

**30 Communication**

- 4 Work recorded in notebook (rather than pasted in)
- 8 Complete information: task descriptions, diagrams, data, reproducible one year later
- 4 Written in Ink
- 4 Student Signed every page
- 4 Student Dated every page
- 6 TA Signature for every lab session (-3 each session missed)

Lab 4**14 V. DESIGN OF CIRCUIT**

- 6 Equation for C_1
- 1 Calculated value for C_1
- 6 Equation for C_2
- 1 Calculated value for C_2

14 VI. CHARACTERIZATION OF COMPONENTS

- A. *Resistor*
 - 1 Measured value of 10 k Ω resistor
- B. *Inductor*
 - 2 Measured value of inductor
 - 2 Measured value of R_s
 - 4 Measured value of C_s
 - 3 Expansion of measurement procedures for L , R_s , and C_s
- C. *Capacitors*
 - 2 Measured values of C_1 and C_2

22 VII. PLOTS OF FILTER RESPONSE

- B. *Transfer Function*
 - 6 Listing of Matlab[®] function that calculates $H(j\omega)$
- C. *Frequency Response*
 - 6 Listing of Matlab[®] script file that calculates $H(j\omega)$ for $\omega = 0$ to $2\pi \cdot 6$ kr/s
- D. *Plot of Frequency Response*
 - 4 Listing of Matlab[®] script file that plots $H(j\omega)$ for $\omega = 0$ to $2\pi \cdot 6$ kr/s
 - 3 Plot of predicted $H(j\omega)$ for $\omega = 0$ to $2\pi \cdot 6$ kr/s for ideal components
 - 3 Plot of predicted $H(j\omega)$ for $\omega = 0$ to $2\pi \cdot 6$ kr/s for measured components

12VIII. CONSTRUCTION AND MEASUREMENT OF FILTER CIRCUIT

- 1 Sketch of RC charge and discharge curve for R_1 and C_1
- 4 Measured frequency response of filter for $f = 0$ to 6 kHz
- 4 Listing of Matlab[®] code for plot of measured filter response for $f = 0$ to 6 kHz
- 3 Plot of filter response for $f = 0$ to 6 kHz superimposed on plot from VII.D

8 IX. EFFECT OF FILTER ON TRIANGLE WAVE

- 2 Listing of Matlab[®] code for plot of filter input and output
- 3 Matlab[®] plot of filter input and output for 1 kHz triangle wave input
- 3 Comment on whether filter eliminates 1 kHz component of triangle wave