

EE 330 Energy Systems (Fall 2026)

Homework 3

Wednesday, September 16, 2026

- 1) 2-1 **modified** so that the load impedances are $5 + j3.5 \Omega$ and the power lines are 220 V_{rms}.
- 2) 2-2 **modified** so $\bar{Z}_{\text{line}} = 0.1 + j0.2 \Omega$, $\bar{Z}_{\phi_1} = 3 \angle 30^\circ \Omega$, and $\bar{Z}_{\phi_2} = 5 \angle -25^\circ \Omega$.
- 3) For the modified power system of problem 2-2, draw the equivalent a) Y-Y and b) Δ - Δ power systems. I.e., combine all the impedances into a single equivalent impedance $\bar{Z}_Y$ or $\bar{Z}_\Delta$.
- 4) 2-6 **modified** so that $\bar{Z}_{\phi_1} = 9 \angle 30^\circ \Omega$ and $\bar{Z}_{\phi_2} = 4 \angle 32.86^\circ \Omega$

Due Monday, September 21, 2026.