Increasing energy demand and depleting fossil fuel motivate the use of renewable sources for electricity generation. Sources such as solar PV, wind and fuel cell have different electrical characteristics and may not be suitable for direct connection to grid. Highly efficient dc-dc and dc-ac converters are used to interface these sources. For maximum utilization of these sources, maximum power point tracking techniques are used. Power generated by these sources should be synchronized to the grid by Phase Lock Loop (PLL). Further, low Total Harmonic Distortion (THD) in current and unity power factor operation should be ensured. Coordinated control of storage and sources is desired. Renewable sources are also used in dc and ac microgrids to ensure reliable power to loads even during grid failure. Control of these sources to ensure voltage and frequency regulation and optimal utilization of power is desired.

The aim of this course is to provide exposure to faculty members, practicing engineers and students to the fundamental concepts of renewable integrations. This course begins with recent advancements in dc-dc and dc-ac converters. Overview of various renewable technology would be provided. Control challenges including synchronization and maximum power point tracking will be discussed. Converter topologies and control for dc and ac microgrids will also be discussed.

**Target Audience:** Faculty members, practicing engineers & students.

**Registration Fee**
- Academia: Rs. 10,000/-
- Industry: Rs. 15,000/-
- Student: Rs. 8,000/-

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**Last Date for Registration**
March 20th, 2015

**Web Page**
http://home.iitk.ac.in/~asandeep/sc/

**Registration Form**
http://home.iitk.ac.in/~asandeep/sc/registration.html