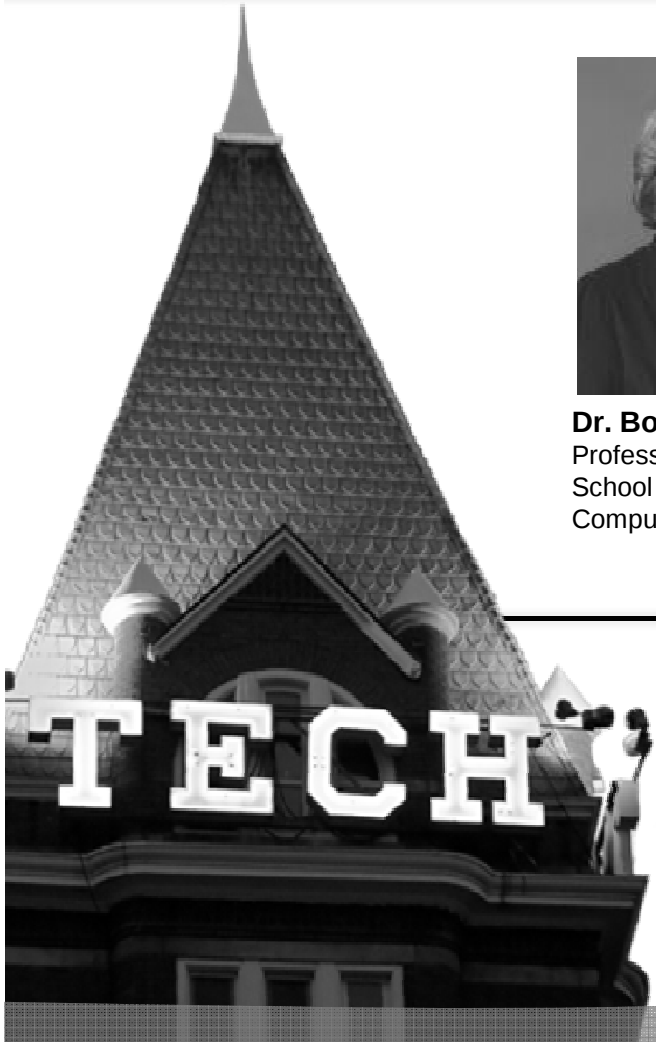


Linear Circuits



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An introduction to linear electric components and a study of circuits containing such devices.

Lowpass and Highpass Filtering



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Introduce lowpass and highpass filters

Module 4:

- ⦿ Sinusoids and Phasors
- ⦿ Impedance
- ⦿ AC Circuit Analysis
- ⦿ Transfer Functions
- ⦿ Frequency Spectrum
- ⦿ Frequency Response
- ⦿ Filtering

