

ECE 3600 Exam 2 Study Guide

The 2nd Exam will be on Thursday 11/20/14.

The first part will be a **closed book, no calculator** questions, ~ 25 - 35 points

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

The exam will cover

1. Non-ideal transformer model

%VR η

2. 3-phase transformers

Possible questions

%VR η

Y or Δ

3. One-Line Diagrams, variations and Per-Unit analysis

Base Values S_{base} V_{base} I_{base} Z_{base}

Common symbols, why PU

Bases selections, why
and when do they change

Why?

4. Synchronous generators and motors

Know the phasor diagram! Problems like Hw SG1 & SG2

losses, construction,
limits, operation

poles - speed

5. 3-phase induction motors (not single phase)

Know how to work with the model.

Powers P_{AG} P_{conv} P_{out} etc. η

Torque & speeds

Types & effect of R_2

No load, Locked rotor, DC tests to find model

Operation

Slip

Poles - speed

Questions from homeworks

Typ torque-speed curves

What test gives what model part

6. Single phase motors

Phase shift calculations

Types

Single phase starting

Typ torque-speed curves

7. Homeworks 9 - Ind3

8. Labs 1 - 3

Transformer modeling

Bringing a generator on line