⊑ ⊑ ⊑ E 2240

Laboratory Project 4: Frequency Response and Filters **Report Contents and Grading**



30 Communication

- IEEE single column, double spaced format, title, author, etc. (-20 pts if not used)
- 5 Style (written in the style of article, rather than disjointed figures and tables)
- 5 5 English (grammar, punctuation, and etc.)
- Clarity (purpose of each section clearly explained)
- 3 Succinctness and precise wording (detailed information in as few words as possible)
- 3 Organization (ease of locating figures/code/equations/etc.)
- 3 Section numbers and headings (use section numbers shown below)
- 3 Equations explained (at least one sentence between equations)
- Figures complete (every figure numbered, captioned, and referred to in text)
- 5 Abstract (succinct summary of results, including numerical values as appropriate)

12 I. INTRODUCTION

- Motivation/background for filter [e.g., altering music] 6
- 4 Circuit overview [schematic and brief description of how circuit works]
- 2 Report organization [briefly describe contents of sections that follow]

18 II. FILTER CIRCUIT DESIGN

- Explanation that filter uses two resonances, series and parallel to achieve desired response
- 5 Presentation and explanation of equation for C_1 and calculated C_1
- 5 Presentation and explanation of equation for C_2^1 and calculated C_2^1

22 III. CHARACTERIZATION OF FILTER FREQUENCY RESPONSE

- Description of how component values were measured 10
- Table listing component values 6
- Presentation of Matlab® plot showing ideal, predicted, and measured frequency response 6

IV. EFFECT OF FILTER ON TRIANGLE WAVE 8

- Presentation of Matlab® plot of 1 kHz input triangle wave and filter output waveform
- Explanation of filter output waveform
- **CONCLUSION** (summarize key results; include numerical values as appropriate)