

To pass the unit exam, you must be able to do the following (using books and notes):

CONCEPTUAL TOOLS	Learning Objective	Reading
POWER ELECTRONICS 3-PHASE SYSTEMS Example 1 (pdf) Example 2 (pdf)	4.1. Solve for phase and line voltages and currents in balanced three-phase circuits, including Y-Y, Y- Δ , Δ -Y, and Δ - Δ .	Chap 11 Sec 11.1-11.4
POWER ELECTRONICS AC POWER Tutorial 1 (pdf) p(t), P, Q EXAMPLE 1 (PDF) EXAMPLE 2 (PDF) EXAMPLE 3 (PDF)	4.2. For the sinusoidal steady-state case, find the instantaneous, average, and reactive power delivered or absorbed by sources or circuit elements. Find the power factor for specified cases.	Chap 10 Sec 10.1-10.2
POWER ELECTRONICS AC POWER RMS (root-mean-square) EXAMPLE 1 (PDF) EXAMPLE 2 (PDF)	4.3. Find the effective (rms) value of a given periodic function.	Chap 9 Sec 9.1 Chap 10 Sec 10.3 Chap 16 Sec 16.7
POWER ELECTRONICS AC POWER Complex power EXAMPLE (PDF)	4.4. Calculate complex power for specified circuits and explain its meaning.	Chap 10 Sec 10.4-10.5
POWER ELECTRONICS 3-PHASE SYSTEMS Power EXAMPLE (PDF)	4.5. Calculate complex power and power in balanced three-phase circuits.	Chap 11 Sec 11.5
TRANSFORMERS LINEAR TRANSFORMERS Example (pdf)	4.6. Calculate voltages, currents, power, and impedances in circuits containing linear transformers.	Chap 6 Sec 6.4-6.5 Chap 9 Sec 9.10
TRANSFORMERS IDEAL TRANSFORMERS Example 1 (pdf) Example 2 (pdf)	4.7. Calculate voltages, currents, power, and impedances in circuits containing ideal transformers.	Chap 9 Sec 9.11

* The material in this handout is based extensively on concepts developed by C. H. Durney, Professor Emeritus of the University of Utah.