**Faculty of Engineering and Computing**

**School of Engineering**

**Design For Manufacturing**

**Guidelines For Main Project**

**Background**

The purpose of the main project is to ensure students gain valuable experience in design for manufacture. The nature of the project work is devoted to the creation of a complete design of a product starting from the specification of a problem to the completion of the design and drawing showing all the details. Particularly, your product should be a commercial item that will require human handling. We are restricting the project to far simpler designs to allow for effective completion.

**Instructions:**

In groups of four (4), choose one of the listed items below, or an item similar in complexity and features, and complete a thorough design for manufacturing and assembly (DFMA) analysis based on the content taught and demonstrated in this module. The detail DFMA analysis should cover the following:

* Engineering Design Process
* Materials and Concept Selection
* Ergonomics
* Design for Manufacturing
* Design for Assembly
* Detailing of cost to manufacture and cost to assemble

Additionally, ensure that the following are done:

1. A detail written report is required in soft copy

2. If mechanical fasteners are to be used then use appropriate standard sizes obtainable from the market. Do not design these.

3. For electrical parts such as motors, electrical controls and displays, etc. use what is available on the market. Do not design these, but properly rated equipment must be selected based on calculated need.

4. Detailed working drawings should be presented to enhance your report.

**Example Group Projects**

**Design for Manufacturing**

1. An existing pen made from at-least 5 parts
2. A mouse
3. An existing fan
4. A Tricycle (for Toddlers)
5. Any other device/components similar to the above.