

## ECEn 528

### Study Guide – Power Metrics and Modeling

- Read Chapters 1-2 of *Computer Architecture Techniques for Power-Efficiency*
  - Things to focus on
    - Power/Energy Metrics in 2.1
    - Modeling techniques
  - Clarifications
    - Power and energy are even more important now than when these chapters were written. Indeed, big data centers are being located in cool climates (e.g. Iceland, Finland) to reduce the cooling cost.
  - Answer the following questions:
    1. Which metric is best to use when dealing with power issues?

Power(?)

2. Why has static power dissipation become important again?

As threshold voltage decreases, leakage power increases exponentially

3. Describe how a power simulator works.

Capacitance is estimated, then cycle-level simulators are used to compute activity factor and such. Some simulators also use an empirical measurement as a reference point and scale appropriately to new design changes