

School of Engineering

Design Report

Advanced Mechatronics System Design – MANU2451

**Team Members:**

|  |  |  |
| --- | --- | --- |
| First Name | Last Name | Student Number |
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**Submission Date: 1/01/2014**

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**Initially do not touch this page. Remember to update the contents after you have completed all sections of the report. Remove this paragraph at the end (after updating the contents).**

# Problem Statement

Establish the design objectives. Granted, your main audience in the proposal understands the objectives, but that audience is not yet convinced that you fully understand the objectives. Explain what you have understood of the project requirements in terms of what is expected from the system you will design and build. What should it do? What are the constraints?

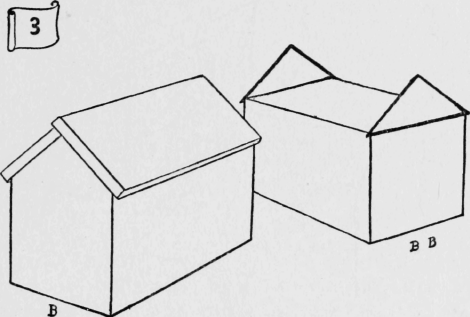
This document proposes **…** Here you formally state what you propose to design. List your design objectives in the following box. A reason that a separately highlighted list of objectives is appropriate here is that readers often return to this section to review those objectives. Having the objectives highlighted like this makes it easier to find.

*Design Objectives:*

1. *Objective 1*
2. *Objective 2*
3. *…*

# Proposed Design

In this section, you need to present the details of your design. This is the final outcome of your brainstorming during several team meetings and discussions on various possible designs that would lead to achieve the objectives listed in the previous section. You are strongly encouraged to present a schematic diagram of your proposed design with all elements labelled in it.



**Figure 1. Captions should appear below figures like this. Remember to enumerate figures sequentially from 1, and give reference to figures like this: “As it is shown in Figure 1, …”**

In a separate paragraph, list every component that your proposed design needs. For each component, explain its role in the design, and clarify what task or objective that component contributes to, and how?

Make sure you provide some calculation of the gears so that the small motor can provide a gripping force of 50N.

## Risk Analysis

In a separate subsection, explain what are the risks involved in your design. What can cause it not to fulfil its tasks completely? What sort of problems and challenges do you reckon may occur during the course of implementing, testing and finalising your system built based on this proposed design?

Do you have a plan B that can be implemented with almost the same components? Explain your alternative design (optional), and preferably present them with schematic diagrams in additional figures.

# Project Management

This section presents your plan for managing the project. This plan should follow a logical sequence. List a number of tasks you will need to complete for the design and build of your system. For each task, determine the timing of completion in a Gantt chart like the one shown in Figure 2. Remember that you should aim for a presentable and working system to be ready for the trial run in week 11. Thus, there is an obvious task of **last enhancements and finalisation** for week 12 when your system must be ready for final demo and assessment.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Task | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 |
| Write the title of Task 1 then put ⃝ for the time it takes. | ⃝ | ⃝ | ⃝ |  |  |  |  |  |
| Write the title of Task 2 |  |  | ⃝ | ⃝ |  | ⃝ | ⃝ |  |
| Write the title of Task 3 |  |  |  | ⃝ | ⃝ | ⃝ |  |  |
| And so on and so forth |  |  |  |  |  | ⃝ | ⃝ | ⃝ |

Figure 2. Gantt chart of the project

## Deliverables

Under this subheading, you will introduce and explain your Gantt chart for the project and the tasks.

# Budget

Here you would place a paragraph or paragraphs that explain the budget for the project. Include a table such as Table 1.

Table 1. Remember to put the captions of tables on top of them, and the captions of figures below them.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Supplier | Quantity | Unit Price | Total Price |
| Your first item | Jaycar | 1 | $39.95 | $39.95 |
| Your next item | ????????? | ? | ????????? | ????????? |
|  |  |  |  |  |
|  |  |  |  |  |
| Grand Total | | | | $?????? |

# Team Work

Here you will re-list the team members, and will explain each member’s contribution and role in the project. Who will be in charge of what? A good idea is to associate team members with the tasks listed in the Gantt chart.

You are encouraged to introduce one team member as the team leader who will be in charge of coordinating all the activities of the team and organising and chairing the meetings. The team leader (if any) will be the main contact person with the course coordinator or lab tutor.

# References

1. Here comes your first reference. Remember to give authors, then title, the address (URL if it is from a webpage).
2. Here comes your second references. Remember that all references MUST be cited inside your document. For instance, this reference must be cited like [2] somewhere relevant in your text.

# Attachment

Spec sheets of sensors, motors…

Action plan / meeting minutes