**EE5167 Aug - Dec 2023.**

**Design Project Assignment. Date:** Aug 15, 2023

In this semester-long project, you are going to design a complete system using the components that are available in the market.

You will be working in groups of 2 or 3, and will be adding information to a document as you go along. Your objective will be to produce as detailed design as possible, with at least the components listed below.

Here is how you are going to do it:

1. Create a team and fill this sheet accordingly.
2. Pick up a project that you find interesting from the list below.
3. Use the document linked in the above sheet to start your work.
4. Your document should have at least the following parts

* Desired user facing functionality
* Desired functionality for the designer or the company
* Estimated / desired cost of the project
* Survey of market for justification, costing, features
* Block diagrams of the overall system and its subsystem.
* Hardware specification for each of the subsystem
* Block diagram of the software stack and its subsystem
* Brief description of the jobs of each of software subsystem
* Options available for each of the hardware subsystems and their comparison, leading to your choice. Points for comparison: cost, vendor availability, power requirements, documentation, software/driver support, interfacing capabilities, specifications related to function, any other that may be relevant.
* With the selected subsystems show how all of them fit together. Some estimates on actual performance (if possible)
* Overall estimate of the costs and supplier
* References

Note that you will be updating/redoing the design as you go along, so incrementally work on all these points.

You will be making a presentation at the end to instruct us on the design process and choices you have made.

The design project will carry a significant amount of weightage in the grading.

Here is the list of design projects, if you have any idea of your own, please feel free to ask me if you can work on it. You can expand the scope of the projects to increase its market.

Multiple groups can work on the same project.

1. A drone for delivery of shopping goods.
2. A fitness + smart watch.
3. The controller of an e-bicycle [i.e. wheel, frames are not to be considered]
4. A tracker for cattle [it is worn by, say, a cow, so that they can be located]
5. A lab robot for automating biology experiments.
6. A robot for cooking (e.g. making curries/sabzi or chinese recipes).