

# Introduction to airplane piloting

Syllabus Number

2B213

Special Subjects

Elective 2 credit

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## 1. Course Description

At first, you will learn an overview of aerodynamics, structure and equipments of the airplane. Then, you will learn how airplane maneuvers and how you control airplane. Finally, you will learn a variety of knowledge that the pilot must keep know, airports, radio, weight center of gravity, operating limitations, performance, weather, navigation, and other summary of things.

## 2. Course Objectives

In order to control the fixed-wing aircraft, the pilot must have extensive knowledge not only aerodynamic characteristics and steering method. To design and manufacture the aircraft, it is essential to see the aircraft in the pilot point of view. This course will aim to learn its entirety.

## 3. Grading Policy

It depends on the final exam (100%).

I will give feedback on the previous review in each lecture.

## 4. Textbook and Reference

### Textbook

郡山卓三 『飛行機操縦のABC VISUAL』ISBN-13: 978-4802200004 イカロス出版

### Reference

『AIM-j (最新版)』 日本航空機操縦士協会

『Private Pilot Manual』ISBN-13: 978-0884872382 Jeppesen Sanderson, Inc.

『GFD Private Pilot Maneuvers Manual』ISBN-13: 978-0884870524 Jeppesen Sanderson, Inc.

国土交通省航空局 監修 『飛行機操縦教本』 一般財団法人 航空振興財団

## 5. Requirements(Assignments)

It is essential to prepare textbooks and reference books and summarize the main points in notes. (1.5 hours)

Lectures will be conducted in an interactive manner as much as possible, so if you prepare and take questions, you will deepen your understanding.

Also, take notes in the lecture, read the textbook again, and review. (1.5 hours)

## 6. Note

It is strongly recommended that you have already taken "Introduction to Aeronautical Engineering".

## 7. Schedule

- [1] Flying by airplane (1): Outline of plane ~ Outside inspection.
- [2] Flying by airplane (2): Takeoff ~ Cruise ~ Landing.
- [3] Principle of flight.
- [4] Airplane subsystems (1): Outline of aircraft structure and Equipment, Control system.
- [5] Airplane subsystems (2): Engine, Propeller, Carburetor.
- [6] Airplane subsystems (3): Ignition system, Fuel system, Lubrication system, Exhaust system, Landing gear, Anti-icing system.
- [7] Cockpit.
- [8] Light airplane performance.
- [9] Flight control basics (1): Pre-flight preparation, Check details.
- [10] Flight control basics (2): Take-off ~ climb ~ level flight ~ turn.
- [11] Flight control basics (3): Stall training ~ descent ~ approach ~ landing.
- [12] Aerial navigation.
- [13] Signs and displays of airports, Radio communication.
- [14] Supplementary explanation of important points.
- [15] Summary, Examination