You're given the same oven from the previous homework. The heater is controlled by a solid state relay (SSR). The relay is designed to turn on with 5V and draw about 10mA. You are given a 5V power supply that can provide up to 100mA. A LM35 temperature sensor is mounted in the oven and when powered provides a 10mV/C output (i.e. the output is 100mV@10C, 200mV@20C, etc).

Complete the design to keep the oven at 50C. Since this is above room temperature you want to turn on the heater when the oven is below 50C.

Hint: Remember that the LM311 has an open collector output. Look at the example in the datasheet of the LM311 connected to a relay. Once you have the circuit figured out on scratch paper print this page and complete the circuit. List all resistor values (and don't forget the power supply decoupling caps). Show all power and ground connections. Lastly add a sentence or two explaining how the circuit works.