

Student ID: _____ Section _____ Name _____

Department: **Electrical Engineering**

Program: **BS (EL)**

Assignment 2
EL-425 Renewable Energy Systems

Announced date: 25/04/2024

Due Date: 06/05/2024

Total Marks = **2.5**

Marks Obtained =

Teacher Name: **Engr. Fawad Shaukat**

Sr. No	Course Learning Outcomes	PLOs	New Blooms Taxonomy
CLO_2	Knowledge of renewable energy technology and parametric interpretation of wind energy conversion systems	PLO_4 Investigation	C2 (Understanding)

Problem:

The cubic relationship between power in the wind and wind velocity tells us that we cannot determine the average power in the wind by simply substituting average wind speed. We can begin to explore this important nonlinear characteristic of wind by rewriting the equation in terms of average values: $P_{avg} = \left(\frac{1}{2}\rho A v^3\right)_{avg} = \frac{1}{2}\rho A (v^3)_{avg}$.

Generalize an equation that interprets the average value of the cube of velocity as stated above.