Flight Dynamics and Control of Vertical Lift Vehicles

Wednesday, Jun 14

- 10:00 to 11:30 - *Lecture 1*: Course Introduction and Review of Fundamentals in Vertical Flight Aerodynamics
- 16:00 to 17:30 - *Lecture 2*: Modeling of the of Rotorcraft Flight Dynamics

Thursday, Jun 15

- 10:00 to 11:30 - *Lecture 3*: Trim, Linearization, and Model-Order Reduction
- 16:00 to 17:30 - *Lecture 4*: Dynamic Modes of Motion in Hover and Forward Flight

Monday, Jun 19

- 10:00 to 11:30 - *Lab 1:* Dynamic Analysis of a Simple Helicopter Model
- 16:00 to 17:30 - *Lecture 5*: Intro to Rotorcraft Flight Control Design

Tuesday, Jun 20

- 10:00 to 11:30 - *Lecture 6*: Modern Flight Control Design I: Explicit Model Following
- 16:00 to 17:30 - *Lab 2*: Implementation of Explicit Model Following Flight Control Law

Wednesday, Jun 21

- 10:00 to 11:30 - *Lecture 7*: Modern Flight Control Design II: Dynamic Inversion
- 16:00 to 17:30 - Lab 3: Implementation of Dynamic Inversion Flight Control Law

Thursday, Jun 22

- 10:00 to 11:30 - Stability, Handling Quality, and Performance Specifications
- 16:00 to 17:30 - Model Stitching/Tiltrotor Modeling and Simulation