Eagle PCB design software was introduced. In lab 1, a schematic was built with LM555 timer in astable configuration, to turn on/off two leds. LM555 is powered by a 9V battery and produces a oscillation with period of approximately 10s. This oscillation at the output is designed to toggle the leds at a frequency of 0.1 Hz. After the schematic was assembled as described by the lab manual, Electrical rule check button was pressed to find out any errors. Unconnected error was returned due to the CV port of the LM555 was left open. This error was ignored, and the lab 1 was successfully completed. The lab1 helped us in getting familiarized with the Eagle PCB design software.

The current meter design is intended to minimize the effects of burden voltage that is present in the multimeters used in the lab. The current meter will be designed to include 2 ranges – 100mA and 1A. The maximum current rating is set to be 10A and will only be able to read positive DC currents. The circuit will be powered by primary 9v battery, and the analog current measurement will be sampled at 12kSPS (based on atmega32 specs), and the digital output will have 10-bit resolution. The circuit will be protected using a fuse.