement systems on meteorological masts and knows how to run QM systems.