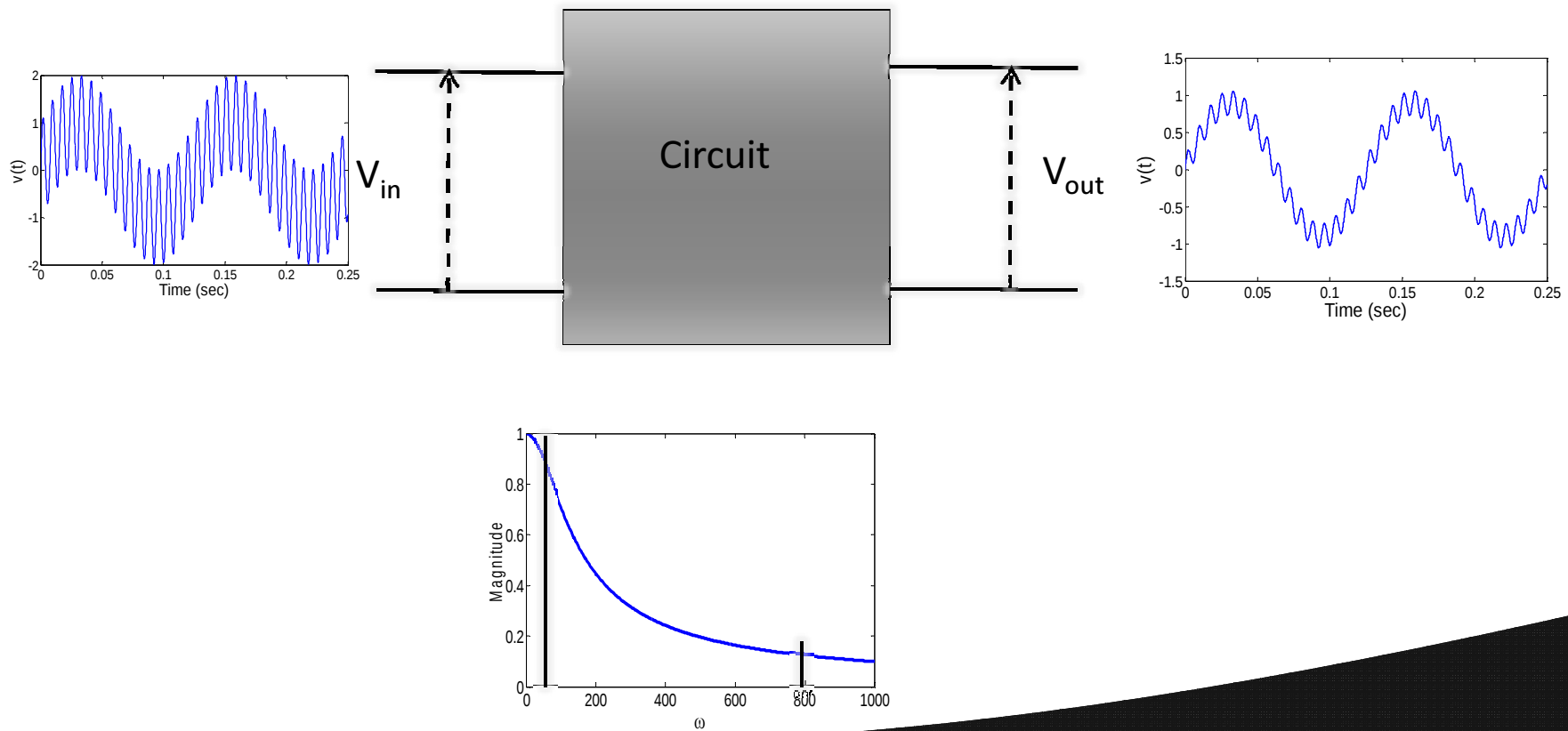
Previous Lesson

- ⦿ Examined the frequency responses of RC and RLC circuits

Lesson Objectives

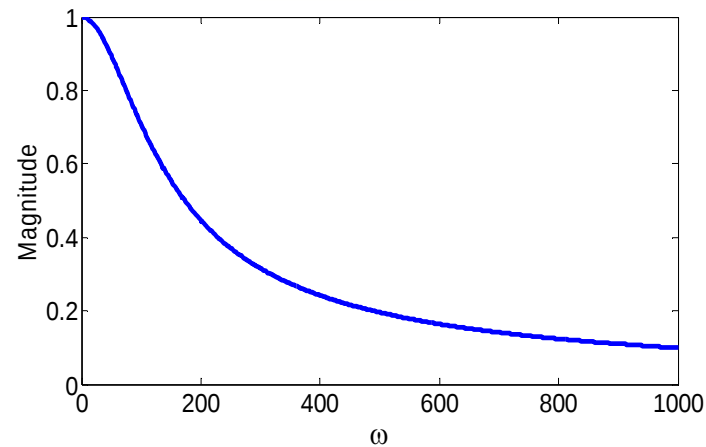
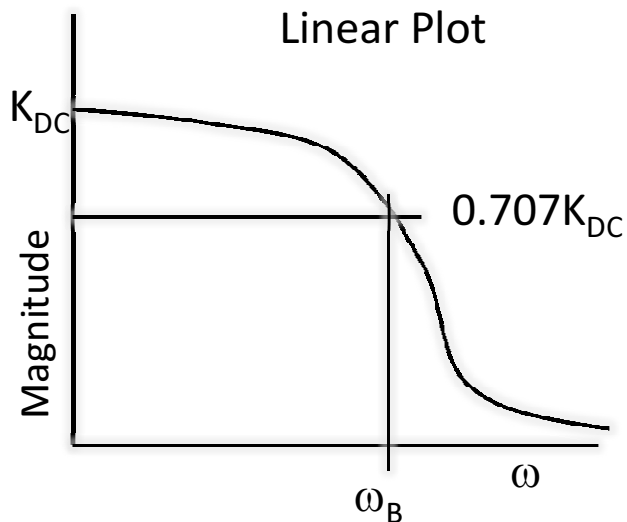
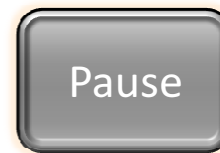
- ⦿ Introduce filtering concepts
- ⦿ Show the properties of lowpass and highpass filters

