

ECE 3600 Exam 3 Study Guide

The 3rd Exam will be on Wednesday 4/12/23

Exam is **closed book**, except for the note sheets handed out in class for exam 1, 2 and exam 3. You may add to these sheets. The first part will be questions, ~ 15 - 25 points. The second part will be problems.

The exam will cover

Possible questions

1. 3-phase induction motors

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

2. **Single phase induction motors**

Phase shift calculations

Operation

Types

Single phase starting

Typ torque-speed curves

3. **DC motors**

Know the model!

Powers P_{conv} P_{out} etc. η

Torques & speeds & speed control

Torque / speed curves

Series-wound & universal motors

Commutator purpose and operation

Basic relationships

DC motor characteristics

PWM

4. **Motor loads**

Types

Torque / speed curves

15 **HW TL1 Transmission Lines**

Short, **Med**, Long Z_C

Series impedance Z_{series}

Shunt admittance & $\frac{Y_{shunt}}{2}$

Shunt impedance & $2 \cdot Z_{shunt}$

Basic relationships

Common line voltages

Short, Med, Long mi, km

What is & why use bundling

5. Homeworks Ind3 - DC3

6. Labs 2 - 3

Transformer modeling

Bringing a generator on line

9. Download old exams from HW page on class web site. Look at Exam 2s and Finals and pick out problems that cover the subjects above.