- As with the midterm, we will use Gradescope
  - Open book and notes
  - Start time exactly 8am; exam must be submitted by
    10:10am (10 minutes extra to get everything uploaded)
  - Please start each of the five problems on a new page
  - You can be remote (with camera on) or in 701 with me
  - Please do not put your name anywhere on the exam,
    whether you are writing on the exam or not
    - This will allow me to do full anonymous grading, which reduces implicit bias on my part

- The final will have five problems
- Problem 1: Short answer (20 points)
  - 10 subparts, 2 points each
  - Covers the entire semester, though more questions post-midterm than pre-midterm
  - Some true/false, some short answer

- The final will have five problems
- Topics that are **not** covered in problems 2-5
  - MPI broadcast, scatter, gather, all-to-all
  - Computing speedup. You may, though, have to compute execution time
  - LogP
  - MapReduce
  - Heartbeat, Region Labeling, Pipelining
  - Weak or strong fairness

- The final will have five problems
- I am likely to ask about fundamentals in general
  - Mutual exclusion, absence of deadlock, absence of unnecessary delay, eventual entry

- The final will have five problems
- Problem 2: Pre-Midterm material (20 points)
  - 7 subparts, 3 points each (except for one 2-point part)
  - Covers concurrency, locks, semaphores

- The final will have five problems
- Problem 3: Monitors (20 points)
  - -3 subparts, 5/5/10 points
  - Make sure that you understand monitor fundamentals

- The final will have five problems
- Problem 4: Message Passing (30 points)
  - 5 subparts, 6 points each
  - This question is fundamental, not any specific application of message passing that we studied
  - Any Send or Receive that I use will be simplified (it's not going to have 7 parameters, in other words)
  - MPI semantics will be used, since you already understand them from program 3

- The final will have five problems
- Problem 5: Dealer's Choice (10 points)
  - Covers post-midterm material