The 2\textsuperscript{nd} Exam will be on Thursday 11/11/21

The first part will be a \textbf{closed book, no calculator} questions, \~ 15 - 25 points. Rest of Exam is \textbf{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. Non-ideal transformer model
   \[ \% \text{VR} \quad \eta \]

2. Auto-transformers

3. 3-phase transformers

4. One-Line Diagrams, variations and Per-Unit analysis
   - Base Values \( S_{\text{base}} \quad V_{\text{base}} \quad I_{\text{base}} \quad Z_{\text{base}} \)
   - Basic per-unit modeling and calculations

5. Synchronous generators and motors
   - Know the phasor diagram! Problems like Hw SG1 & SG2

6. 3-phase induction motors

7. Homworks 8 - Ind1

8. Labs 1 - 2

### Possible questions

\[ \% \text{VR} \quad \eta \]

Wiring
New rating

\( Y \) or \( \Delta \)

Common symbols, why PU
Bases, why and when do they change
Why per-unit?

losses, construction,
limits, operation
poles - speed

Operation
Slip and frequencies
Poles - speed
Questions from homework Ind1
Typ torque-speed curves

Transformer modeling