Wind Blade Repair Body of Knowledge

Module 1: Composites Knowledge/Materials in Wind Energy (20%)

1. History and understanding of the composites industry
2. Manufacturing process and methods in composites
3. Why composites are unique and their advantages
4. Introduction and selection of composite materials
5. Why composites are unique and their advantages in wind energy
6. Where composites are used, overview and components

Module 2: Methods Materials and Composites Manufacturing Processes (20%)

1. Open Molding processes
2. Closed Molding and other processes
3. Manufacturing process technology
4. Wind Blade component materials and processes

Module 3: Composites in Wind Energy, Repair Methods and Materials (20%)

1. The matrix
2. Cores
3. Adhesives
4. Surface Coatings
5. Fabrication processes for wind energy applications
6. Repair decisions
7. Secondary fabrication
8. Material selection and compatibility

Module 4: Composite Blade and Component Repairs (20%)

1. Background, industry growth and need
2. Identifying the composite
3. Damage and defect inspection - blade defects
4. Damage removal
5. Record of removal and documentation of damage
6. Repair - process and documentation
7. Field work instructions, manufacturers recommendation and quality documentation requirements
8. Repair of the Lightning Protection System

Module 5: Wind Energy Composites Safety (20%)

1. Introduction to safety culture and requirements
2. Chemicals- handling and storage
3. Confined space entry
4. Electricity
5. Climbing
6. Onsite safety