Power Electronics Prep

This seminar is designed for engineers interested in taking the graduate-level Power Electronics course, ECE5025 or other electrical power related classes on electric machines.

Basic concepts of energy and power are explained along with math skills used to design and analyze power electronic circuits. Use of the simulation tool PSIM is introduced to prepare students for homework and projects in the course.

Topics presented in the Power Electronics Prep seminar include:

- Power electronics in vehicle applications
- DC/DC converters
- Inverters
- Requirements of active/passive components of vehicle electronics
- Challenges of active/passive components of vehicle electronics
- Basic pulse width modulation scheme
- Distribution system of the power grid & PHEV issues

Prerequisites: BS in Mechanical or Electrical Engineering; this prerequisite requirement can be waived or substituted with written permission of Professor Raj Singh, for students who can demonstrate sufficient background in mathematics and Matlab.

Ohio State University’s Automotive NVH certificate includes international collaboration with Asian partner, the Korean Advanced Institute of Science and Technology (KAIST).