



Electrical and Computer Engineering Department

Power Electronics-ENEE 3305

**An Assignment on Power Supply Design Using Rectifiers and Voltage Regulators
Fall 2017**

1. You are required to design a **12V and 15A** power supply. The regulated power supply is fed from a three- phase full wave Rectifier. The Line-to-Line voltage sources are 380Vrms and 50 Hz, and is connected to the regulator via a step down transformer.
2. Show the design steps of the step-down transformer, the capacitor at the input of the linear regulator, and the linear regulator; the linear regulator is to be designed from discrete components!
3. Show the Orcad/PSpice circuit and its simulations results!
4. Show the voltage and current in the time domain simulations, at various stages (nodes) the power supply!
5. Calculate the attenuation in ripple due to such a regulator
6. Design steps, simulation, results and conclusions must be shown and presented in a well written report.

The assignment is due to on Thursday **23rd November 2017**, please send the assignment as a report in a soft copy and also submit it as a printed report.