

EGR 220 Lab 6: Series RLC Circuit Editing Rubric

	Possible Points	Score	Comments
Determine the resonant frequency through measurements and observations and clearly state the experimental resonant frequency and how it was found.	2		How f_r was found, and some discussion
Include well labeled plots of the voltage magnitude and phase that are discussed and explained in the text of the report. (less emphasis on phase) (Q1 at end)	3		Bode magnitude & phase plots are included, referred to in the text with some discussion, explanation
Explain why the voltage across the series combination of the capacitor and the inductor is a minimum at resonance. (Q2 at end)	2		EXPLAIN why V_{lc} is a minimum at f_r . Best if include some discussion of fundamental principles such as KVL and conservation of energy
Explain how it is possible for the voltage across the capacitor to exceed the source voltage. (Calculates theoretical capacitor voltage magnitude at resonance.) (Q2 at end)	3		EXPLAIN how it is possible for $V_c > V_s$. Best if refer to fundamental principles
Discuss how the value of the resistance affects the damping of the circuit response in general, and how this can be used in circuit design (Q3 at end) AND: Qualitative discussion of R_{over} on V_c over whole range of frequencies	3		Discuss the effect of R on circuit behavior. Include discussion if $R = 50k$, if R goes to infinity and to 0. Comment on how R contributes to value of α and how that affects damping.
Discuss the concept of resonance in a qualitative context, so as to be able to describe and define the phenomenon to a friend. (Q3 at end)	3		Qualitative discussion of resonance, including explanations that ANY person would understand
Writing is clear, concise, logical, with sufficient detail, free from casual language. Follows appropriate format overall, is professional looking.	4		Format, style & general discussion Title and objective All questions from lab handout, including those at end Closing statement
TOTAL	20		