4.510 Digital Design Fabrication
Fall 2008

Final Presentation

Nov 24, 2008

An Online Research Report

The completed assignment is due in class and posted on Stellar, Monday, Dec 8 @ 3PM

+++++++++++ We will meet in Room 9-255 for the final presentation ++++++++++

a) Presentation – Powerpoint of the design and delivery (construction goals).

b) Paper – PDF document as a research report

1.0   INTRODUCTION

Write a 5 page research report that illustrates your findings from the last three weeks of working with a design, machining and metal. Read up on past research papers on line under the "Research Papers" section of the class website.

The paper should illustrate your findings around the design and its goals, the proposed structure, building a library of parts and application to the shape

- How did you define the shape?
- What is the library of parts?
- The application of the parts to the whole and what you predict?

Do not feel that this paper meant to be a formal document, see it as a blog or a journal entry. Please be brief when explaining a point, do not ramble on a point. Define one thing that you have discovered and talk about that with depth. If you are interested in real research relative to material or structure see the following links to journals on structure, design and construction. Previous papers can inform your decisions or help you better explain the work you have done.

2.0   PAPER FORMAT

The paper should be short and to the point, diagrams help describe the abstract, photos and CAD models should be used to describe findings.

1.0   Introduction

1. Start Broad and become more specific describe the design in a few sentences
2. What is the exploration/research question in your work?
3. Tell the reader why you built your model the way you did
4. If you have time to read the work of past research papers from the class make clear the connection between past research and your work

2.0   Hypothesis

1. State your expected results
2. What is the broadest question you can ask?
3. Focus your work on a phenomenon or concept
4. Hypotheses are based on theories that can be tested do you know a theory that you can test?

3.0   Methods

1. The purpose of this section is to describe in detail how you performed the study. Someone should be able replicate your study based on the information you provide in this section

2. Avoid unnecessary details,for experiments this section is divided into four parts
a) Models – Identify the modeling method – Rhino, surfaces modeling, solid modeling, parametric modeling

b) Apparatus – Size of apparatus, materials, model number of equipment, company and state. Describe the materials used and how they functioned in the study. Describe the purpose of the apparatus. Avoid using action words in this section

c) Design – Describe the design and clearly identify the dependant and independent variables. Describe how the models were applied to groups. Describe any controls

d) Procedure – Summarize each step in the execution of the study. Indicate a typical test trial or study involved. When using models describe the groups used.

4.0   *Experimentation*

1. The **independent variable** is the variable you purposely manipulate (change). The **dependent variable** is the variable that is being observed, which changes in response to the independent variable. The variables that are not changed are called **controlled variables**.

2. What does my model show? How should I present my data graphically so that others can see the results clearly? (e.g. bar graphs, tables, pie charts, line graphs, etc.)

3. Are the results significant? Are there tests I might use to tell me if the results are significant?

5.0   Results

1. Introduction to question, purpose of this research and why it is interesting or matters

2. Description of methods used to collect data Briefly state the findings in words, give a general description then go into detail

3. When possible give some statistical evidence of effective size

4. Clearly describe what you are testing