

Project 2 D4: Final performance

		Total Points
Mechanical Design		25
(3 pt) Manufacturing and assembly are of high quality, and does not use tape, adhesives, zip ties, or other similar materials for structural support. (3 pt) Robot (walker/dispenser) can move smoothly and dispense when held in the air. (2 pt) Compliant with size requirements in at least one configuration ($18 \times 18 \times 30 \text{ cm}^3$), must use at least two motorized mechanism-based legs or feet. (2 pt) Design is creative and follows theme that is clear and amusing.		10
Overall Performance		15
(5 pt) Robot Performance: Robust and does not break apart during the race. Moves consistently forward (staying within 2 m lane), and crosses 10 m distance without intervention. Max of 4 interventions within 10 min period (-1 pt per intervention). Dispenses 1 payload every 2 m for 5 times (-0.2 pt per missing payload, -0.2 pt for dispensing > 1 per time). If max distance < 10 m (- 0.2 pt/m).		
(5 pt) Dispenser Accuracy: $ \text{error} $ = magnitude of average error between actual drop distance and 2m. $ \text{error} \leq 5 \text{ cm}$ will get full points. (5 pt) $5 \text{ cm} < \text{error} \leq 10 \text{ cm}$ will get 80% points. (4 pt) $10 \text{ cm} < \text{error} \leq 20 \text{ cm}$ will get 60% points. (3 pt) $20 \text{ cm} < \text{error} \leq 40 \text{ cm}$ will get 40% points. (2 pt) $ \text{error} > 40 \text{ cm}$ will receive no points. (0 pt)		Payload 1 distance from start (cm) P2 distance from P1 (cm) P3 distance from P2 (cm) P4 distance from P3 (cm) P5 distance from P4 (cm) Error for Payload 1 (cm) Error for Payload 2 (cm) Error for Payload 3 (cm) Error for Payload 4 (cm) Error for Payload 5 (cm) Average Error (cm)
		Accuracy Score
(5 pt) Walker Speed Accuracy: [(Average speed)/(4 m/min)] * 5 points. Robot must travel a minimum distance at instructor's discretion (4 m) before adding a speed score.		Time (sec) Max distance (cm) Time (min) Speed (m/min)
		Speed Score
Scoring		Weight
Exceptional: Exemplary achievement.		1.1-1.3
Satisfactory: Meets expectations, is well considered, contains no problems		1
Intermediate: Evidence of achievement. Missed minor requirements		0.8
Marginal: Limited evidence of achievement. Missed major requirement		0.6
Deficient: Minimal evidence of achievement.		0.4
Missing: Not demonstrated/observed		0