Analog Filters

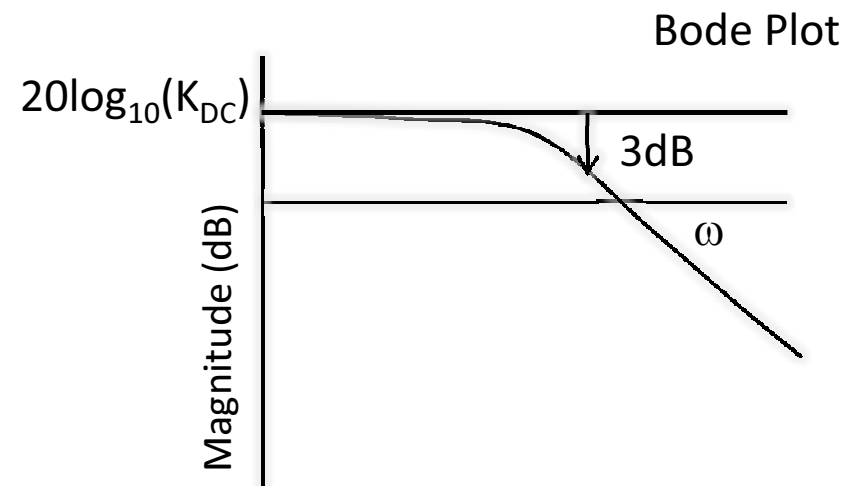
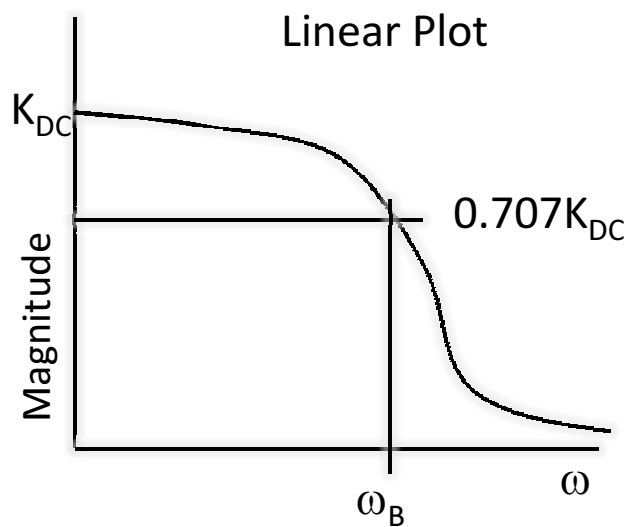


