UofA Automated Drone club (WIP)

Meeting #1

**INTRODUCTION/DESCRIPTION:**

Drones are very useful in sectors like navigation, transportation, agriculture and photography. [name of club] is a multidisciplinary student group under the faculty of engineering that focuses on building and automating drones that are highly customizable depending on the end user needs. We will also participate in various drone competitions and exhibitions. Students will learn how to build and program drones. Our future vision is to build cost-effective passenger drones.

**ACTIVITIES:**

* Acquire necessary hardware and build drones
* Use Arduino to program control and automation in the drone
* Challenge the robustness of our drones by enlisting them in various competitions
* Build enhanced drones capable of traveling a long distance
* Create our own competitions to allow students an opportunity to experiment building drones

Milestones

* Acquire required hardware and tools to build a drone
* Build the drone
* Use arduino to pair with the drone
* Drone liftoff to a specific height vertically (only)
* Throttle, yaw and roll implementation on the drone.
* Drone able to detect obstacles and probably sound an alarm if its with close proximity
* Get live video feedback from drone to your device
* Create app to control drone from smart phone
* Create a drone that picks up stuff and drops it off at a place

**COMPETITIONS:**

* Collegiate drone racing championship: <https://und.edu/research/rias/cdrc/index.html>
* Student Unmanned Aerial Systems <https://www.auvsi-suas.org/>

**SIDE PROJECTS:**

* Get an aerial view of the city of Edmonton

NEXT meeting:

* Research on hardware and tools for drone
* Creating online profile for the group (ig, fb, website)
* Trello, Jira, slack
* Creating finance book and meeting minutes

Meeting #2

**GENERAL PARTS REQUIRED FOR DRONE BUILDING:**

|  |  |  |
| --- | --- | --- |
| NAME | SOURCE | PRICE |
| Motors |  |  |
| Electronic speed control |  |  |
| Flight controller |  |  |
| The drone frame | <https://www.amazon.ca/gp/product/B019SMDRNW/ref=ox_sc_mini_detail?ie=UTF8&psc=1&smid=ABHM9R5FW478J> |  |
| Propellers |  |  |
| Batteries |  |  |
| Connectors |  |  |
| Camera | - | - |
| Gimbal | - | - |
| A mounting pad | - | - |
| Micro SD | N/A | N/A |
| RC receiver | N/A | N/A |
|  |  |  |

Total torque produced = 2\*weight of drone

Motor type = Low KV since we need to put different modules on the drone frame