

**Eastern WV Community & Technical College
Master Course Record**

Course Prefix and Number: WTT 260
Course Title: Wind Turbine Troubleshooting and Repair
Recommended Transcript Title: Wind Turbine Troubleshooting & Repair
Date Approved/Revised: 12/15/14; 09/21/15; 11/6/17
Credit Hours: 4 Contact hours per week (Based on 15 week term): Lecture: 3 Lab: 3
Prerequisite: Pre/Corequisite: WTT 210
Grading Mode: Letter Grade
Catalog Description: This course emphasizes the skills essential to routine maintenance and repair of wind turbine electrical and mechanical systems. The student will learn the practices of installation, operation, maintenance, troubleshooting, and repair of wind turbine systems.
Course Outcomes: <ol style="list-style-type: none"> 1. Utilize wind turbine hub and generator training simulators to learn and operate system components and to demonstrate troubleshooting skills 2. Demonstrate how to isolate electrical and mechanical energy by using Lock Out Tag Out (LOTO) procedures 3. Describe inspection of wind tower, nacelle, and drive train components 4. Understand the functions of wind turbine generator components 5. Explain strategies for inspecting and maintaining wind turbine generators 6. Understand the functions of wind turbine hub and rotor components 7. Explain how the pitch control and battery backup power systems operate 8. Describe techniques for inspecting and maintaining wind turbine hubs and rotors 9. Understand how the system communications and control software interacts with turbine components 10. Describe how to inspect and maintain the external surfaces of wind towers, nacelles, and blades 11. Explain how to develop and implement a preventative-maintenance program 12. Discuss the importance and functions of PPE and the safety protection systems 13. Analyze schematic diagrams 14. Use multimeter 15. Discuss the materials, aerodynamics, manufacture, internal construction, inspection, handling, repair, and transporting of composites
Implementation Cycle: Spring
Role in College Curriculum: (Check all that apply) <ul style="list-style-type: none"> <input type="checkbox"/> General Education Core (Specify category) <input checked="" type="checkbox"/> Technical Core: Wind Energy Technology, AAS <input type="checkbox"/> Restricted Elective (Specify Program)

Course Number & Title: WTT 260 Wind Turbine Troubleshooting and Repair

Date Prepared/Revised: 11/16/10; 12/05/14; 11/6/17

Date Course Approved by Curriculum Committee: 11/6/17

Date Course Approved by LOTE: 11/15/10; 12/15/14; 09/21/15; 11/20/17

<input type="checkbox"/> Workforce Education <input type="checkbox"/> General Elective <input type="checkbox"/> Other (Please specify)
Course Fee: Yes
Instructor's Qualifications: Bachelor's Degree in engineering, related technical field, or industry recognized qualifications.
Expanded Course Description: This course is designed to introduce students to the electromechanical systems that make up the wind turbine hub and generator. Students will use wind turbine hub and generator training simulators, schematic diagrams, and a multimeter to learn, operate, and troubleshoot system components. Topics of study include inspection and maintenance of external surfaces of wind towers, nacelles, and blades; inspection and maintenance of components of wind towers, nacelles, drive trains, generators, hubs, and rotors; and other related subjects.

Prepared by: W. Malcolm, Lead Faculty, 11/17/10; 12/05/14; Skip Landes, Faculty 05/25/15; Eric Putze, Advanced Technology/Wind Energy Faculty, 11/6/17

Approved by:

Robert Eagle (SB-G), Dean, Academic and Student Services 11-15-10; 09/21/15