Lowpass Filters

- Pass low frequency components and attenuate high frequency components

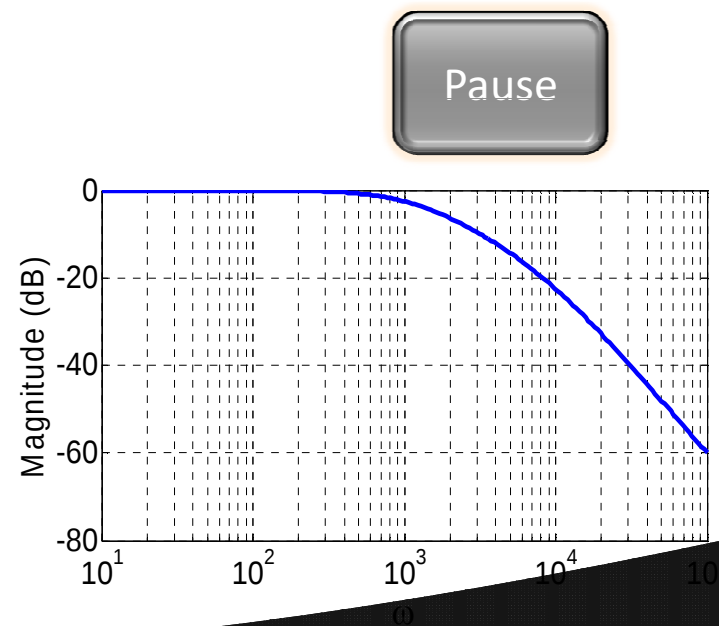
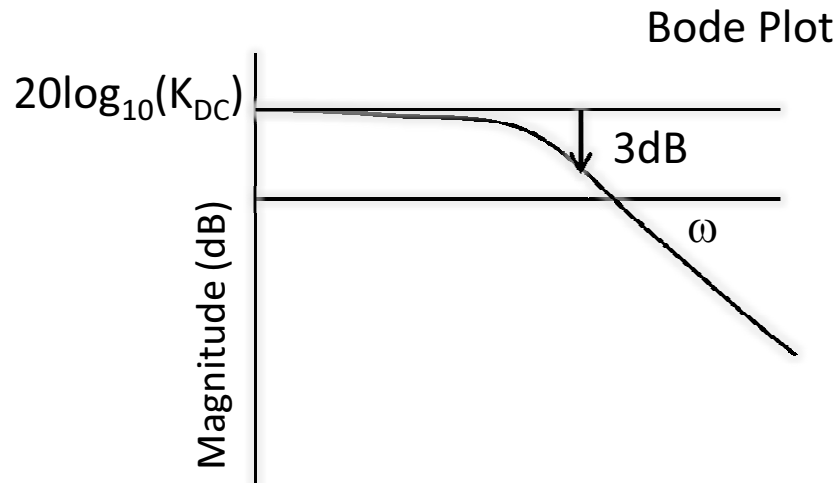


Lowpass Filters

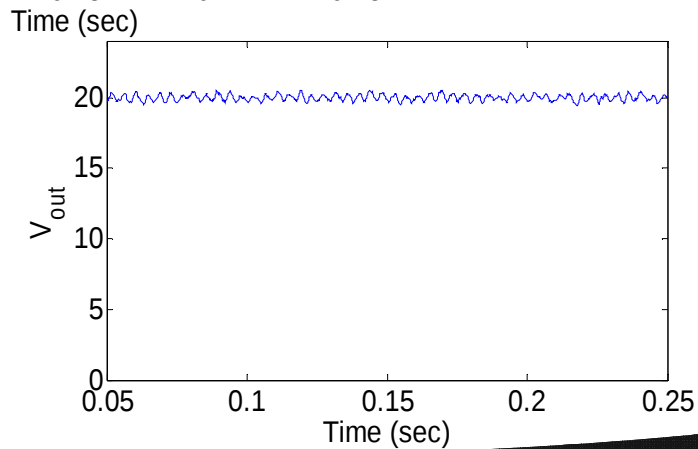
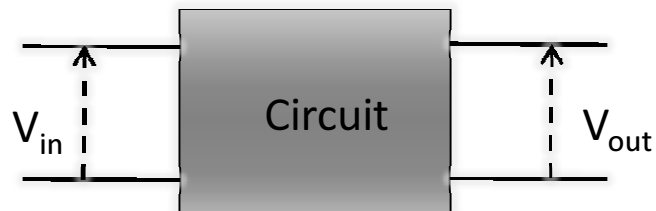
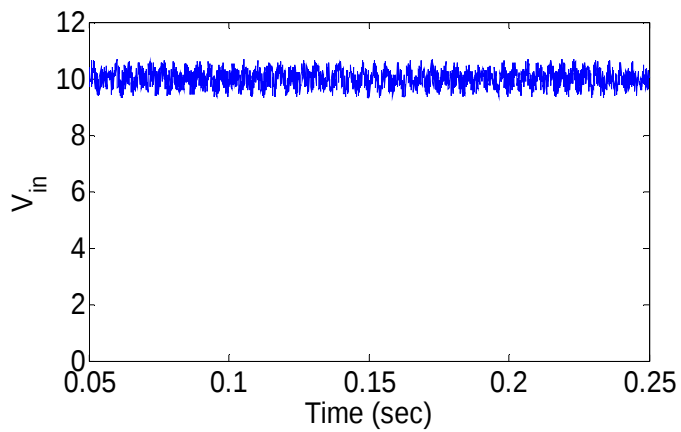


