Digital Data / Digital Signals (continued)

Manchester Encoding
Advantage
There is an edge for *every* bit.

Differential Manchester
When you see the word *differential*, that means that the Tx+ and Tx- signals can be reversed and still have the correct data.

If there is a transition at the beginning of the bit, it implies that there is a logical zero.

It has the same property of Manchester, in that there is an edge in the middle of the bit.

Digital Data / Analog Signals

Example: Modem

Analog Signal Properties
Amplitude
Frequency
Phase

Different encoding techniques vary these properties in order to carry different information.

Amplitude Shift Keying (ASK)
Logical 1 is represented by one amplitude and logical 0 is represented by a different amplitude. Both waveforms have the same frequency.

Frequency Shift Keying (FSK)
Frequency is varied based on whether a 1 or a 0 is being transmitted

Phase Shift Keying (PSK)
Phase is shifted

Quadrature Amplitude Modulation (QAM)
Uses a combination of PSK and ASK.

Lab Standards Committee
How many bits will be used for addresses?
What is the start bit?
How many start bits are there?
Is the least significant bit or the most significant bit transmitted first?
Who has what address?

Is there a broadcast address? What is it?