Main topics covered (this list is not exhaustive!):
- Networks and Routing: 7 layer stack, role of IP in routing, TCP
- Internet Services:
  - Naming (DNS) vs Directory (LDAP) (you do not need to know SWORD)
- RPCs: Semantics, marshaling and unmarshalling, specifically in XMLRPC
- CDNs and web proxy caches
- Email: SMTP and POP
- Issues related to time in distributed systems

Papers:
- End to end arguments
- Lessons from Large Scale Services: harvest, yield, DQ principle
- CoDeeN basics and takeaways (you do not need to know low level details)
- Porcupine: functional homogeneity

Projects:
- Web server
- XMLRPC multi-tier service

Sample Questions:
The midterm is a mix of multiple choice, short answer, and “answer in a few sentences” questions. The following questions are provided to give you a rough idea of what to expect for the open-ended questions. Note that these questions are only samples. They do not cover all topics and thus they should not be used as a study guide. They are intended to give you a sense of the types of questions I might ask.

1) Provide some pseudo code for a web server. You may choose from a multi-threaded, multi-process, or event-driven structure for your web server. Clearly, you cannot provide all of the code for the web server here. Focus on important data structures that the web server maintains and the high level logic flow through the code. For your chosen design, what interprocess communication is required?

2) How has the end-to-end argument been applied to the design of the Internet?

3) Discuss the potential advantages and disadvantages of using LDAP in place of DNS in the Internet.

4) Compare and contrast data marshalling/unmarshalling in XMLRPC and Java RMI.