

Harvard University
CSCI S-40, Communication Protocols and Internet Architectures

Reading Assignment for Lectures 1 and 2

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Given that this is the beginning of the term, this reading assignment is for both lectures 1 and 2.

Note that the textbook includes some code samples to explain things such as the algorithm for flow control. You should try to read this code (especially if you are a programmer), but this is not a programming course and you can learn all of the material in this course without being able to understand the code samples.

- In the course textbook Internetworking with TCP/IP Volume One - 6th Edition
Read chapters 1, 2, 3 and 4, but skip sections 2.8 and 4.6
Chapter 2 includes a very brief overview of Ethernet, LANs and VLANs. We will cover these topics in much more detail in lectures 3 and 4.
- We will be studying many different RFCs published by the IETF and so it is important that you understand the history and structure of the IETF and the Internet standards process.
Read “The Tao of IETF,” sections 1, 2, 3 and 4. The link is
<http://www.ietf.org/tao.html>
Read RFC 2026, (pages 1 through 20) and RFC 6410
Read RFC 3935
- Another good resource on the IETF is the website of the IETF Education (EDU) Team. This site has presentations on the IETF structure and the standards process. This is optional material.
<http://wiki.tools.ietf.org/group/edu/>
- We will be reviewing the PPP protocol as an example of a link layer protocol, and as you would expect, it is specified in an RFC. RFCs can be found via the IETF website at <http://www.ietf.org/>
Read RFC 1661, pages 1 – 10.
- Read the following tutorials on WANs, PPP and link level protocols. Note that there are many different types and variations of link layer protocols described in these documents, and many of them are now considered legacy protocols. Regardless, studying link layer protocols is still a good way to learn the basic concepts of protocol design and protocol functionality. Note that you do not need to know what the specific bits and bytes do in the headers of these protocols.
http://docwiki.cisco.com/wiki/Introduction_to_WAN_Technologies
http://docwiki.cisco.com/wiki/Point-to-Point_Protocol

- Optional Reading Assignment: The following are some recent articles that show unexpected examples of how networks are changing. They also relate a bit to a couple of the questions on homework #1.

<http://www.cio.com/article/3145700/cloud-computing/amazon-will-literally-truck-your-data-into-its-cloud.html>

<https://aws.amazon.com/snowmobile/>

<http://www.bbc.com/news/technology-37974267>

- In addition to the textbook written by Prof. Comer, we will be assigning a number of readings this term in another textbook written by Peterson and Davie called Computer Networks: a Systems Approach, 5th edition. This book is available online via the Harvard library system (called HOLLIS) and the publisher of the book is Safari Books Online. Note that this was the course textbook a few years ago and it is still available online if you wish to have a copy for future reference.

- * Read sections 1.1, 1.2 and 1.3

- * Read section 2.1, 2.4 (skip the math in this section) and 2.5 (skim or skip the code)

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