

Total Points

		25
Mechanical Design		10
<p>(3 pt) Manufacturing and assembly are of high quality, and does not use tape, adhesives, zip ties, or other similar materials for structural support.</p> <p>(3 pt) Robot (walker/dispenser) can move smoothly and dispense when held in the air.</p> <p>(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.</p> <p>(2 pt) Design is creative and follows theme that is clear and amusing.</p>		
Overall Performance		15
<p>(5 pt) Robot Performance:</p> <p>Robust and does not break apart during the race.</p> <p>Moves consistently forward (staying within 2 m lane), and crosses 10 m distance without intervention.</p> <p>Max of 4 interventions within 10 min period (-1 pt per intervention).</p> <p>Dispenses 1 payload every 2 m for 5 times (-0.2 pt per missing payload, -0.2 pt for dispensing > 1 per time).</p> <p>If max distance < 10 m (- 0.2 pt/m).</p>		
<p>(5 pt) Dispenser Accuracy:</p> <p>$\text{error} = \text{magnitude of average error between actual drop distance and 2m.}$</p> <p>$\text{error} \leq 5 \text{ cm}$ will get full points. (5 pt)</p> <p>$5 \text{ cm} < \text{error} \leq 10 \text{ cm}$ will get 80% points. (4 pt)</p> <p>$10 \text{ cm} < \text{error} \leq 20 \text{ cm}$ will get 60% points. (3 pt)</p> <p>$20 \text{ cm} < \text{error} \leq 40 \text{ cm}$ will get 40% points. (2 pt)</p> <p>$\text{error} > 40 \text{ cm}$ will receive no points. (0 pt)</p>	<p>Payload 1 distance from start (cm)</p> <p>P2 distance from P1 (cm)</p> <p>P3 distance from P2 (cm)</p> <p>P4 distance from P3 (cm)</p> <p>P5 distance from P4 (cm)</p> <p>Error for Payload 1 (cm)</p> <p>Error for Payload 2 (cm)</p> <p>Error for Payload 3 (cm)</p> <p>Error for Payload 4 (cm)</p> <p>Error for Payload 5 (cm)</p> <p>Average Error (cm)</p> <p>Accuracy Score</p>	
<p>(5 pt) Walker Speed Accuracy:</p> <p>$[(\text{Average speed}) / (4 \text{ m/min})] * 5 \text{ points.}$</p> <p>Robot must travel a minimum distance at instructor's discretion (4 m) before adding a speed score.</p>	<p>Time (sec)</p> <p>Max distance (cm)</p> <p>Time (min)</p> <p>Speed (m/min)</p> <p>Speed Score</p>	
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