

ECE 3600 Exam 1 Study Guide

The 1st Exam will be on Tuesday 10/7/14.

The first part will be a **closed book, no calculator** questions, ~ 20 - 40 points

The second part will be a **open book, open notes, with calculator** problems.

The exam will cover

1. HW 1 Energy sources, plant efficiencies

2. HW 2 AC steady-state review, used extensively throughout class

3. HW 3 RMS & Single-phase AC power. P Q S $|S|$ pf correction of pf

4. HW 4&5 3-phase AC power.

$$V_L \quad V_{LL} \quad V_{LN} \quad I_L \quad I_{LL} \quad I_Y \quad S_{3\phi} \quad S_{1\phi}$$

$$Z_Y = \frac{Z_{\Delta}}{3} \quad Z_{\Delta} = 3 \cdot Z_y \quad \text{pf correction of pf}$$

Basic one-Line diagrams

5. HW 6 Magnetic circuits

$$B = \mu \cdot H \quad H = \frac{N \cdot i}{l_c}$$

7. HW 7 - 8 Transformers, including nonideal

8. Non-ideal transformer model

Calculations $\%VR$ η

9. Auto-transformers

Calculations

10. Lab 1

11. Field trip to Gadsby power plant

Possible closed-book questions

All

Basic relationships and units

What is "good"

Basic magnitude and phase relationships

Flux density, Field intensity, Permeability, B-H curve.

Transformer basics, including ratings and impedance transformation.

$\%VR$ η

Connections

Power ratings

Electrocution Safety. Deadly current, body resistance, etc. Basic concepts

Rankine power cycle

You can download old exams from HW page on class web site.
But remember, they may cover more than we did in our class.