Unit 6 - Week 4

Assignment 04

Due on 2020-10-14, 21:00 EST.

1. Data for question 1 & 2:
   - Use of Fixed Wing UAV.

2. Data for question 3 & 4:
   - Following data is applicable:
     - Range: all 50, 100, 100
     - Start: 10, 10, 10
     - Wind: 10, 0, 0
     - Speed: 10, 10, 10
     - Altitude: 10, 10, 10
     - Current: 10, 10, 10
     - Angle of attack: 10, 10, 10
     - Lift: 10, 10, 10
     - Drag: 10, 10, 10
     - Thrust: 10, 10, 10

3. Location from [wing loading edge] of wing aerodynamic center: [Xw, Yw] = [0.15, 0.05]

4. Location from [wing loading edge] of 10 rail aerodynamic center: [Xr, Yr] = [2.5, 0]

Note: Neglect the effect of fuselage on stability.

The location of aircraft position of the above data might be [X, Y, Z] by fuselage edge of the wing.

1. [Diagram of aircraft]
   - X
   - Y
   - Z

2. [Diagram of aircraft]
   - X
   - Y
   - Z

3. [Diagram of aircraft]
   - X
   - Y
   - Z

4. [Diagram of aircraft]
   - X
   - Y
   - Z

5. Identify the horizontal tail volume rate of the Fixed Wing UAV.

6. [Diagram of aircraft]
   - X
   - Y
   - Z

7. What will be the horizontal tail volume of a 10 degree angle of attack of [Xh, Yh, Zh]?

8. [Diagram of aircraft]
   - X
   - Y
   - Z

9. For an UAV having [Xu, Yu, Zu] to be shown in the figure.

10. The wind speed for the given UAV.

11. For an UAV having [Xu, Yu, Zu] and [Xl, Yl, Zl] to be shown in the figure.