ECE 3600   Exam 1 Study Guide

The 1st Exam will be on Thursday 9/29/16

The first part will be a **closed book, no calculator** questions, ~ 15 - 40 points

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

<u>The exam will cover</u>

<u>Possible closed-book questions</u>

1. HW 1 Energy sources, plant efficiencies

All

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

3. HW 3 RMS & Single-phase AC power. $P \quad Q \quad \mathbf{S} \quad |\mathbf{S}| \quad pf \quad$ correction of pf

Basic relationships and units

What is "good"

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

Basic magnitude and
phase relationships

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

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

Basic one-Line diagrams

5. HW 6 Magnetic circuits

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

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

7. HW 7 - 8 Transformers, including nonideal

Transformer basics, including ratings
and impedance transformation.

8. Non-ideal transformer model

$\%VR \qquad \eta$

Calculations $\quad \%VR \qquad \eta$

9. Auto-transformers

10. Lab 1

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

11. Field trip to Gadsby power plant

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.