



WIND  
ACADEMY

# Wind Turbine Technology

## Short Course

17th- 18th April 2024 | Natal, Brasil

in partnership with



25  
YEARS



Drivetrain



Structures



Blades

## About ONYX Wind Academy

ONYX Wind Academy is a 2-day Wind Turbine Technology Short Course for operations professionals, reliability engineers, and portfolio managers. With our extensive experience monitoring 20,000 turbines in over 30 countries, we provide valuable insights into whole-turbine predictive maintenance and engineering services for wind farm operators worldwide.

## What You'll Learn

Day one focuses on the drivetrain, bearings, lubricants, and inspection best practices, while day two covers pitch & yaw, blades, structures, and turbine analytics. Led by our experienced engineers with 40 years of combined experience in engineering rotating machinery, you'll gain a deeper understanding of your wind turbine assets and enhance their longevity.

The course is limited to 15 participants. If it reaches full capacity, registrants will be placed on a waitlist and notified of the next available course date.

# Agenda

## Day 1

| Time                        | Session  |
|-----------------------------|--|
| <b>Drivetrain Mechanics</b> |  |
| 8:30am - 9:00am             | Introductions and coffee   |
| 9:00am - 10:00am            | Wind turbine drivetrain components & operating principles            |
| 10:00am - 10:45am           | Why are gearboxes designed the way they are?                         |
| 11.:00am -12:00am           | Bearing common failure modes   |
| 12.:00pm -13:00pm           | Lunch  |
| 13:00pm -14:30pm            | Condition monitoring fundamentals, equipment and analysis techniques |
| 14:30pm -17:00pm            | Hands-on drivetrain inspection training                              |
| 17:30pm -18:30pm            | Networking drinks  |
| 20:00pm                     | Dinner   |

# Day 2

| Time   | Session   |
|--|---|
| <b>Fleet Analytics - Drivetrain and Beyond</b> |   |
| 8:30am-9:00am                                  | Coffee ,Networking and Day 1 recap  |
| 9:00am -10:00am                                | Condition monitoring equipment and analysis techniques: drivetrain, pitch bearings,tower & foundation |
| 10:00am -10:45am                               | Case Studies: Vibration based failure findings  |
| 10:45am-11:00am                                | Break   |
| 11:30am -12:00am                               | Gear Common failure modes   |
| 12:00pm -13:00pm                               | Lunch   |
| <b>Blades</b>                                  |   |
| 13:00pm -13:30pm                               | Case Studies: SCADA analytics findings  |
| 13:30pm -14:00pm                               | Blade root and pitch bearing common failures  |
| 14:00-15:15                                    | Blades overview: structural design, manufacturing and testing   |
| 15:15pm  | Coffee break  |
| 15:30pm -16:30pm                               | Damages and Repairs   |
| 16:30pm -17:00pm                               | Blade sensing and monitoring techniques   |
| 17:00pm  | Feedback  |

Full Wind Turbine Technology short course

**6,000BRL**



**Alberto Vera**  
Senior Consulting Engineer

Alberto Vera has 11 years of experience in wind energy sector acquiring a broad view in WTG Certification strategy according to International standards (OD-501 & IEC-61400 schemes) and in blade structural integrity including design, testing & validation and fleet support. He graduated with a Mechanical Engineering degree from Universidad Pontificia de Comillas and he holds the Project Management Certification from Project Management Institute (PMI) since 2017.



**Robin Elliott**  
Principal Engineer - Data Analytics

Robin has over 15 years of experience in engineering data analysis, for the last 8 years primarily in the wind industry. At ONYX he is as Principal Engineer – Data Analytics, responsible for working with wind farm owners and operators on various projects including the development and implementation of wind turbine life models, reducing the cost of O&M and developing risk mitigating solutions. He is also supporting vibration condition monitoring services, software and hardware development. Robin has a PhD in mechanical engineering and is a Chartered Engineer



**Richard Smith**  
Principal Engineer

Richard Smith is a Principal Mechanical Engineer at ONYX Insight, a data analytics and engineering specialist for the global wind industry. He has worked as an aerospace test engineer and has over 10 years experience in design, build, test and maintenance of wind turbine rotating machinery.

Richard works offshore for major utilities as a chartered engineer, including sign-off for drivetrain repairs.

# Get in touch

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