EDSGN 100 Introduction to Engineering Design

Design Project #1: Folding Shopping Cart

Design Task:

Design and build a prototype of a folding shopping cart for people without cars, or people that need to carry groceries longer than from garage.

Design Specifications:

- The folding shopping cart should be easy to use (and assemble, if required).
- The folding shopping cart should be ideal for transporting groceries and some other materials.
- The folding shopping cart should fold compactly for easy storage.
- The material cost for the folding shopping cart should not exceed $50 unless it can be justified.
- The folding shopping cart should have a weight capacity of 100 lbs.

Key Deliverables:

A design report to be published on the web with the following items included (*Note: Guidelines for the lab report will be given later*):

1. Problem statement
2. Mission statement
3. Customer needs assessment
4. Gantt chart
5. Design approach (concept generation and concept selection with design matrix)
6. Working drawing
7. Prototype (images, scale, operation instruction, etc.)
8. Working mechanism and engineering analysis
9. Cost analysis
10. Conclusion
11. References (if any)
12. Acknowledgement (if any)

Evaluation Criteria:

- Design meets specifications
- Creativity/Innovation
- Working mechanism and operation instruction are clear
- Ease of operation
- Safe to use
- Cost efficient