3. What advantages do isolated systems have over distributed systems?

2. What advantages do distributed systems have over isolated systems?

1. What is the difference between a distributed system and a parallel system?

**Distributed systems**

**Final Exam covers:**

- 50% of the exam is on the rest of the course
- 50% of the exam is on I/O systems and distributed systems (chapters 13-17)
3. What is job migration? When would you use it?

2. What is computation migration? When would you use it?

1. What is data migration? When would you use it?

Distributed sharing

7. What is a network protocol stack?

6. What are packets?

5. What are the expected communication costs for the different network topologies?

4. How do node failures affect the different network topologies?

3. What are common network topologies? Which are most suitable to

WANs? Which to LANs?

2. What is a WAN?

1. What is a LAN?
6. What are the advantages and disadvantages of write-back and
write-through caches?

5. What are the disadvantages?

4. What is a cache?

3. What does it mean to say that a distributed file system has a single
(global) namespace?

2. What are location independent names?

1. What are location transparent names?

Remote Procedure Call

Distributed File Systems
Highlights of Memory Management

1. What is virtual memory and why do we use it?
2. What is a TLB? How is one used?
3. What does the OS store in the page table?
4. What is a page fault? How does the OS know it needs to take one, and what does the OS do when a page fault occurs?
5. What is a page frame? How does the OS know it needs to take one, and what does the OS do with a page fault?
6. Page replacement algorithms: FIFO, MIN, LRU, Second chance. For each understand how they work, advantages and disadvantages, cache size, and buffer size. How do they affect reading and writing to I/O devices?
7. How does the OS communicate with I/O devices?
8. What are I/O buffers used for?
9. What are I/O caches used for? How do they affect reading and writing to I/O devices?
10. What is a transfer time?
11. What is a task time?

Highlights of Process Management

1. What is a context switch? What happens during a context switch? What causes a context switch?
2. What are FCFS, Round Robin, SJF, and Multilevel Feedback Queue algorithms?
3. What are the differences between a process and a thread?
4. What is an I/O bound process? What is a CPU bound process? Is there any reason to contact switch to occur?
5. What are semaphores? What are the three things a semaphore can be used for?
6. What is a monitor? What is a condition variable?
7. What is busy waiting?
8. What are the four necessary conditions for deadlock to occur?
9. What is the difference between deadlock detection and deadlock prevention?
10. After detecting deadlock, what options are conceivable for recovering from deadlock?
You will not be asked to read or write C++ code.

You should have a good sense of how the pieces fit together and how changes in one part of the OS might impact another.