Georgia Institute of Technology

School of Electrical and Computer Engineering

ECE 3043 Electrical and Electronic Circuits Laboratory Verification Sheet

NAME:_____ SECTION:_____

AD LOGIN:_____ GTID:_____

Experiment 4: Second Order Circuits

Procedure	Time Completed	Date Completed	Verification (Must demonstrate circuit)	Points Possible	Points Received
4. Step and Square Response of Series RLC				35	
7. Sine Response of Series RLC				35	
9. Step Response of Parallel GLC				30	

To be permitted to complete the experiment during the open lab hours, you must complete at least **three** 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:_____

ECE 3043 Check-off Requirements for Experiment 4

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.

4. Step and square response of RLC circuit
   - ✓ Table of measured component values.
   - ✓ Calculation of theoretical α and ζ.
   - ✓ Scope screen capture showing resistor current and resistor voltage. Show points measured with cursors.
   - ✓ Calculation of f_d and α.
   - ✓ Scope capture of voltages for square wave input having $f = \alpha/2$.

7. Sine Response of Series RLC
   - ✓ Table of measured component values.
   - ✓ Calculation of theoretical f_o and Q.
   - ✓ Scope XY plot for determining resonance frequency.
   - ✓ Bode magnitude plot using automated measurement software.

9. Step Response of Parallel GLC
   - ✓ Table of measured component values.
   - ✓ Calculation of theoretical α, ω_o, and ζ.
   - ✓ Scope capture of voltages for square wave input having $f = 0.1\alpha$.
   - ✓ Scope screen capture showing resistor current and resistor voltage. Show points measured with cursors.
   - ✓ Calculation of f_d and α.