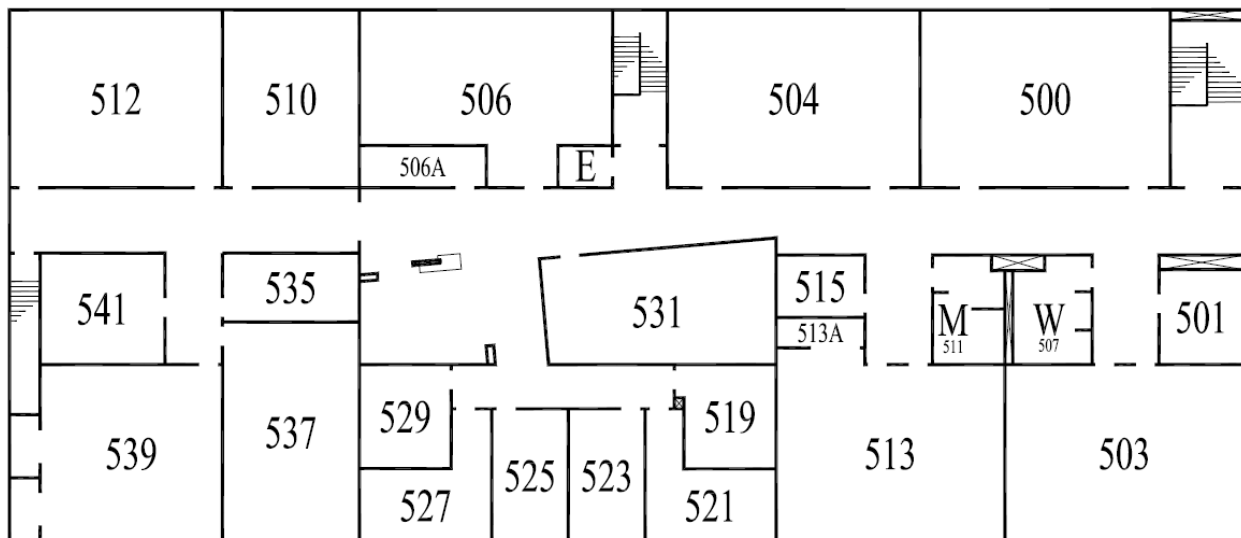LAB 10: Network Planning

Objective

The objective of this lab exercise will be for the student to gain experience planning, budgeting, and designing a network infrastructure for a newly constructed building.

Required Tasks

Based on your knowledge of wired and wireless Ethernet and fiber backbone networks build a recommendation including price elements for the total cost of the project including a break down by room number. Indicate the placement of any and all networking closets.

You will be required to connect to an existing closet located on the first floor. Assume that it is directly below the location of your IDF and will require 20 feet of cable. You will also need to connect to a closet located in a building 10,560 feet (including slack) away.

Rooms 504, 506, and 512 are labs requiring 48 wired drops. All other rooms require 4 drops. Wireless access points should be placed so that all rooms have wireless coverage. There also needs to be drops for each wireless access points.

Costs of Cable (As of 9/22/2014, single vendor):

12 strand single mode fiber	$1.34 per square foot
12 strand multi mode fiber	$1.35 per square foot
Cat 5 UTP	$0.05 per square foot
Cat 5E UTP	$0.09 per square foot
Cat 6 UTP	$0.15 per square foot
Cisco Aironet AP1852I Wireless Access point	$619.99 / unit
Cisco Catalyst WS-C3750X-48PF-L Gigabit Ethernet Switch	$7999.99 / unit
Cisco Catalyst WS-C3750-24PS-S-RF USED 10/100Mbps	$362.99 / unit