

Course Topics

EEE598: Photovoltaic (PV) Systems

Course Description:

The use of photovoltaics (PV) has increased dramatically over the last years, driven by cost reductions in the PV systems. The goal of the course is to be able to calculate, design and understand the components of PV systems; design and optimize a PV system for a range of PV applications; to be able to calculate and analyze the initial and levelized cost of PV electricity; understand and analyze the reliability of the PV systems; and to understand how non-technical barriers and incentives affect PV Systems.

Prerequisites:

Familiarity with basic electric circuits.

Course Topics:

1. Overview of PV applications and systems
2. Overview and background: Overview of PV modules and characteristics; Overview of electricity grid system
3. PV system components: PV modules; Power conditioning; Battery storage; Balance of system Components; Loads
4. PV system parameters
5. Solar radiation for PV system analysis
6. Life cycle and levelized costing for PV systems
7. Reliability
8. Photovoltaic system design