



Advanced Topics in Power Electronics

ECE 7841

Credit Hours:

3.00 - 3.00

Course Levels:

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Advanced topics of power electronics, beginning with utility and vehicle applications and evolving into advanced circuit topologies and control.

Prerequisites and Co-requisites:

Prereq: 5025 (624).

Course Goals / Objectives:

- State-of-the-art power electronics circuits and control methods will be introduced
 - Circuit analysis and simulation skills will be enhanced
 - Practical design guidelines will be utilized in multiple week projects
-

Course Topics:

- FACTS devices and other applications of power electronics in electric power system
 - Vehicle applications of power electronics
 - Advanced circuits 1: isolated dc/dc converters
 - Advanced circuit 2: multilevel inverters
 - Advanced circuit 3: Z-source inverter/converters
 - Circuit application example: MW solar power plant
 - Multiple-week project
-

Designation:

Elective