

AME30358 – Score Sheet

M4 – Hydraulic System

Name(s): _____

For more details on any of the items below, please refer to the lab handout.

The following items will be *demonstrated* to the lab instructor during the allotted lab time. Credit will not be given for portions completed outside of lab.

Item and Description	Points Awarded	Possible Points
Subsystem A: Microcontroller and Relays The relays energize and click in the sequence dictated by the microcontroller. The power supply is properly connected to the breadboard.		3
Subsystem B: Hydraulic Pump Manually connecting IN1 to +5V energizes the relay and activates the pump. The measured time to fill the tank looks correct.		3
Subsystem C: Motorized Drain Valve Manually connecting IN2 to +5V energizes the relay and activates the motorized ball valve. The measured time to empty the tank looks correct.		3
Complete Hydraulic System The fully automated system works correctly: The pump fills the tank, system pauses, drain empties tank, system pauses, process repeats.		4
Design Challenge The large pump fills the tank, then the smaller pump transfers 20 ± 2 mL more fluid to the tank. The system pauses, drain valve empties the tank, and the process repeats.		5
Clean-up The students returned the lab bench to its initial state.		2
TOTAL		20