Georgia Institute of Technology

School of Electrical and Computer Engineering

ECE 3043   Electrical and Electronic Circuits Laboratory   Verification Sheet
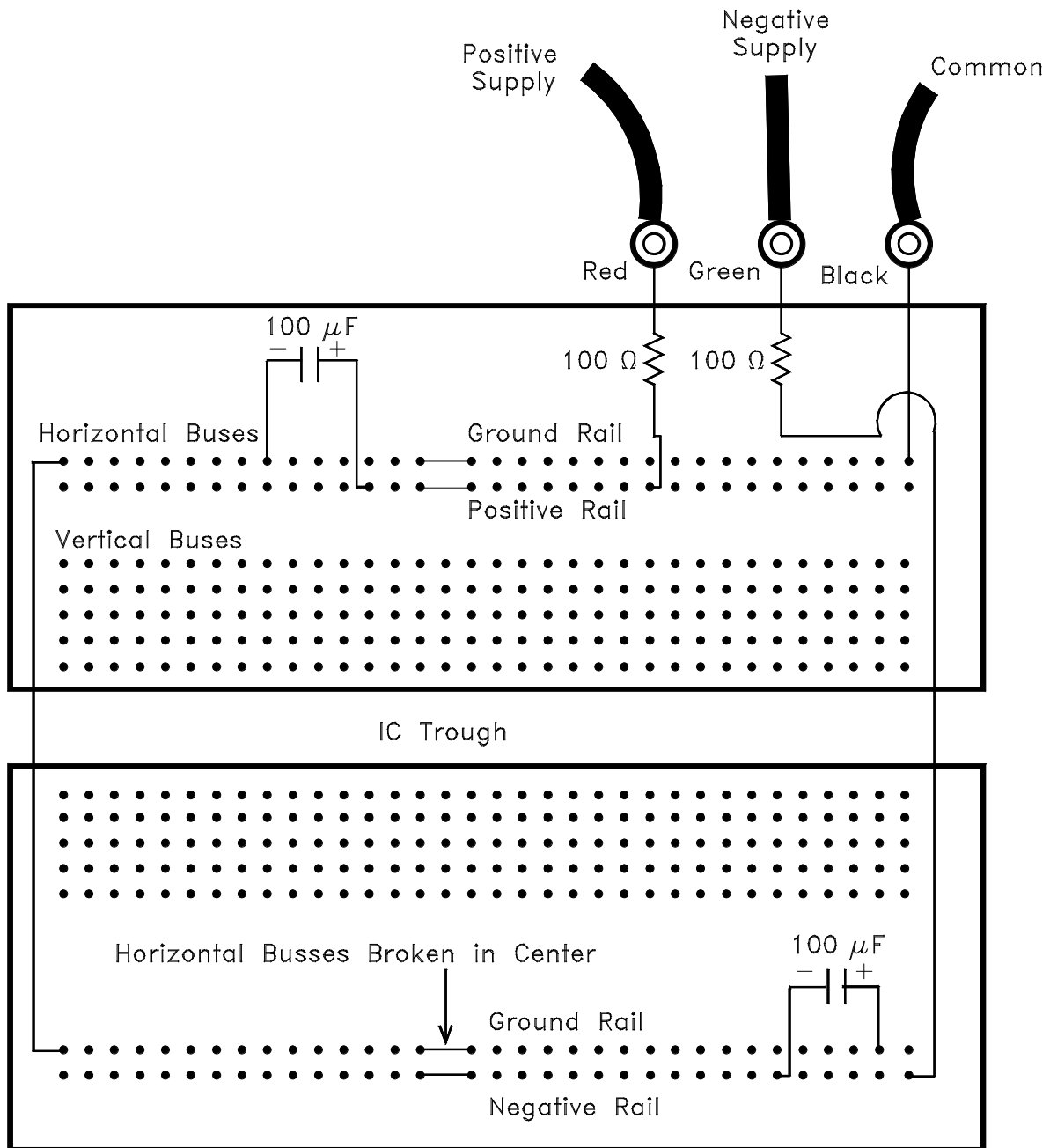
NAME:_____   SECTION:_____

AD LOGIN:_____

Experiment 5: Basic Op-Amp Circuits 1

Procedure	Time Completed	Date Completed	Verification (Must demonstrate circuit)	Points Possible	Points Received
2. Non-Inverting Amplifier				20	
3. Inverting Amplifier				20	
4. Inverting Amp with T Feedback				20	
5. Integrator				20	
6. Differentiator				20	

To be permitted to complete the experiment during the open lab hours, you must complete at least **four** procedures during your scheduled lab period or spend your entire scheduled lab session attempting to do so. A signature below by your lab instructor, Dr. Brewer, or Dr. Robinson permits you to attend the open lab hours to complete the experiment and receive full credit on the report. Without this signature, you may use the open lab to perform the experiment at a 50% penalty.

SIGNATURE:_____   DATE:_____

Positive Supply

Negative Supply

Common

Red   Green   Black

100 μF
$-$ $+$

100 Ω 100 Ω

Horizontal Buses   Ground Rail

Positive Rail

Vertical Buses

IC Trough

Horizontal Busses Broken in Center

Ground Rail

100 μF
$-$ $+$

Negative Rail

ECE 3043 Check-off Requirements for Experiment 5

Make sure you have made all required measurements before requesting a check-off. For all check-offs, you must demonstrate the circuit or measurement to a lab instructor. All screen captures must have a time/date stamp.

2. Non-Inverting Amplifier
   - ✓ Oscilloscope screen capture showing 1 kHz input sine wave and output and Vpp measurements for each signal
   - ✓ Calculation of the gain at 1 kHz.
   - ✓ Oscilloscope screen capture showing input and output signals at the -3 dB frequency. Display Vpp. measurements for each signal and the frequency. Be sure to adjust the CIRCUIT OUTPUT to 1 Vpp before increasing the frequency from 1 kHz.
   - ✓ Screen capture displaying input and soft clipping on output and measured positive and negative peak amplitudes (can use max and min functions on scope).
   - ✓ Screen capture displaying input and hard clipping on output and measured positive and negative clipping levels (can use max and min functions on scope).
3. Inverting Amplifier
   - ✓ Same as for 2.
4. Inverting Amp with T Feedback
   - ✓ Same as for 2.
5. Integrator
   - ✓ Oscilloscope screen capture showing input 100 Hz sine wave and output signal. Display Vpp measurements for each signal.
   - ✓ Calculation of the gain at 100Hz.
   - ✓ Plot of gain versus frequency made with HPVEE, LabView, or by hand. Set input to 0.2 Vrms.
   - ✓ Oscilloscope screen capture showing input and output signals and Vpp measurements for each signal for triangle wave input of 100 Hz. Dc couple the scope channels.
   - ✓ Oscilloscope screen capture showing input and output signals and Vpp measurements for each signal for square wave input of 100 Hz. Dc couple the scope channels.
6. Differentiator
   - ✓ Oscilloscope screen capture showing input 100 Hz sine wave and output signal. Display Vpp measurements for each signal.
   - ✓ Calculation of the gain.
   - ✓ Plot of gain versus frequency made with HPVEE, LabView, or by hand. Set input to 0.2 Vrms.
   - ✓ Oscilloscope screen capture showing input and output signals and Vpp measurements for each signal for triangle wave input of 100 Hz. Dc couple the scope channels.
   - ✓ Oscilloscope screen capture showing input and output signals and Vpp measurements for each signal for square wave input of 100 Hz. Dc couple the scope channels.