

## Final Lab Report Assignment

Due: Wednesday December 3 in MEB 2110 by 4pm.  
Optional draft due week of Nov. 24, 2003.

### Objective:

Evaluate the following topics covered in the Mechatronics Lab experiments during Fall Semester 2003 in order to disseminate how that information may be applicable to your robots.

### Topics to be covered:

- 1) Sensors: Infrared and Sonar
  - a) Testing Procedure- What procedures were used to test the sensors? (e.g.: sensor calibration, implementation on robot, etc.)
  - b) Results - Calibration Information, Robot Performance, etc. (include code in appendix)
  - c) Evaluation/Discussion – Discuss results, recommendations for implementation, etc.
- 2) Data Acquisition:
  - a) Testing Procedure – What aspects of Data Acquisition did you test? How did you test them?
  - b) Results – Resolution, aliasing, etc.
  - c) Evaluation/Discussion: Describe these issues and based upon the HandyBoard's capabilities, what issues must you be sensitive to when using the HandyBoard for control of your robot?

### Format Requirements:

- 1) General format: Extended memo format addressed to your TA. See sample memos on website under Lab Handouts.
- 2) Report Structure:
  - a) Introduction: Briefly describe the focus, motivation, and structure of the report.
  - b) Evaluation Procedures: Briefly describe the experimental methods used to evaluate the above topics.
  - c) Evaluation Results: Present the results derived during the aforementioned evaluation procedures. Include necessary figures in the text of the report. Supplemental information, such as program code written to control robot based on the sensors, should be included in the appendix.
  - d) Discuss Evaluations: Discuss implications and interpretations of results. Remember to focus on how these results may be pertinent to your robot.
  - e) Conclusions
  - f) Appendix: Supplemental information (program code, etc). Not included in page limit.
- 3) Length: Maximum length of the report is 7 pages including Figures. Robot program code should be included in the appendix, which is not included in the page count. Conciseness will be rewarded.
- 4) Figures: Include in text, preferably on or after the page where first referenced.
- 5) Line Spacing: Single Spacing
- 6) Font: 12 point Times Roman
- 7) Margins: 1" Top and Bottom. 1.25" Left and Right
- 8) Teamwork: up to two students may work together on a report.