ME 654 Wind Energy Conversion (3-0-0-6)

Sources and characteristics of wind, selection of site, wind resource assessment, power in the wind; classification of wind turbines, horizontal and vertical axis wind turbines, wind turbine aerodynamics, applications-wind diesel systems, wind farms, wind pumps and offshore wind turbines; turbine airfoils and rotor wakes, operational characteristics; structural considerations, wind turbine acoustics, electric power systems, economic assessment, environmental and social issues.

References:

[1] J F Walker, and N Jenkins, *Wind Energy Technology*, John Wiley and Sons, 1997.

[2] D A Spera, (Ed.), *Wind Turbine Technology*, ASME, 1994.

[3] N G Calvert, *Windpower Principles: Their Application on the Small Scale*, London, Griffin, 1978.

[4] F R Eldridge, *Wind Machines*, NY: Von Nostrand Reinhold, 1980.

[5] D M Eggleston, and F S Stoddard, *Wind Turbine Engg. Design*, Von Nostrand, New York, 1987.

[6] L L Freris, (Ed.), *Wind Energy Conversion Systems*, Prentice Hall, London, 1990.

[7] D M Simmons, *Wind Power*, Noyes Data Corp. New Jersey, 1975.