

ECE 3600 Exam 2 Study Guide

The 2nd Exam will be on Mon., 3/18/24

The first part will be a **closed everything, no calculator** questions, ~ 15 - 25 points. Rest of Exam is **closed book**, except for the note sheets handed out in class for exam 1 and exam 2. You may add to these sheets.

The exam will cover

1. Transformers
Non-ideal transformer model tests OC SC
2. Auto-transformers
3. 3-phase transformers
4. One-Line Diagrams, variations and Per-Unit analysis
Base Values S_{base} V_{base} I_{base} Z_{base}
Basic per-unit modeling and calculations
5. Motor Basics
6. Synchronous generators and motors
Know the phasor diagram!
Problems like Hw SG1 & SG2
7. 3-phase induction motors
Torque - speed curves
Know the model!
Problems like Hw Ind1 & Ind2
8. Homeworks 8 - Ind2
9. Labs 1 - 2
10. Field Trips

Possible questions

- Misc. Information from transformer notes
- Wiring
New rating
- Y or Δ
- Common symbols, why PU
Bases, why and when do they change
Why per-unit?
- Terms, Stator, Rotor, etc.
Armature, Field, back EMF
Torque, Speed, Power
Friction, Windage
Slip rings, brushes
- losses, construction, limits, operation
poles - speed
Bringing a generator on line
- Operation
Slip and frequencies
Poles - speed
Questions from homework Ind1
Typ torque-speed curves
- Transformer modeling
- Basic questions