Eastern WV Community & Technical College
Master Course Record

Course Prefix and Number: WTT 261
Course Title: Wind Turbine Electromechanical Systems & Troubleshooting II
Recommended Transcript Title: Wind Turbine Troubleshooting & Repair
Date Approved/Revised: 12/15/14; 09/21/15; 11/20/17; 10/28/19
Credit Hours: 4 **Contact hours per week (Based on 15 week term):** **Lecture:** 3 **Lab:** 3
Prerequisite: **Pre/Corequisite:** WTT 211
Grading Mode: Letter Grade
Catalog 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.
Course Outcomes: 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 a multimeter 15. Discuss the materials, aerodynamics, manufacture, internal construction, inspection, handling, repair, repair materials & safety, and transporting of composites
Implementation Cycle: Spring

Role in College Curriculum: (Check all that apply) ☐ **General Education Core (Specify category)** **X Technical Core:** Wind Energy Technology, AAS ☐ **Restricted Elective (Specify Program)** ☐ **Workforce Education** ☐ **General Elective** ☐ **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 replaced WTT 260 in Fall 2020.

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; 10/1/19

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