

# MMAE 232 Technical Report Checklist

Complete and turn in the checklist with your paper

**Abstract**—Each item is -1, maximum -2, for the abstract.

- Less than 250 words
- describes the goal & why the goal is important
- describes the methods used to achieve the goal
- does not refer to any figures, tables, or references
- includes the results of the work (a concise description of the entire paper, not just a shortened introduction)

## I. INTRODUCTION

- Is independent of the abstract, i.e. does not assume the reader has read the abstract. -1
- Includes a figure of the final product. -1
- Includes the functional requirements. -1

## II. CONCEPT GENERATION AND EVALUATION

### A. Sustainable Chair Project

- Includes a Pugh Chart. -1
- Includes illustrations of the conceptual designs. -1

### B. Trebuchet Project

- Includes method used to find the design parameters (i.e. figures and results from computer program). -3

### C. Bioinspired Robot Project

- Includes method to decide among concepts. -1
- Includes figures of conceptual designs. -1

## III. ANALYSIS

### A. Sustainable Chair

- Lines of force are included and correct. -2
- Stress concentrations are identified. -1
- The FEA analysis (figure) is included and discussed. -2
- No superfluous analysis. -1

### B. Trebuchet

- A free body diagram shows how much force is acting on the trigger mechanism from the trebuchet. -2
- A free body diagram shows how much torque is acting on the servo from the trigger mechanism. -2
- Analysis shows the servo can support trigger load. -2
- Analysis shows the axle will not deflect too much. -2
- Analysis shows the axle will not break. -2
- No superfluous analysis. -1

### C. Bio-inspired Design

- Includes proper gait plot. -2
- Includes proper convex contact polygon for each unique section of gait plot. -2
- Includes proper FBD and analysis that shows the minimum torque needed to make system statically stable at all times in the gait cycle. -6
- No superfluous analysis. -1

## IV. EXPERIMENTAL RESULTS

- Includes experimental results. -1

## V. DISCUSSION

### A. Sustainable Chair

- Includes light-weighting techniques used. -1

### B. Trebuchet

- Includes analysis of what went right/wrong. -1

### C. Bio-inspired Design

- Includes description of how the bio-inspired design process was used. -1
- Includes analysis of what went right/wrong. -1

## VI. CONCLUSIONS

- Recaps the paper without introducing new info. -1

## VII. APPENDIX

- Engineering drawings including assembly. up to -4
- Complete dimensions. -2 max
- Dimensions are all outside of the parts. -1-2
- Dimension and leader lines do not intersect other dimension or extension lines. -2 max
- Complete title boxes. -1
- No duplicate dimensions -1
- No hidden lines are dimensioned. -1
- All dimensions for a feature are on one view. -1
- Front view best illustrates the part. -1
- Dimensions from a baseline (no tolerance stackup). -1

## VIII. FORMATTING

- Equations inserted properly. -1
- Correct font & font sizes in body text and captions. -1
- Text does not spill into the margins. -1
- Figures do not spill into the margins. -1
- No unnecessary white space. -1
- All figures have captions. -1
- All figures are referenced in the text. -1
- Units are present and SI. -1
- Column width is correct. -1
- Line spacing is correct. -1

## IX. GRAMMAR AND STYLE

- No fragments or run-ons. -1 per infraction. -4 maximum
- I have reread my paper several times to ensure that the writing is concise and precise. up to -4 points.