University of Nevada, Las Vegas.

Drones and Autonomous Systems Lab (DASL)

DASL 106 - Basic Drone Dynamics.

Summer 2017.

Instructor : DONGBIN KIM,

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Office Hour : 8am to Midnight (Monday - Friday)

Classroom : Drones and Autonmous Systems Lab., 4137 Escondido Street, Las Vegas, NV 89119.

Textbook : Textbook is given as PDF file on Course page.

Pre-requisites: Dynamics, Fluid Dynamics, Aerodynamics.

Homework: Homework is given weekly in class.

Course Description :

This course is designed to teach undergraduate/graduate student member in Drones and Autonomous Systems Lab(DASL) with Lego Flybrix including fundamental theory of Dynamics, Aerodynamics, Fluid Dynamics in Unmanned Aerial Vehicle. Special approach is given through various experiments with Flybrix for understanding. The flight data is served from Flybrix Google Chrome Extension. The course is given for 4 weeks.

Member Learning Outcomes:

- More knowledge about Unmanned Aerial Vehicle Systems.
- Capable of building Multi-rotors.
- Friendly with UAVs flight control.

Grading:

Homework (60% - 15% per each), Final (40%), Total 100%

A (90~100%), B (80~90%), C (70~80%), D (60~70%), F (~60%)

Week	Topic	Homework.
1	-Introduction: Unmanned Aerial Vehicle. -Introduction: Lego Flybrix, -Flybrix Assembly, Test flight	Find better construction of Flybrix.
2	-Rotor response Analysis on flight. (Roll, Pitch, Yaw)	Report – Rotor response of 3 movements.
3	-Flybrix Payload Calculation analysis.	Report – Lift time with 3 different carriers,
4	-Hexacopter, Octacopter Flybrix analysis.	Report – Comparision the payload with Quadcopter.
Final	50% paper exam, 50% flight test.	N/A