

ECE435: Network Engineering – Homework 10
Wireless / Bluetooth

Due: Thursday, 6 December 2018, 3:30pm

For this homework short answers will suffice.

To submit, create a document with your answers (text, pdf, libreoffice, MS Office if you must) and e-mail them to *vincent.weaver@maine.edu* by the homework deadline. Title your e-mail “ECE435 Homework 10” and be sure your name is included in the document.

1. LANs / Switches

- (a) With a self-learning bridge/switch the switch learns the port/MAC mapping by looking at the SOURCE field in incoming Ethernet frames. How does it ensure the frame gets to the right destination if the DESTINATION MAC address is one it hasn't seen before?
- (b) List one reason why you might separate your LAN into separate networks, rather than having one big LAN.

2. Wireless

- (a) If you run `iwconfig` on an Raspberry Pi3 it lists the TX-power available on the wlan0 interface as `Tx-Power=1496 dBm`. Is this a believable value? Why or why not?
- (b) What is the main difference between the 802.11b DCF and PCF coordination functions?

3. Bluetooth

- (a) Why can bluetooth devices interfere with 802.11b transmissions?
- (b) The bluetooth frame header is repeated three times for redundancy. Why isn't a fancier error detection scheme used?