

# ENGR 202 : ELECTRICAL FUNDAMENTALS II

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## Transcript title

Electrical Fundamentals II

## Credits

4

## Grading mode

Standard letter grades

## Total contact hours

60

## Lecture hours

30

## Lab hours

30

## Recommended preparation

ENGR 201 and MTH 251/252.

## Course Description

Topics covered in this course include: AC and 2nd order transient analysis, sinusoids and phasors, sinusoidal steady-state analysis, nodal analysis, branch analysis, source transformations, Thevenin's and Norton's equivalent circuits, sinusoidal steady-state power calculation, and balanced three-phase circuits.

## Course learning outcomes

1. Apply Kirchoff's laws to successfully analyze an AC circuit with both independent and dependent sources; check results for consistency.
2. Apply node-voltage and mesh-current techniques to successfully analyze an AC circuit with both independent and dependent sources.
3. Use appropriate tools to describe power use in an AC circuit and distinguish between real and reactive power.
4. Determine line and phase currents and voltages for any balanced configuration of three phase power.
5. Predict the frequency dependent behavior of simple filter through the use of Bode plots.
6. Explain the implications of the Bode plot for the actual behavior of the circuit.