**Dept. of ECE, North South University, Dhaka, Bangladesh**

**EEE111/ETE111 (Analog Electronics I)**

**Term Project: Design of a DC Power Supply**

In this term project, you will design a power supply that converts the regular 220 Volts 50 Hz (AC voltage) power into a DC power supply in the range of 5 to 8 volts. The power supply should be able to deliver reasonable amounts of DC current (a few milliamperes to about an ampere) to variable size loads. Each group is assigned with a particular DC voltage output within this range for their project. The output voltage should remain constant with minimum ripple for variable size loads. Your design must include the following blocks in the minimum:

1. A step-down transformer
2. A rectifier
3. A filter
4. A regulator

The design can be closed packaged, but the interior points in the design should be accessible by the instructor upon request to verify functionality after each stage of the design.

***Special Safety Consideration***: ***Students must be extremely careful with the 220V primary side of the transformer, because there is a risk of dangerous electric shock if this side is not properly insulated***. So, if any group works with uninsulated or exposed live wires on the primary side, that project would be deemed canceled immediately with no grade. **This is necessary to ensure the safety of the students.**

You have to maintain the following deadlines. Please note that you can always submit your work before the deadlines.

**Important Deadlines**:

* Proposal submission: Thursday, 08/08/2019
* Preliminary circuit demo on breadboard: Saturday, 22/08/2019
* Final report and design submission: Tuesday, 25/08/2019

\*\* Your proposal and final report should contain your objective, your design, list of the equipment you are using, circuit diagram, schematics of your circuit (using proteus). In addition, your final report should contain brief details about the component you are using, a section briefly discussing the challenges you have faced to design and implement this project.

**Assigned DC output voltage:**

**5 Volts DC:** Group 2, Group 4, Group 8

**6 Volts DC:** Group 1, Group 6, Group 9

**8 Volts DC:** Group 3, Group 5, Group 7