



## Unit 4 Sinusoidal Steady-State Analysis – Chaps. 9 and 10 of Text

### 4.1 Review

- 4.1.1 Sinusoidal Sources
- 4.1.2 Sinusoidal Response
- 4.1.3 Phasors
- 4.1.4 Passive Circuit Elements in Frequency Domain

### 4.2 Kirchhoff's Laws and Impedance Combinations

- 4.2.1 Phasor Diagrams
- 4.2.2 Useful Circuit Analysis Techniques – Phasor Domain

### 4.3 Power Calculations

- 4.3.1 RMS and Average Power
- 4.3.2 Complex Power

### 4.4 Maximum Power Transfer

### 4.5 Steady State Response as a Function of Frequency

- 4.5.1 Series *RLC* Circuits
- 4.5.2 Parallel *RLC* Circuits
- 4.5.3 Filters

## Unit 5 Laplace Transforms Techniques in Circuit Analysis – Chaps. 12, 13 and 14 of Text

### 5.1 Review of Laplace Transforms

### 5.2 Examining Circuits in the *s*-Domain

- 5.2.1 Circuit Elements
- 5.2.2 *s*-Domain Circuit Analysis
- 5.2.3 The Transfer Function
- 5.2.4 The Impulse Function
- 5.2.5 Filters in the *s*-Domain

## Unit 6 Other Circuit Applications (time permitting)

### 6.1 Operational Amplifiers

### 6.2 Three-Phase Circuits

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### Evaluation Scheme

| Evaluation Instrument | Value | Date  |
|-----------------------|-------|---|
| *Labs and Pre-labs    | 10%   | Approximately Biweekly                      |
| Quiz (3/4)            | 15%   | Approximately Sept. 26, Oct. 12, Nov. 3, 14 |
| Mid-term Test         | 20%   | October 24                                  |
| Final Exam            | 55%   | Dec. 6-12                                   |

\* Failure to complete ALL lab components will result in an INCOMPLETE grade.

**Calculator Policy** – Graphing calculators or devices which store text are NOT permitted during testing situations.

**Official office hours** – Tuesdays 11AM–1PM. In general, there is an open door policy. Students may check for help at any time and will be accommodated immediately or by subsequent appointment.