AME 30358 – Score Sheet

M6 – Robot Leg Part I (a.k.a., DC Motor Control)

Name(s):_____

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
Part 0: Getting Started The LED blinks at a rate different from the template.		2
Part 1: DC Motor Setup & Position Control The motor angle is correctly reported in MATLAB in a test when the motor power is off.		2
The motor current is correctly reported in MATLAB in a test when the motor power is on.		3
The motor reaches 1 radian in under 150 ms with an overshoot <0.05 rad via PID control.		4
Part 2: Electrical Model and Current Control Motor resistance properly identified.		4
Motor back EMF properly identified.		4
The current controller successfully tracks the desired current when the motor angle is fixed vs. free.		4
Part 3: Mech. Model and Friction Compensation Motor viscous friction and inertia properly identified.		5
Part 4: Impedance Control Control of stiffness and damping demonstrated.		4
Clean-up The students returned the lab bench to its initial state.		2
TOTAL		34