**Speakers:** Thomas Bernens, Ryan Gartman, Teo Hall, and Ramiro Novoa

**Title:** Cyber Security for Power Grids

**Abstract:** Power grids have lately become a matter of concern when analyzing possible cyber security threats. The purpose of this presentation is to analyze the current industrial supervisory control and data acquisition system (SCADA) and infrastructure behind this technology to identify the weaknesses. We study the hardware-software alternatives that will secure the networks. More specifically, our talk will concentrate on 1) alternatives to current hardware and the advantages that each option presents, 2) analysis of existing communication protocols and how IPv6 could provide a higher standard of network layer security and reliability, 3) SCADA’s weaknesses and how to fix them from a software perspective, 4) transition from power meters/grids to smart meters/grids, and 5) machine learning approaches to detect, control and prevent excessive power consumptions when they are unexpected. This research is conducted and presented by four undergraduate students majoring in Computer Science and Computer Engineering.