

AIAA Paper Grading Rubric

ASEN 4028, Senior Projects 2: Design Practicum Spring 2015

1.0 Document Purpose

This document outlines the AIAA paper objectives and grading rubric for the assignment.

2.0 AIAA Paper Objectives

This assignment is representative of conference papers that are often used in the aerospace industry to communicate accomplishments to the wider professional community. The assignment is intended to give design teams a first-hand experience in communicating their work in this format, and it enables teams to present their work at the AIAA Student Conference, if they desire to attend. Draft versions of the paper are due to advisors before the paper would be due to the AIAA conference organizers, so that advisor comments can be incorporated. The papers are also graded after the AIAA due date, so that all groups can benefit from advisor feedback.

The papers can be organized in any reasonable form, but formatting must follow the guidelines in the AIAA Manuscript Preparation Kit carefully.

Abstract

This should be a concise summary of the paper (as opposed to the project), including purpose, approach, key results, and their implications. Should be less than about 250 words, and contain no jargon, acronyms, references, equations, or figures. The purpose of the abstract is to provide the prospective reader an idea of what the paper is about and its main results. This allows a large body of literature to be searched and sifted to identify those papers that most directly to a reader's specific interests, so they can decide which papers they would profit from reading in detail.

Introduction

This is usually a short section (a page or so) that describes the field of application, the specific need being served, and the rationale for the particular approach used. It also places the work in the paper in context with other work in the field, identifies key issues to be addressed in the body of the paper, defines particular terminology to be used, and outlines the structure of the paper. A nomenclature defining all symbols used is recommended. This is often placed before the Introduction, but can be included in it.

Design Objectives

State the key design criteria (requirements), with specific language and quantified values. Articulate the measures of success defined for the project. Explain how key derived design requirements were flowed down from functional requirements. Identify the resulting critical project elements and the rationale for those to be focused on in the paper.

Design Methodology

Explain how the design was developed from requirements, including the use of feasibility analyses based on fundamental engineering principles, model development and use, adoption or adaptation of best practices from similar developments, and use of preliminary testing in making design decisions.

Design Results

Describe the design outcomes, including a description of the overall system, components manufactured vs. procured, and initial verification and validation results. Be sure to clearly label figures/plots, quantify values, and

explain results. This section should have strong engineering content. This section should constitute the bulk of the paper.

Conclusion

Convey an understanding of the meaning of the results relative to the project objectives and measures of success. Indicate the key next steps toward project completion, and identify the likely impact of the project on the intended application or field of use. The conclusion should not be a summary of the paper.

References

References are required. No technical work will be taken seriously without adequate citations of related work. In the engineering literature, this is not a Bibliography (list of things that were somehow related), but the sources of ideas, methods, or related results that are cited specifically in the text.

3.0 Grading Rubric

After teams have revised their papers according to advisor feedback, they will be graded by their advisor according to the following rubric.

Formatting (10%)

Paper follows the AIAA guidelines precisely, (8-10 pts)

Paper loosely follows AIAA guidelines, (5-8 pts)

Paper is ill-formatted, (0-5 pts)

Clarity and Grammar (30%)

Paper is easy to read, with no serious clarity or grammar issues. (25-30 pts)

Paper is somewhat vague, confusing, or has significant grammar problems. (15-25 pts)

Paper is very hard to understand, not clear what points it is making, or grammar errors significantly detract from a professional presentation of the work. (0-15 pts)

Engineering Content (30%)

Paper shows a strong grasp of engineering fundamentals, terminology, quantification, units, and reasoning. (25-30 pts)

Paper is lacking in conveying a solid engineering basis for the design and results. (15-25 pts)

Paper contains little engineering content. (0-15 pts)

Figures and Graphics (30%)

These are specific, informative, and well-labeled, with explanatory captions. (25-30 pts)

Some figures are simplistic, confusing, or do not contribute to better understanding. (15-25 pts)

Figures in the paper do little to convey information. (0-15 pts)