

ECE2270**Lab2 – Notebook Point Breakdown**

<i>Communications (Keeping a Proper Notebook)</i>	<i>30 Points Total</i>
Written in Ink	4
Student Signed every page	4
Student Dated every page	4
TA Signature for every lab session (-3 each session missed)	6
Student's work Reproducible from notebook.....	12
 <i>2. Component Measurements</i>	 <i>5 Points Total</i>
Table of Components (Measured Values L, Rs, Cs)	3
Description of experiment to measure Cs	2
 <i>3. Preliminary Work</i>	 <i>20 Points Total</i>
A. Sum a Fourier Series:	
Matlab code for Fourier sum and triangle wave plot.....	3
Matlab plot: approximate triangle wave based on Fourier sum	2
B. Calculate Output Voltage:	
1. Matlab code to calculate $v_o(t)$	3
2. Plot $v_o(t)$ for $R_1=10k\Omega$, $C_1=22nF$, etc.	2
3.a. Matlab code to calculate and plot $ V_o/V_g $ vs frequency	2
3.b. Matlab plot $ V_o/V_g $ vs frequency for $R_1=10k\Omega$, $C_1=22nF$, etc.	2
4. Explain shape of $v_o(t)$ from 3.b.....	2
5. Plot $v_o(t)$ for $R_1=10k\Omega$, $C_1=22nF$, etc. and different periods $v_g(t)$	2
5. Explain shape of $v_o(t)$ for different periods $v_g(t)$	2
 <i>4. Circuit Design</i>	 <i>20 Points Total</i>
A. Approximate equations for frequency response:	
Approximate equations	2
Consistency check	1
B. Reject fundamental at 1 kHz:	
Component values	1
Matlab plot of $v_o(t)$	2
Matlab plot of $ V_o/V_g $	2
Matlab code listing	2
Explain shape of $v_o(t)$	2
C. Reject fundamental at 9 kHz:	
Component values	1
Matlab plot of $v_o(t)$	2
Matlab plot of $ V_o/V_g $	2
Matlab code listing	1
Explain inadequacy of approximate design equations.....	2
 <i>5. Measurements</i>	 <i>15 Points Total</i>
Measured component values.....	2
A. Measured plot of $ V_o/V_g $	8
B. Measured $v_o(t)$ with triangle wave 1 kHz input.....	5
 <i>6. Comparison of Calculated and Measured Results</i>	 <i>5 Points Total</i>
A. Calculations with measured component values:	
Matlab plot of $v_o(t)$	1
Matlab plot of $ V_o/V_g $	1
Matlab code listing	1
B. Sinusoidal frequency response:	
Comparison plot of measure and calculated $ V_o/V_g $	1
C. Triangular-wave response:	
Comparison plot of measure and calculated $v_o(t)$	1
 <i>7. Conclusions</i>	 <i>5 Points Total</i>