AME30358 – Score Sheet

M12 – Ball-and-Beam

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: Mechanical Structure The inclined plane 4-bar mechanism is correctly assembled, has adequate range with no singularities.		5
Subsystem B: Servo Motor • The servo smoothly adjusts the inclined plane angle. • The servo signal that levels the inclined plane to the quiescent state at $\theta = 0$ has been identified.		6
Subsystem C: Optical Distance Sensor The sensor is securely mounted and measuring accurate distances to the ball with resolution better than 1 cm.		5
Design Challenge 1 – Proportional Feedback The Inclined plane oscillates under the impetus of proportional feedback.		6
Design Challenge 2 – Proportional-Derivative Feedback A well-tuned controller has been implemented. The mechanism returns the ball to its home position after a few oscillations.		6
Clean-up The students returned the lab bench to its initial state.		2
TOTAL		30