6.033 Quiz Format

• **Multiple Choice**
  - Normal multiple choice (Choose the best answer)
  - Choose all that apply

• **Short Answer**
  - Louis Reasoner is not always wrong
  - Alyssa P Hacker is not always right
System Complexity

- Where does it come from?
  - Many components
  - Many interconnections
  - Irregularity
System Complexity

- What problems arise from complexity?
  - *Emergent properties* - properties that arise during integration
  - *Propagation of effects* - making one change requires changes through the whole system
  - *Incommensurate scaling* - one part of the system scales faster than another part
System Complexity

- **Tools for Complexity Control**
  - *Modularity* - divide the system into smaller pieces
  - *Abstraction* - hide the unnecessary details inside a module
  - *Hierarchy* - assemble modules into larger modules
  - *Layering* - conceptual levels of abstraction