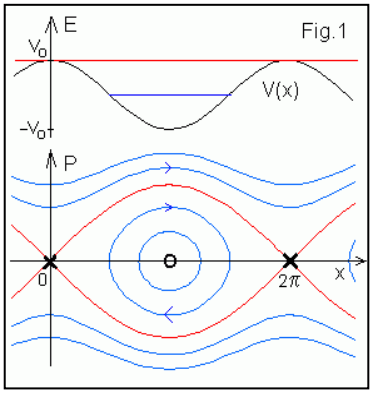
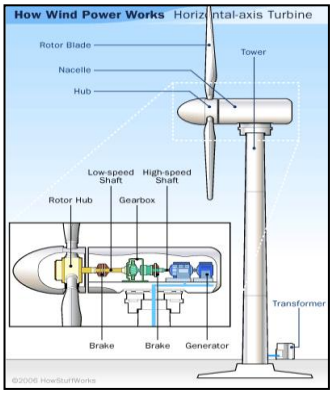
EE 5332: Power Systems Dynamics and Stability

Instructor: Aranya Chakrabortty





The objective of this course is to provide an understanding of the advanced concepts of dynamics and stability theory as applied to power systems. With the growing complexity and size of power systems throughout the world, stability and dynamic performance of power system components have become crucial subjects of study. This has been further triggered by the emergence of the smart grid technology, integrated with renewable energy and distributed generation. This course will provide a clear picture of the current global picture of power system generation, transmission and distribution structure, new challenges on stability and dynamic performance that these networks need to satisfy, and how modern technological developments in power system measurement and instrumentation such as phasor measurements can be used for such stability analysis and dynamic monitoring.

Pre-requisites for this course are:
1. A fundamental course on System Theory (EE 3303 or equivalent)
2. A primer on Power Systems Engineering (EE 4343 or equivalent)

Interesting class projects, based on Matlab/Simulink/Powerworld, as well as real power system examples will be included as a part of the study. The course is targeted towards EE senior undergrads and graduate students, but students from Mechanical Engineering and Wind Science are also encouraged to register.