Project 2 D1: Conceptual Design Review Rubric

Fall 2025 v2

	Points
Total	**10**
Specifications, theme, ideation process	**1.5**
Explanation of your ideation process and how led to theme, dispenser, walker, and gait. List of design specifications considering potential challenges for how to translate real-life to working design. Do not repeat project description specifications, consider potential pitfalls not listed and how to address. Scoring will be based on depth of consideration of design and creativity of ideas	
Design Ideas 1 & 2	**5**
Sketches and descriptions to address DESIGN IDEA 1 Description of the overarching concept and inspiration. Coordination between moving mechanisms (multiple legs, dispensing), maintence of balance, thematic decorations. # legs and passive supports while powering dispensing mechanism and legs from a single motor. How the chosen design and number of legs and/or feet affect balance and gait. Design considers important elements, interactions, and potential pitfalls. Scoring will be based on depth of consideration of design and creativity of ideas Multiple views, sectional and detailed, showing: a) Full chassis showing placement of legs, dispensing mechanism, passive supports, and key components (including motor, batteries, wires). b) Drivetrain and power transmission elements, e.g., shafts, gears and belts, from a rotating motor all the way to legs and dispensing mechanism. c) Leg mechanism design and discussion of walker motion (foot path, gait). Gait or coordination between legs given the mechanism type, number of legs, additional supports, etc. (See "Walking robot background.pdf" in Project 2 module). Note: good walking includes long contact phase foot paths (See "PVA_Guide_example.pdf" - you will do a PVA analysis of your foot path for P2D2). Inclusion of dimensions may be helpful. **Sketches and descriptions to address DESIGN IDEA 2** Description Multiple views, sectional and detailed, showing: a) Full chassis b) Drivetrain and power transmission elements c) Leg mechanism design	
Pros & cons, plan	**1**
Pros and cons on insight into how design relates to specifications. Team has consensus on which design they want to pursue. Timeline including milestones for next design stage, with articulated division of labor	
Review Meeting Performance	**1**
Presentation is clear, well-prepared, and all members participate. **No one reads directly from the slides.** Every team member is informed on all project elements and able to answer questions about the functionality of either design. All members participated in presentation and discussion, including no individual(s) dominating the conversation. Team responds to feedback with new ideas, and strategies to address concerns.	
Report & Figure Formatting	**1.5**
Report is logically organized and formatted. All figures use good plotting and presentation practices, including large font size, thick lines, axis titles, units, and labeling with meaningful caption or label. Hand sketches must be easy to see all parts, **with clear, dark lines and labels**. All images are easy to see and read (not pixelated, blurry, or otherwise illegible). Photos are not dark or have white light	
Extra Credit (functional prototype of one leg mechanism for each design)	**1**
High quality prototype of single leg mechanism is fully functional, can be driven by a single input shaft, and able to demonstrate smooth motion over multiple cycles without failure or falling apart. It is encouraged to use final materials and proposed connectors. Explain scale (full size or % size). Additionally, in your presentation you should list the protoyping questions that your protoype was designed to answer, as well as how the data collected from the protoype will be used to refine your future designs. (Up to 0.5 pt per leg per design)	

Scoring	Weight
Exemplary: Meets expectations, is well considered, contains no problems	1
Proficient: Evidence of achievement. Missed minor requirements	0.75
Developing: Limited evidence of achievement. Missed major requirement	0.5
Deficient: Minimal evidence of achievement. Missed multile minor and major requirements	0.25
Missing: Not demonstrated/observed	0