

Lecture 3

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- A representation with a single generator labeled 'G' and subsequent loads is referred to as a “one-line diagram”
- Adding a neutral-to-ground impedance is extraneous and may appear as a diversion on a homework or exam problem; these impedances can simply be ignored due to a zero current flow
- For a balanced, three-phase circuit, the average power can be written as:

$$P_{3\phi}(t) = \frac{3}{2}V_m I_m \cos(\phi)$$

or, for RMS values:

$$P_{3\phi}(t) = 3V_{RMS}I_{RMS} \cos(\phi)$$

- The power factor angle is the angle between the line-to-neutral voltage and the line current
- The voltage given will always be in line-to-line terms