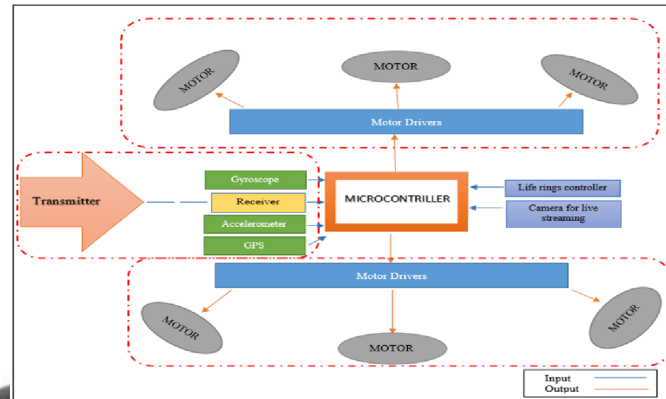


## Abstract

This project aims to design and build a Hexa-copter with capability of carrying a payload of up to 1 kg. the payload will be mainly used for carrying a life ring. A wireless communication system is used to fully control the drone by an RC (remote control) which can be used by the Baywatch to deliver the life ring with the minimal time. A comparison was conducted between the drone and the regular rescuer speed, and it was obvious that the drone won by ultimate minimal time consumed to reach the drown person. As of our online research, we couldn't find any similar project application in PMU and Saudi Arabia yet. Upon the successful completion of this project, it can be introduced to be consider for implementation and commercial.

## Block Diagram Hexa-Copter Drone



Senior Design Project

Life Guard Drone



Fall 2018

Learning Outcome Asse III

Electrical Engineering

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## Project Definition

To design a hexa-copter drone that is controlled by an RC (Remote Control) in which it can carry and deliver a life ring to a certain location. The hexa-copter will have five sub-systems in addition to the main one which are frame structure, motors and propellers, communication systems, camera for live streaming, and life ring holder. These sub-systems will highly enhance the performance of the drone in which it will increase the speed, stability and efficiency.



## Project Objectives

1. Applying the advanced technology in saving lives.
2. Learn about the communication systems and control a drone
3. Having the minimal time to deliver a life ring.
4. Showing a live streaming of the delivery and while flying.



## Project Specifications

1. Flying time is up to 15 minutes free load.
2. Capability of carrying a payload of 1kg.
3. Li-Po 6-Cells, 22.2 V, 16,000 mAh.
4. Sized from motor to motor is 960mm and ground clearance 350mm.
5. Wireless communication.
6. Radio system with a control range: 0.6km on land, 1.0 km on air.
7. Monitor the flying operation through a live streaming and an RC.
8. Portable, having a light-weight, and environmentally friendly.

