Design Report

DUE: at the final exam

PURPOSE:
To provide a concise, accurate and informative record of your design efforts Report must be **no more than 12 pages long, including Cover page, Table of contents, and drawings.**

ORGANIZATION:

1. Cover Page
2. Table of Contents
3. Design Report Responsibilities
- List who wrote which parts

4. Introduction
- State the design objective
- Cite some of the essential design constraints
- Briefly summarize your competition strategy

5. Mechanical Design
- Begin with an overview of your mechanical design. Point out the main features and describe how it works, while referring the reader to your dimensioned drawing and photos.
- In subsequent paragraphs, describe each of your main subsystems in more detail, including descriptions of how they were manufactured along with close-up photos and/or drawings.

6. Control System Design
- Begin by describing your collection and depositing strategies. Illustrate these strategies with diagrams showing the intended path of your machine in each room.
- Describe the control logic (and sensors) used to achieve this path. Illustrate your logic with a simple flowchart that summarizes your sequence of programmed maneuvers (e.g. **move forward till it hits wall – backup 6 in – turn right 90^{o} – move forward 12 in** etc.)
- Conclude by presenting a circuit diagram of the electric circuit used to implement your control strategy. Point out the main features and describe how it works.

7. Performance Evaluation
- Describe the performance of your machine both during the graded performance test (DM 4) and the final challenge (last day of classes). Be as quantitative as possible when describing your results.

8. Conclusions and Recommendations
- First paragraph: How would you redesign your machine to improve performance?
- Second paragraph: Any general lessons learned about the design process?
- Third paragraph: Any general lessons learned about teaming?

Appendix – Computer Program
Insert a copy of your computer program here.

GRADING:

Technical Communications 50%

- The report is neat, concise, well organized, and includes all the items listed above.
- The report is well written with good topic sentences, while being free from spelling and grammatical errors.
- Figures are of high quality with figure numbers and captions. Figures are referred to by number from the text.
- The report is presented attractively.

Technical content 50%

- The report shows clear evidence that you understand and have followed the design methodology learned in the design studio.
- The report describes how the design works clearly enough that a person who has never seen the device could produce a working machine from the descriptions and drawings in the report.