First Course Handout: AE-201A

1. **Objectives:** This course can mainly be considered as an introductory course in Aerospace Engineering. In this course, we will learn about various aerospace vehicles, for example, fixed wing vehicle, rotary wing vehicle, and some space vehicles.

2. **Prerequisites:** Students are expected to do the course, ESO-204A, simultaneously, for better understanding some of the course contents.

3. **Course Contents:**

   - **Fixed wing vehicles**: History of Aviation, introduction to fixed wing vehicles, configuration and lay-out, propulsion, lift generation mechanism, balance of forces and moments, control mechanisms.

   - **Space Vehicles**: History, configuration and lay-out, propulsion, lift generation mechanism, balance of forces and moments, navigation.

   - **Rotary wing vehicles**: History of rotary wing vehicles, configuration and layout, Propulsion, lift generation mechanism, balance of forces and moments, control mechanisms

4. **Special Emphasis:** Main emphasis will be on the basics of various aerospace vehicles.

5. **Lecture, Tutorial & Lab Schedule & Venue**:
   There will be three lectures per week. Monday, 12:00 -12:50 pm, Wednesday, 12:00 -12:50 pm, and Friday, 12:00 -12:50 pm at L-6.

6. **Office Hours for this course:** Thursday, 4:30 pm-5:30 pm (if I am not available at my office, kindly email me with your mobile number, so that we can plan our meeting once again).

7. **Evaluation Components & Policies:** One examination and two/three quizzes (**65%** in Final exam +**35%** quizzes and attendance)

8. **Course Policies: Attendance, Honesty Practices, Withdrawal** (within the limits of DOAA Guidelines). Negligible attendance record might render deregistration from the course.

9. **Books & References:** Some of the following books along with web resources will be referred to cover various topics in this course.

   (a) ***Introduction to Flight*** *by John D Anderson (Jr)*

   (b) ***Fundamentals of Flight*** *by Richard S. Shevell*

   (c) ***Introduction to Aerospace Engineering*** *with a flight test perspective by Stephen Corda*

   (d) ***Fundamental of Helicopter Dynamics*** *by C. Venkatesan*

   (e) The simple science of Flight: from insects to Jumbo Jets by Henk Tennekes

   (f) Meet Aerospace Vehicles by Victor Kirillov

   (g) Understanding Flight by David F. Anderson and Scott Eberhardt