Lowpass Filters

- Bode plot

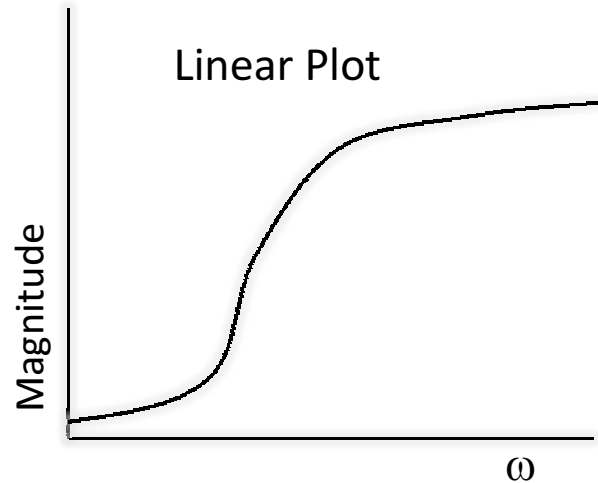


Lowpass Filter Example

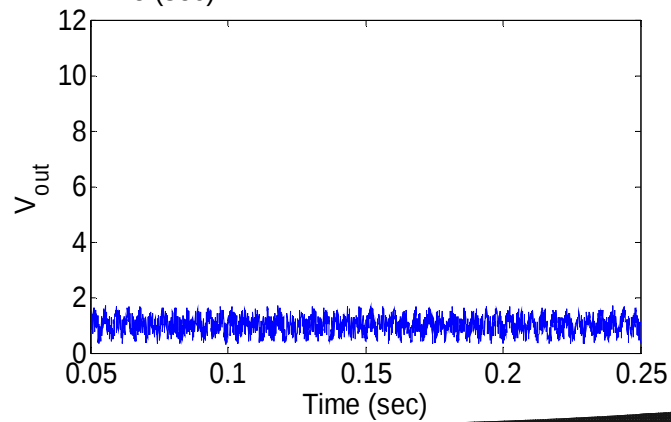
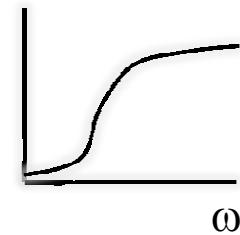
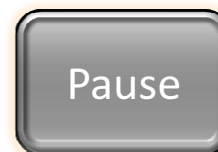
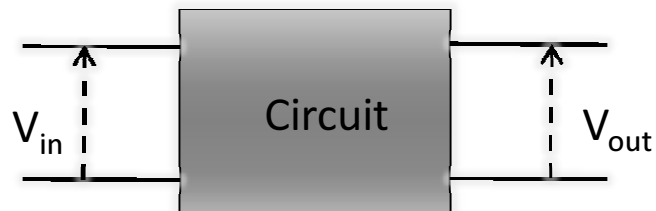
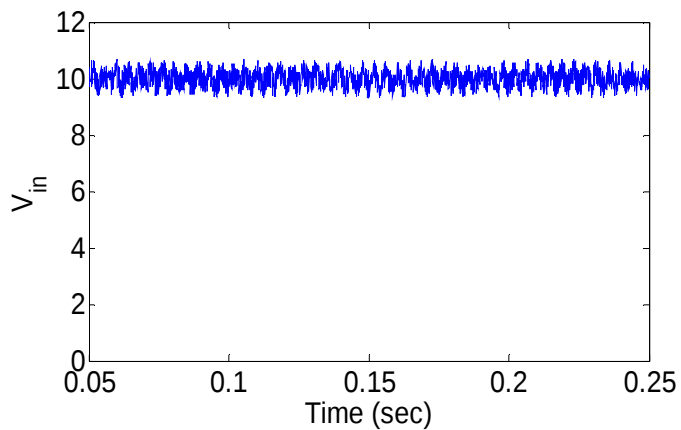


Highpass Filter

- Passes high frequency components and attenuates low frequency components



Highpass Filter Example



Summary

- ⦿ An **analog filter** is a circuit that has a specific shaped frequency response
- ⦿ A **lowpass filter** passes low frequency component in signals and attenuates high frequency components
- ⦿ A **highpass filter** passes high frequency components in signals and attenuates low frequency components

Next Lesson

- © Bandpass and notch filters