Task: Tasked with developing a full flight simulator in Python as part of ECE-163: UAV Theory and Control.

Action: Using a pre-provided GUI interface. I coded each module in Python to provide simulation for a fixed wing aircraft. This included Vehicle Estimation & Control, Vehicle Sensor & Sensor Noise Modeling, An autopilot FSM, A wind model, Vehicle Dynamic & Aerodynamics.

Result: Fully functional flight simulator which can be modified to simulate other aircraft types such as Helicopters. For a final project, I worked with two other students to change the generic polygonal aircraft model to a more realistic model with animated control surfaces. The aircraft can be controlled either via keyboard or more accurately with a gaming joystick (HOTAS-style)