

PROJECT DESIGN REPORT

ADVANCED METALWORK - MR. WELLWOOD

FIRST & LAST NAME: _____

PROPOSED PROJECT: _____

COURSE DESCRIPTION:

This course is my highest level of Metal-Based Technology. This course involves very advanced projects requiring a high level of critical-thinking and problem-solving skills. Students taking this course must be confident in their ability with tools, so that I can spend time teaching how to design, engineer, prototype and fabricate complex and challenging projects using the lightest, strongest, fastest way possible. The development of employable attitudes and skills is a major theme of every component of this course.

THIS PROJECT MUST DEMONSTRATE:

- Evidence of Design
- Evidence of Engineering
- Evidence of Prototyping
- Evidence of Fabrication
- Evidence of Complex and Challenging Projects

This may be done through ONE major project (200 marks) or MULTIPLE minor projects (marks dependent on project).

1. PROJECT PROPOSAL

Write a BRIEF, point-form description of what it is that you wish to produce. Include as much detail as you can. Know that I am detail-oriented, and difficult to please. I will only accept well-thought-out project proposals.

2. BRAINSTORMING

Include at least 6 (six) drawings of potential ideas for your project. Be as detailed as possible. Show me that you have thought your project out. I want evidence of critical-thinking (there was a design problem, and you solved it). I want to see different ideas. If I cannot tell what you have drawn, I will not accept it.

3. DESIGN

Draw an orthographic drawing (TOP, SIDE, END views) of your chosen design, with DIMENSIONS. Be prepared to accept some suggestions - I am a big fan of efficiency (fastest, easiest, strongest, cheapest), and may make suggestions to make your life EASIER. Take advantage of that. Know that I have a keen eye for flaws and defects. I will only accept quality, correctly drawn designs.

4. JIGS

Jigs are used to make consistently repeatable setups for machining and welding. IT IS IN YOUR BEST INTEREST to design and build jigs for your product. Based on your designs so far, sketch at least ONE jig you will need to fabricate to ensure the success of your project. Think of me asking "How are you going to hold that to machine (or weld) it?"

5. MATERIALS LIST

Use the metal pricing chart in the shop to determine how much your project will cost you.

[illegible]

6. PROTOTYPING

Prototype: *A first of preliminary model of something, esp. a machine, from which other forms are developed or copied.*

As you build your prototype, take digital pictures of each stage. These pictures will be compiled in MS Word, printed out, and attached to this document. You may use the space below, or attach additional sheets.

Be sure to take pictures of any jigs you fabricate to ensure the quality of your product. And yes, you NEED to make jigs.

7. FABRICATION

You should make the most of the fabrication facilities in this shop. List the tools and processes you need to use to ensure the success of your project. Give me DETAIL here. I am not interested at guessing at your response.

8. EVALUATION & REFLECTION

In what ways did your project meet your design intent?

In what ways did your project fail to meet your design intent?

What would you do differently if you were to do it all again?

9. ASSESSMENT

4 - Awesome, thorough in every detail, textbook perfection

3 - Very good, but some room for improvement

2 - Good, shows basic understanding and application

1 - Limited application of procedures and techniques

0 - Unacceptable or not attempted

Quality of Project Proposal	0	1	2	3	4
Quality of Brainstorming	0	1	2	3	4
Quality of Design	0	1	2	3	4
Quality of Jigs	0	1	2	3	4
Detail of Materials List	0	1	2	3	4
Quality of Prototype					
• Measurement	0	1	2	3	4
• Welding/Fabrication	0	1	2	3	4
• Complexity	0	1	2	3	4
• Operation/Achievement	0	1	2	3	4
Evaluation & Reflection	0	1	2	3	4

TOTAL: /40

(Multiplied by 5...)

FINAL MARK: /200