

## CS451/551/ECE441/541 - Advanced Computer Architecture Assignment #6 - Fall 2019

1. In small bus-based multiprocessors, write-through caches are sometimes used because the coherence protocol can be simplified compared to write-back caches. Show how the basic snooping protocol from the textbook, which is designed for *write-back* caches, can be changed for a write-through cache.

2. In the cache coherence protocol that the book describes (e.g., in Figure 5.6), it assumes that a write hit and a write miss are treated the same. The MESI protocol adds an additional state (**M**odified) to the protocol. Draw the cache coherence state diagram for the MESI protocol (similar to Figure 5.6). What advantage does this protocol have compared to the one in the book?